FC4S
FINANCIAL CENTRES FOR SUSTAINABILITY

Hosted by UNDP

Biodiversity Finance

FC4S Work Programme outline

February 2022

Development grant provided by

Sustainable Finance Ireland

Table of Contents

Executive Summary

All stakeholders in financial and capital markets are reckoning with the challenge of Biodiversity Finance [1] – from central banks and supervisors, institutional investors, stock exchanges and bond markets, to standard setters, ratings agencies and data providers.

The link between climate and biodiversity action is becoming clearer [2]. Climate change is one of the primary drivers of the natural world's decline [3] but mitigation and adaptation efforts are made considerably more challenging by the continued plundering of natural resources, which in turn causes further destruction of the natural world and exacerbates the climate emergency.

Increasingly, governments and communities are seeking actions that address both challenges together. Among these includes increased attention and recourse to Nature-based Solutions [4]. At the FC4S 2020 Annual General Meeting, the secretariat proposed exploring the emerging topic of Biodiversity Finance with a view of adding it to the FC4S work programme.

A Working Group was established and, in collaboration with technical experts, identified key facets of the issue through a mapping exercise. The group then helped to draw up a Biodiversity Finance Action Plan that addresses the needs of financial centres. The Working Group addressed five facets of Biodiversity Finance:

1. Transparency and disclosure:

There is growing investor interest in using the outputs of the Task Force on Nature-related Financial Disclosures (TNFD) to improve management risk relating to the decline of natural resources and ecosystems, nature-dependent value chains, and to sharpen assessments around the impact of investment portfolios on biodiversity.

2. Data

Addressing biodiversity finance is a continuing challenge. This is due to limitations on access to 'investor-grade' data relating to biodiversity risk, dependency and impact, as well as a lack of widespread agreement on definitions, taxonomies and what needs to be measured. However, the situation is rapidly improving and it is already possible to "stress test" portfolios.

There is a need for greater access to both data and methodologies through open-source platforms which can, in turn, fuel innovation and improve Sustainable Development Goal (SDG) scorings.

3. Fintech

Fintech has played a crucial role in reducing the number of intermediaries between financial actors and in informing consumers of the real-time impact of their transactions on biodiversity. It has personalised the effect consumer choices have on biodiversity but there are also a range of issues to guard against. Helping financial centres navigate this complex and fast-moving field could be an important service.

4. Promoting a "Nature Positive" norm

The widespread adoption of the net-zero target in terms of carbon emissions has triggered a call for an equivalent in nature. While this debate is yet to advance, there is increasing support for a policy that requires businesses to demonstrate that they are leaving ecosystems in better condition than when they began their activities. Ideally, the net-zero and nature-positive movements will combine to become key to earning a "license to operate" at the global level. This shift could lead to win-win outcomes for people, businesses and ecosystems.

5. New financial instruments

The growing interest of financial and capital markets in Biodiversity Finance has led to the development of new, and increasingly more sophisticated, financial instruments aimed at conserving and restoring ecosystems. These include the revival of "debt for nature" swaps and the rapid expansion of green bond markets.

Blue bonds relating to the marine ecosystem include a proposed class of "KPI Bonds" which have great potential to be offered at scale. Nature-performance bonds [5] offer new capital or debt relief in exchange for a debtor country achieving pre-agreed and certified nature-performance targets. These new instruments are of particular interest to both sovereign debt relief and commercial bond markets – and to financial centres.

FC4S will take three major actions to improve capabilities of the financial centres in all these themes. They include:

1. **Targeted information sessions and capacity building workshops to address the specific knowledge gaps;**
2. **Helping develop Biodiversity Finance roadmaps with best practice models;**
3. **Enhancing synergies and cooperation between financial centres and global biodiversity experts, specifically technical experts with access to innovative tools that can contribute to biodiversity solutions.**

1. Framing the Debate

Biodiversity Finance was, until recently, considered a niche topic. This was in large part because nature-related risk was not seen as material to financial decision-making. Indeed, investments in nature-related projects were regarded as philanthropic offerings in the areas of environmental and social responsibility, and represented only a tiny proportion of impact investment. While a number of specialised impact funds have emerged, focusing exclusively on biodiversity investments, they have tended to grow at a modest pace – if at all. Moreover, businesses urged to address biodiversity-related risk often said they were struggling to mainstream the climate conversation and had no capacity to add another highly complex target.

Today, the debate on Biodiversity Finance has spread across the full range of actors in the financial and capital markets – from central banks, financial supervisors and institutional investors (especially in the

insurance industry), to rating agencies, norm setters and data players. It has been become an area for political cooperation between G7 and G20 countries and was discussed at three Rio Conventions (UNFCCC, UNCBD and UNCCD). It is now a central part of the agenda for civil society, academic research, and advocacy groups.

The debate has now fundamentally shifted. Until recently the key challenge was believed to be increasing the flow of funds – public and private – to conservation efforts. While we will argue below that the massive funding shortfall will have to be addressed, Biodiversity Finance is emerging as a key plank of the solution architecture and part of the debate on striking a balance between profit and the need to protect public spaces. It is about how global markets should function, the reversal of the trend towards "financialization" and realignment of finance to meet the needs of the real economy. Biodiversity Finance is no longer about individual investment or philanthropic decisions but part of the mandates of financial market regulators. It approaches finance as a system and sees the challenge as how changes to that system can best help us meet our nature-related goals.

Politically, the biodiversity finance agenda has "arrived", though it is still new and unfamiliar. It is no longer a question of if, but when, how and how fast it can be implemented. We have reached an inflection point.

How did this happen?

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Service (IPBS) 7 has, along with other authorities, been delivering a series of harrowing updates on the state of the environment. Public concern has also been raised by the failure to meet any of the ten-year global biodiversity (Aichi) targets [8] set in 2010. Indeed, not only were the Aichi targets not achieved, the pace at which biodiversity indicators are worsening continues to accelerate. The solution to this problem has traditionally been to seek increased funding for nature-related activities. The Paulson Institute argues that reversing the decline in biodiversity by 2030 will require between US$722billion and $967billion of spending each year for the next ten years [9]. This means there is a **biodiversity financing gap** of between **$598billion and $824billion per year** [10]. A more recent UNEP report [11] on the State of Finance for Nature puts the figure at $536 billion while adopting a wider scope. The challenge is enormous – but so is the opportunity. The World Economic Forum estimates that $44trillion of global output is at risk due to the decline of the world's ecosystems [12]. At the same time, it also estimates that nature-friendly investment represents an opportunity worth some US$10trillion and that it could lead to the creation of 395million jobs [13].

The Evolving Debate

From an earlier focus on how to fill the funding gap of several hundred billion dollars to address urgent nature-related issues, the debate has shifted focus to the reforms needed to the rules that govern the financial and capital markets so that the impact of finance on nature is limited and that it serves to conserve and restore natural resources. The pandemic-induced delay to the 15th Conference of the Parties of the UN Convention on Biological Diversity has reinforced finance as the centrepiece of the international cooperative agenda.

Before the Covid-19 pandemic, 2020 had been billed as the "Super Year for Nature", culminating in the Biodiversity Summit. The June 2021 launch of the UN Decade on Ecosystem Restoration, the inclusion of nature and nature finance at the G7 and COP26, and the rapidly growing interest of the G20 in the topic of Biodiversity Finance, suggest a renewed political interest in the environmental cause.

The link between climate and biodiversity action is becoming clearer [14]. Climate change is one of the primary drivers of the natural world's decline but mitigation and adaptation efforts are made considerably more challenging by the continued plundering of natural resources, which in turn causes further destruction of the natural world and exacerbates the climate emergency.

Increasingly, governments and communities are seeking actions that address both challenges together. For example, the UK has pledged that 30% of its spending on climate will be devoted to avoiding or reversing nature loss [15]. It is clear that the two challenges should be addressed together through implementation of nature-based solutions. This notion received strong enforcement with the launch of the IUCN Global Standard on Nature-based Solutions [16] and the IUCN Manifesto [17], both at the World Conservation Congres in Marseille, in September 2021.

The Coalition for Convergence of Climate and Biodiversity Finance The Coalition for Convergence of Climate and Biodiversity Finance argues that nature-based solutions could represent up to 37% of efforts to mitigate global warming, whereas at present the proportion of international investment directed at nature-related priorities does not exceed 3% [18]. This bleak reality led to financial commitments by a number of countries, including the likes of Canada, Norway, the UK and France, during the One Planet Summit in January 2021. France committed 30% of its bilateral climate funding directly to biodiversity by 2030, with the country's public development finance institution aiming to achieve this goal as early as 2025 [19]. The UK, meanwhile, committed £3billion of the £11.6 billion it has already allocated to bilateral climate finance to projects with co-benefits for biodiversity and the environment [20].

Lastly, social movements and advocacy groups are beginning to crystallise successful divestment movements which involve consumer rejection of value chains dependent on deforestation, rapid growth of climate and nature-related litigation, and pressure for policy alignment. For example, there has been a push to re-examine the allocation of the $11trillion of capital held by the world's development finance institutions with a view to better understanding nature-related risks and impacts [21].

Major efforts in combating biodiversity loss are evident in the Finance for Biodiversity Pledge in which 55 financial institutions with €9 trillion under management committed to taking ambitious action to protect biodiversity, and called for global leaders to agree on effective measures to reverse nature loss and ensure ecosystem resilience.

Legal Action

Legal action rests on an increasingly strong base of recognised "Rights of Nature", from emerging meta standards like "Ecocide" [22], to constitutional and legal recognition of these rights. A rapidly expanding body of jurisprudence recognises the right of nature in areas including integrity, protection from damage, standing in court, and recourse in the case that damages are demonstrated. Infringing these rights leave private interests open to financial risk. A court in Ecuador recently cancelled a major mining license on the grounds that it would infringe the rights of nature [23]. New policies, guidelines, and resolutions are increasingly pointing to the need for a legal approach that recognises the rights of the Earth and its importance to individual wellbeing. Harmony with Nature estimates that a total of 29 countries have implemented legal obligations that protect nature and hold non-compliant citizens accountable for harmful actions against nature [24].

Other developments include widening the application of anti-money laundering rules to all environmental crimes and broadening the scope of these rules to include any legal financing that benefits from environmental crimes.

Questioning the Risk and Return Models

Forums have emerged in which the finance and nature communities interact to identify actions that could favor greater investment in natural capital. Prominent among these is the series of annual Crédit Suisse Conservation Finance Conferences, as well as the IUCN-led Coalition for Private Investment in Conservation which have focused on how to make conservation actions more attractive to private investors. These conferences have zeroed in on the need to make projects that benefit nature "investor grade" which has in turn led to a strong concentration on how to lower the risk of conservation investments and how to ensure that the projects yield a return that is competitive with other claims. While those touting conservation investments have grown more adept at generating "investor ready" proposals, perceptions of high risk (including the political risk associated with many high biodiversity countries) and the modest or slow rates of return has ensured that nature-friendly investment has not expanded at the rate once hoped for.

Many attempts have been make nature a more palatable investment environment, from blended capital and public-private partnership approaches to risk insurance instruments, to the development of impact investment (that accepts higher risk and lower rates of return in exchange for genuine impact results), to "deep impact" investment for which return is secondary to achieving the impact itself. Similarly, efforts have been made to develop instruments permitting the valuation of natural capital and its integration (often alongside social and human capital) into new formulations of risk and return. However, while encouraging progress has been made at the intellectual level [25], it has had little impact in terms of overall capital flows.

And there are signs that dedicated nature markets may begin to emerge. The Finance for Biodiversity initiative (F4B) is launching a high-level Task Force on Nature Markets, and there is a movement to secure the recognition of nature as an asset class. For example, the Intrinsic Exchange Group has partnered with the US Securities and Exchange Commission to pioneer a new form of corporation known as the Nature Asset Company, the prime purpose of which is to manage natural resources and secure ecosystem services [26]. Many such market developments can be expected in the coming years as the whole basis for food systems comes under increased scrutiny.

Recent reports from the IPBES chronicle an accelerating rate of habitat destruction and species extinction. They also reveal a new class of risk relating to business models and supply chains that depend on the continuing availability of natural resources and ecosystem services. Reports like the Economics of Biodiversity [27] demonstrate the high percentage of economic activity that is dependent on nature and its continuing provision of services. Other reports cost the damage done to human populations and the economy of environmental pollution, the loss of insect pollinators, or natural elements on which our food supply depends [28]. The annual Global Risk Report from the World Economic Forum (WEF) has, for the past several years, reported that risks relating to biodiversity loss are in the top three risks for corporate and financial players [29]. The argument in favor of conservation is not only moral – it is economic.

The smart money sees all this coming and gets ahead. Financial centers should follow suit, in part not to be left behind but mostly to make environmental responsibility a competitive advantage. At the very least, financial centers need to assess both the opportunities and challenges brought about by recent evolutions in this space and ensure that an ability to take advantage of the former is built into their strategies as they push through the transition to sustainable forms of finance.

At the FC4S Annual General Meeting in October 2020 the secretariat proposed exploring the emerging topic of Biodiversity Finance with a view to adding it to the FC4S work programme. The reaction was mixed, with some members viewing the project as worthwhile while others felt it would stretch their capacity. As a compromise,

a working group was established with a mandate to review the topic and come back to the full membership with a report.

2. The AGM discussion, creation of the working group

At the FC4S Annual General Meeting in October 2020 the Secretariat proposed to explore the emerging topic of Biodiversity Finance with a view to adding it to the FC4s work programmes if it proved to attract members' interest. The reaction was mixed, with some members feeling such an exploration would be worthwhile but others felt it would stretch their capacity. As a compromise, a working group was established with a mandate to review the topic and come back to the full membership with a report.

The Working Group comprised representatives from the following FC4S members:

- **Finance for Tomorrow**
- **Liechtenstein Bankers Association**
- **Sustainable Finance Ireland**
- **The Spanish Centre for Responsible and Sustainable Finance**
- **Guernsey Green Finance**
- **Beijing Green Finance Association**
- **Hong Kong Green Finance Association**
- **Capital Markets Malaysia**

As Biodiversity Finance is a complex topic, with many facets and interlinkages, the selection of the topics to be explored was based on those aspects of the issue likely to be most relevant to the operations of financial centers and their competitive positions. The primary purpose of the Working Group stage was to test the relevance and urgency of the subject and, in the case that it was found to be important for financial centers, to bring back a proposal for full FC4S membership. This report suggests that this is very much the case, with the arguments in favor growing stronger.

3. Working Group mandate and discussions

A mapping exercise was conducted to identify members' needs and priorities regarding Biodiversity Finance. This exercise identified five facets of the issue and expert discussions were organized around each:

1. **Transparency and Disclosure with Nicky Chambers - Co-Chair of the Technical Expert Group of the TNFD, and Ladislas Smia, Head of Sustainability Research at Mirova**

2. **Data and Fintech with Marianne Haahr - Executive Director of the Green Digital Finance Alliance**

3. **Emerging Financial Instruments for Nature – the case of Nature Performance Bonds with Ashley Gorst - Engagement Manager at Vivid Economics**

4. **Norms – the case for a Nature-Positive standard with Robin Smale – Managing Partner and co-founder of Vivid Economics.**

1.Transparency and disclosure

The importance of disclosing key information related to biodiversity by financial institutions has been recognised in the creation of the Task Force on Nature-related Financial Disclosures (TNFD) in June 2021. TNFD is modeled on the earlier Task Force on Climate-related Financial Disclosures (TCFD) but differs in its intention to address not only risk-related disclosures (as was the case with TCFD) but also disclosures that enable a better understanding of the impact on nature of corporate and financial activity. TNFD comprises representatives from non-financial private sector companies, financial institutions, regulators, NGOs and governments – 30 professionals and 100 forum members [30]. Their goal is to provide a framework for organizations to report and act on evolving nature-related risks to support a shift in global financial flows towards nature-positive outcomes. It addresses one of the key obstacles to addressing nature-related risk – namely the lack of data and the non-comparability of the scarce data that is available. They have seen growing interest from policy makers as evident from the Economics of Biodiversity Report which underlines that policymakers and financial regulators increasingly demand that financial institutions systematically assess both nature-related financial risks and their impacts on nature and natural capital [31].

For example, the European Commission released an Action Plan on sustainable finance in 2018 which considers enhancing non-financial information disclosure. The legislative text on disclosure not only focuses on information about climate change but also aims to address other adverse impacts on natural capital.

The European taxonomy will structure data on four environmental objectives, one of which is biodiversity. Countries like France already require companies to disclose information on ESG factors through its Climate Law. In March 2021, the European Commission approved a new statistical framework to better account for biodiversity and ecosystems in national economic planning and policy decision-making [32]. As a next step, the Commission will propose a revision of the Regulation on European Environmental Economic Accounts to expand its coverage to include a new module on natural capital accounting, following which the EU could become the first jurisdiction reporting on changes in ecosystems and their services. While EU developments concern principally the 27 Member States, it is widely expected that this lead will set the standard for action in other jurisdictions.

Conclusions from this discussion

There is growing investor interest among financial centers to use TNFD to improve the assessment of the impact of investment portfolios on biodiversity. This is especially true in Europe. The main challenges facing financial centers in gearing up to apply TNFD disclosure standards lie both in generating a sufficient understanding of TNFD's work and the analysis and reasoning behind its outputs. Another challenge is the development of institutional and human capacity to implement TNFD standards and to address the data gaps that still render assessment of biodiversity risks and impacts difficult.

1. Greater engagements among stakeholders on TNFD

There is a need for greater understanding among stakeholders in financial centers on how to use disclosed data generated by emerging TNFD-generated standards to improve the competitiveness of their financial centers. Also, members agreed to increase engagement specifically on building data for TNFD. Nicky Chambers advised that accessing data will be much easier after the launch of new services to financial actors on biodiversity finance, such as the International Sustainability Standards Board [33] set to be launched in 2022.

2. Disclosure alone is not enough
Regardless of inadequate and sometimes inaccessible data on biodiversity, most institutions are aware of issues such as pollution and deforestation that are detrimental to biodiversity. Financial centers should leverage the TNFD framework to mitigate such activities that are harmful to biodiversity. See also the section below on data.

3. Increase Investment appetite on Nature and Biodiversity
Given the priority of FC4S members – especially in the Global South – to attract more investment that has a positive impact on nature, a systematic approach must be taken to putting in place the conditions that will favor such a development. This includes creating a favorable policy and regulatory environment but also examining the many tools and models available. The International Climate Finance Accelerator in Luxembourg [34] provides an interesting example in the climate space. In emerging economies, much of the negative impact of investment and development activity comes from agriculture and land conversion. It follows that increasing capacity to identify and develop investment opportunities in agriculture-related sectors is a priority.

2. Data

One of the biggest barriers to making biodiversity loss material to financial decision-making is the lack of sound data presented in a form that can be readily used by financial actors. Nonetheless, there are positive signs evident in the development of data tools on biodiversity and metrics such as the Biodiversity Footprint for Financial Institutions (BFFI) which measures the impact of financial institutions' activities on biodiversity. These tools have been used by regulators such as the Dutch Central Bank in urging financial institutions to identify the investment risks associated with biodiversity loss and propose measures to limit the banks' exposure to them [35]. In addition, other data tools used to guide businesses and financial institutions assessing their biodiversity footprint are being developed, such as the Global Biodiversity Score launched in 2020 by CDC Biodiversité in France [36]. The Score has provided businesses with options to reduce their biodiversity impacts and set quantitative targets to do so, and also helped financial institutions in assessing their risks [37].

Conclusions from this discussion

Both data and methodologies for stress-testing exposure to biodiversity risk are rapidly improving. However, there is a need for greater access through an open-access data platform that can fuel innovation and SDG scoring.

1. Financial centers can play an important role by being proactive in addressing data challenges
Key emphasis must be given to building the right data structures in each financial center on how to leverage data in order both to understand the risks related to loss of biodiversity and ecosystem services, and to quantify the impact of financial institutions on these.

2. Central banks and financial centres should work together to **develop specific regulations to promote open data on biodiversity finance.**

3. Technology

Technological developments are rapidly changing the ability of investors and other financial actors to improve the alignment of investments with the needs of a stable planet. Technology has revolutionized traceability, irrigation targeting, prediction of weather and other natural hazards, credit scoring, and other tools needed to design investments for a positive biodiversity outcome. Also important are technological developments, such as environmental DNA monitoring, that will move us towards solutions to the measurement and data problems that presently bedevil firm action by companies in lowering their nature footprint.

Digital financial technology, in particular, is revolutionizing financial decision-making specifically on biodiversity finance. The FC4S Network has worked closely with the Green Digital Finance Alliance whose work programme includes a special focus on this area. Financial centers could benefit from a comprehensive briefing on developments in biodiversity-related Fintech, along with the challenges and opportunities that lie in this new and rapidly developing field.

The report on Fintech for Biodiversity adds that Fintech is currently re-shaping strategies in other verticals for asset classes to reach capital markets. Biodiversity also is in urgent need of a digital reimagining of capital market instruments that can respond to the unique features of this asset class, including:

• Size: Most biodiversity assets currently find it difficult to scale beyond the USD $5million mark, a level too low to interest most investors.

• Spatial distribution: Many habitats cover large geographical areas that require proof-of-impact reporting to use spatially distributed data collection models.

Fintech has played a crucial role in informing consumers on the impact of their transactions on biodiversity. For example, Ant Financial in China uses the Alipay online purchase platform to track the climate footprint of individuals based on their purchases and offers incentives to reduce this footprint. The application now has over 500 million users – an extraordinary example of a private initiative in the climate space. Ant Forest is now extending this approach to individuals' nature footprint. E-commerce Fintech platforms and mobile wallets produce data on consumer behavior that offers real-time feedback on consumption choices in ways that make biodiversity impacts personalized, real-time and with the potential to generate network effects via gamification. This may not constitute a financing avenue but represents a way to leverage the data capabilities of Fintech to bring nature into people's everyday choices [39].

Conclusions from this discussion

1. Regulation and expectation:
Governments are struggling to provide relevant regulation, guidance and policy clarity on Fintech, in part because of the pace at which the field is developing, in particular around blockchain applications and cryptocurrencies. Sharing best practices will be essential to unlock the good that fintech can do while avoiding nefarious uses of the same technology.

2. Democratize access to earth observation data on biodiversity:
"Datasets that monitor an investment's biodiversity impact over time are available; however, they are costly and require geo-localisation of global value chain participants. Consequently, limited biodiversity data is incorporated into ESG ratings used in financial decision making" [40]. This inhibits financiers from making

financial decisions to lower the negative biodiversity footprint of their investment portfolio. Therefore, promoting access to satellite-generated earth observation data tied to specific activities of each link in a global value chain will enable biodiversity impact data to be factored into decisions about large capital allocations. The ENCORE tool [41] developed by UNEP Finance Initiatives is a good example of how public access data supports nature-friendly investment.

3. Promote Fintech platforms with innovative biodiversity solutions: Financial centers should work with regulators in incentivising the growth of digital E-commerce platforms such as Alipay Ant Forest which has played a critical role in mobilizing a mass movement towards the preservation of forests and biodiversity. In Europe, EcoTree [42] enables retail investors to invest in sustainable management of forests.

4. Nature Positive" [43] and Norms

The 2020 Future of Nature and Business Report by the World Economic Forum argues that addressing the nature crisis will require both policy and regulation from governments and shifts in habits and social norms from citizens. The report adds that a shift towards "nature positive" models in three key socio-economic systems – food, land, and ocean use, infrastructure and energy and extractives – will provide a win-win for nature, people, and business. This shift has the potential to unlock an estimated $10trillion of business opportunities by transforming the three economic systems that are responsible for almost 80% of nature loss [44]. Companies are rapidly filling this space – both those that help identify and manage nature- related risk and offer services in this area, and companies that have committed to addressing these risks themselves.

The gap in nature positive financial activity is unlikely to be filled simply by expecting investors to show more flexibility, or by the development of more robust projects. Some development of norms and regulations is likely to be required. These range from reducing and eliminating public subsidies that are harmful to nature, extending liability for biodiversity damage to the financial community, the recognition of the "legal personhood" of nature and new principles such as "No Net Loss" or, "Nature Positive", which measures the net impact on biodiversity of corporate or financial operations, including up and down the value chain. A move to the broad application of such a norm would set a new standard for the "license to operate" of financial and corporate actors.

Conclusions from this discussion

1. Differentiating biodiversity challenges from climate change:
Biodiversity finance initiatives are relatively new and much slower compared to climate change initiatives. A clear example of this difference is evident in the lack of a pricing mechanism similar to carbon pricing for natural capital, although of course adopting a material carbon price could offer several important benefits to biodiversity as well. This is of key concern given the urgency of action on the continued loss of biodiversity, habitat, marine fisheries, etc. In addition, there is no overarching goal with regards to the biodiversity challenge. There are, however, key partial goals such as preventing the extinction of species and protecting given percentages of landscapes and marine areas.

2. Characterizing the changes in biodiversity challenges:
The most promising development in this area is the emerging debate on a "Nature Positive" target – the equivalent for nature of the "Net Zero" carbon target in the climate space. Indeed, the two are increasingly being combined to articulate a growing social expectation – that financial and corporate activity will

increasingly be expected to be "Net Zero and Nature Positive". It is not difficult to imagine this expectation taking hold and increasingly being used as a screen for public acceptability – for example, governments making adherence to the standard a condition for participation in public procurement; or banks making it a condition for access to credit.

Current evidence shows that there is a lack of understanding of the financial risk associated with biodiversity loss. Both the Dutch and French Central Banks have taken the lead in exploring the paradox of low value given by financial institutions to nature-related risk given the scientific facts showing the augmenting risk from nature loss. [45] [46]

Further evidence shows that there is little foresight on how policies will mitigate these financial and transition risks. There is good indication that most policies would be around land use and fiscal instruments. This might increase land prices since the land will be scarcer given the reduced encroachment on biodiversity. This will most likely prompt greater efforts on high land productivity through irrigation and improvement of soil, urban and vertical farming, etc.

3. Actors driving nature positive principle:
Central banks have started to look at key problems impeding rapid uptake of nature-positive norms. Publications and researchers are exploring this issue despite the fact there has not yet been a strong mandate on this topic.

The recent move of the Development Finance Institutions (DFIs) to address their climate and nature impact is encouraging in this respect. The first "Finance in Common" summit in November 2020 convened over 450 DFIs [47] to begin work on aligning their USD $11trillion and their annual capital outlay of over USD$1trillion to the needs of sustainable development. The declaration adopted in Paris sets out the beginnings of an agenda for the DFIs , focused on climate but increasingly looking at biodiversity risk and impact as well. The second Finance in Common Summit in October 2021, and the G20 Leaders' Summit that followed in the same month began to open the door for a more structured approach to aligning the public development banks with the needs of nature, and especially with the post-2020 Global Biodiversity Framework to be adopted at the COP15 of the Convention on Biological diversity [48].

If successful, this could draw attention to the need not just for data, metrics, and methodologies, but also for an aspirational standard against which to measure progress. It appears likely that other large blocks of capital – such as sovereign wealth funds, universal owners and other institutional investors would not be far behind.

5. New Financial Instruments – the case of Nature Performance Bonds

For financial and capital markets to genuinely move on biodiversity-related activities, the array of financial instruments that facilitate this move will need rapid further development. "Debt for Nature" swaps have – after their heyday in the 1990s – seen a revival. Under such deals, the debt of poor countries can be reduced, or the debt service load alleviated in exchange for (usually public) investment in nature. Recent swaps – for example in the Seychelles or Belize – have focused on marine protected areas.

The Green Bond market, to take another example, has expanded dramatically over the past few years, multiplying by an order of magnitude since 2013 and nearly doubling again in 2020 alone. Though "use of proceeds" bonds are not a common source of funding for nature-related projects, the proportion is growing, and new instruments are emerging in this space. One interesting initiative is the development of a class of bonds known as KPI bonds, of which Nature Performance Bonds are an early pilot. Designed to alleviate extreme indebtedness of developing countries, they offer relief (e.g. in the form of a lowered interest rate,

risk perception, or cost of capital) to countries in exchange for specific monitored and verified performance on biodiversity conservation actions agreed in advance. They have the potential to move to scale over a short period of time. Financial centers need information on the range of initiatives in the debt finance area, and especially those targeting biodiversity. A good starting point is the OECD's recent review of different debt instruments for sustainable development [49].

Others like UNDP's Biofin programme have illustrated the range of financial tools available to fund nature-positive projects [50], and useful "how-to" guides to nature finance have recently been published – for example, the Global Canopy Project's "The Little Book on Investing in Nature" [51] and UNDP-Biofin's "Moving Mountains: unlocking private capital for biodiversity and ecosystems [52]."

The range of approaches of course goes well beyond specific financing vehicles to encompass the world of credit rating, debt sustainability assessment frameworks and finance sector assessment programmes such as those implemented by the International Monetary Fund.

The Paulson Institute report on closing the global biodiversity financial gap proposes revenue generation through new sources of funding such as Green Bonds, which would contribute USD$169billion to USD$416billion per year to Biodiversity Finance [53]. The recent decision by COP26 in Glasgow will rapidly expand markets for carbon offsets which could be both positive and negative for biodiversity.

Conclusions from this discussion

1. The importance of nature performance bonds:
Nature Performance Bonds are a significant instrument in closing the biodiversity funding gap thanks to the degree of flexibility they offer in allowing the issuer to finance their priorities while at the same time advancing the biodiversity priorities of the debtor countries. NPBs offer two other advantages: first, as the performance indicators need to be met before the debt-related advantage is generated, the element of trust on the part of the creditors is significantly increased. Moreover, the nature performance indicators are drawn from the debtor country's priorities, there is no danger of imposing nature conservation or restoration obligations on these countries that they have not prioritized as is too often the case with Debt for Nature swaps.

Second, only a fraction of the bond needs to be earmarked for the nature performance itself, leaving the rest to be deployed through the usual national budget process as development capital following the debtor country's priorities (e.g. health, education or housing).

Nature Performance Bonds are only one form of KPI bond. Other countries are issuing SDG bonds, climate bonds, and a variety of social bonds that address priorities in the field of social development. However, the interest in NPBs is palpable, has been picked up by both the World Bank and the International Monetary Fund, and is recognized by the European Union in its Sustainable Finance strategy as a promising instrument in the emergency of new financial instruments to address global challenges [54].

Nature Performance Bonds in particular represent a promising new approach to deploying capital in ways that benefit nature. The nature performance can – and likely will - be seen as a "development investment", an improvement in natural capital that can lower the perception of risk relating to the debtor country and, as such, both increase its attractiveness to investors and lower its cost of capital.

Conclusion

The FC4S Secretariat proposes to produce a simple guide for financial centres – and particularly those in the emerging markets - on new and innovative financial vehicles for nature finance and, if the level of interest is genuinely high enough, to organize capacity building events to promote and apply these.

4. Pathways forward

The FC4S will collaborate with the working group members, technical experts and sustainable finance networks involved in biodiversity solutions, to draw an Action Plan that will address the various needs pertaining to biodiversity finance.

FC4S proposes targeted action steps to address the following five facets of biodiversity finance challenges:

Transparency and disclosure	**• Development of a Guide on TNFD for financial centres, to enable them to follow the development of TNFD standards and to promote financial centres as knowledge hubs that can support financial institutions with disclosure and reporting on nature-related risks.** **• FC4S to take an active role in engaging leading stakeholders from the TNFD Technical Expert Group in the development of the technical guide on TNFD.**
Data	**• FC4S to work with Biodiversity Footprint Financial Institutions, Global Biodiversity score and other measurement tools, to provide financial centres with sufficient tools that can quantify the impact of their finance and investment activities on biodiversity.**
Fintech	**• FC4S to work with the Green Digital Finance Alliance in offering ways to make better use of earth observation data and in building digital tools and capabilities for financial centres to scale innovative funding solutions such as blockchain technology which comprises 55% of fintech for biodiversity solutions.**
Nature Positive and Norms	**• FC4S to identify suitable partner organizations that will engage with financial centres in building value proposition for nature positive and best practice models to promote collective action among private and public actors towards nature positive economy.**
New Financial Instruments	**• FC4S to work with other sustainable finance networks in launching knowledge platforms that can connect and educate issuers and investors with a mutual interest in nature and biodiversity performance.** **• FC4S to collaborate with Finance for biodiversity in building knowledge capabilities and suitable market infrastructure that can support the launch of new innovative financial instruments such as nature performance bonds.**

In implementing the Action Plan, FC4S will take three major action steps to address knowledge gaps and improve capabilities of the financial centres in all the 5 themes of biodiversity finance, including:

1. Implement capacity building workshop to address the knowledge gaps on biodiversity solutions:
FC4S will leverage partnerships with biodiversity experts and sustainable finance networks to build targeted capacity building workshops that address major challenges that face financial centres on all five facets of biodiversity finance.

2. Help develop Biodiversity Finance Roadmaps/Strategies:
FC4S will draw on financial centres' needs and leverage market intelligence from partners such as Finance for Biodiversity in building roadmaps that include best practice models used to accelerate the biodiversity finance agenda.

3. Global Partnerships and Cooperation:
FC4S will identify options for enhancing synergies and cooperation between financial centres and global biodiversity conventions, specifically on technical expertise and new innovative tools used in implementing biodiversity solutions.

5. Annex

A. Working Group

#	Name	Organization
1	Iain Henderson	Hong Kong Green Finance Association
2	Ursula Finsterwald	Liechtenstein Bankers Association
3	Simon Tribelhorn	Liechtenstein Bankers Association
4	Rupert Pleasant	Guernsey Green Finance
5	Stephanie Glover	Guernsey Green Finance
6	Paddy Molony	Sustainable Finance Ireland
7	Natacha Boric	Finance for Tomorrow, Paris
8	Marguerite Culot	Finance for Tomorrow, Paris
9	Zalina Shamsudin	Capital Markets Malaysia
10	Monica Malo	The Spanish Centre for Responsible and Sustainable Finance
11	Bai Yunwen	Beijing Green Finance Association
12	Ma Jun	Beijing Green Finance Association
13	Kelly Yu	FC4S Secretariat
14	Stephen Nolan	FC4S Secretariat
15	Mark Halle	FC4S Secretariat
16	Mahenau Agha	FC4S Secretariat
17	Prajwal Baral	UNDP
18	Kennedy Mmasi	FC4S Secretariat

B. Sources

Capitals Coalition. "Global Biodiversity Score: A Tool to Establish & Measure Corporate & Financial Commitments for Biodiversity." Capitals Coalition, May 20, 2019. https://capitalscoalition.org/global-biodiversity-score-a-tool-to-establish-measure-corporate-financial-commitments-for-biodiversity/.
Dasgupta, Partha. The Economics of Biodiversity: The Dasgupta Review: Full Report. Updated: 18 February 2021. London: HM Treasury, 2021.
"Declarations | Finance in Common." Accessed January 6, 2022. https://financeincommon.org/declarations.
Deutz et al. "Financing Nature: Closing the Global Biodiversity Financing Gap." Paulson Institute. Accessed

July 27, 2021. https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/.
EcoTree. "Plant Trees and Help Us Take on Climate Change." EcoTree, 2021. https://ecotree.green/en/.
ENCORE. "ENCORE." Exploring Natural Capital Opportunities, Risks and Exposure, n.d. https://encore.naturalcapital.finance/en.
"FiCs - Joint Declaration of Public Development Banks.Pdf." Accessed September 29, 2021. https://financeincommon.org/sites/default/files/2021-06/FiCs%20-%20Joint%20declaration%20of%20Public%20Development%20Banks.pdf.
Finance for Biodiversity Initiative. "Nature Performance Bonds - Frequently Asked Questions." Finance for Biodiversity Initiative, July 29, 2021. https://www.f4b-initiative.net/publications-1/nature-performance-bonds---frequently-asked-questions.
F4B Website. "Fintech for Biodiversity: A Global Landscape." Accessed July 27, 2021. https://www.f4b-initiative.net/publications-1/fintech-for-biodiversity%3A-a-global-landscape-.
"Fintech-for-Biodiversity-Final-30-32020-1.Pdf." Accessed September 21, 2021. https://www.sustainablefinance.ch/upload/rm/fintech-for-biodiversity-final-30-32020-1.pdf?_=1612260831000.
Global Canopy. The Little Book of Investing in Nature: A Simple Guide to Financing Life on Earth, 2021. https://globalcanopy.org/wp-content/uploads/2021/01/LBIN_2020_EN.pdf.
Green Digital Finance Alliance. "Fintech for Biodiversity A Global Landscape," 2020. https://www.f4b-initiative.net/publications-1/fintech-for-biodiversity%3A-a-global-landscape.
Green European Journal. "A Legal Revolution for the Rights of Nature." Green European Journal, March 11, 2020. https://www.greeneuropeanjournal.eu/a-legal-revolution-for-the-rights-of-nature/.
Greenfield, Patrick. "Plans to Mine Ecuador Forest Violate Rights of Nature, Court Rules." The Guardian, December 2, 2021, sec. Environment. https://www.theguardian.com/environment/2021/dec/02/plan-to-mine-in-ecuador-forest-violate-rights-of-nature-court-rules-aoe.
Harmony with Nature- United Nations. "Harmony With Nature," n.d. http://www.harmonywithnatureun.org/.
House of Commons Environmental Audit Committee. "Biodiversity in the UK: Bloom or Bust?," June 23, 2021. https://publications.parliament.uk/pa/cm5802/cmselect/cmenvaud/136/136-summary.html.
"IEG." Accessed January 6, 2022. https://www.intrinsicexchange.com/.
IFRS. "IFRS - Is There a Path to Global Sustainability Standards?," June 29, 2021. https://www.ifrs.org/news-and-events/news/2021/06/is-there-a-path-to-global-sustainability-standards/.
International Climate Finance Accelerator. "Who We Are." International Climate Finance Accelerator, 2018. https://www.icfa.lu/who-we-are/.
IUCN. "IUCN Global Standard for NbS." IUCN, July 14, 2020. https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs.
——. "Marseille Manifesto." IUCN World Conservation Congress 2020, September 10, 2021. https://www.iucncongress2020.org/programme/marseille-manifesto.
Ministerie van Landbouw, Natuur en Voedselkwaliteit. "Biodiversity Footprint for Financial Institutions: Exploring Biodiversity Assessment in 4 Cases - Report - Government.Nl." Rapport. Ministerie van Algemene Zaken, July 29, 2021. https://www.government.nl/documents/reports/2021/07/29/biodiversity-footprint-for-financial-institutions.
Mission Économie de la Biodiversité. "Introduction to the Global Biodiversity Score : a tool to assess the biodiversity footprint of businesses and financial assets (présentation en anglais) | Mission Économie de la Biodiversité," October 25, 2021. https://www.mission-economie-biodiversite.com/event/introduction-to-the-global-biodiversity-score-a-tool-to-assess-the-biodiversity-footprint-of-businesses-and-financial-assets-presentation-en-anglais-4.
"Moving Mountains – Unlocking Private Capital for Biodiversity and Ecosystems, BIOFIN – Blue Finance." Accessed January 6, 2022. http://blue-finance.org/?p=3078.
One Planet Summit. "Coalition for Convergence of Climate and Biodiversity Finance." One Planet Summit, October 26, 2021. https://www.oneplanetsummit.fr/en/coalitions-82/coalition-convergence-climate-and-

biodiversity-finance-191.
PBL. "Indebted to Nature. Exploring Biodiversity Risks for the Dutch Financial Sector." Text. PBL Netherlands Environmental Assessment Agency, June 19, 2020. https://www.pbl.nl/en/publications/indebted-to-nature.
Pörtner, Hans-Otto, Scholes, Robert J., Agard, John, Archer, Emma, Bai, Xuemei, Barnes, David, Burrows, Michael, et al. "IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change." Zenodo, June 24, 2021. https://doi.org/10.5281/ZENODO.4782538.
Sluijs, Jeroen P. van der, and Nora S. Vaage. "Pollinators and Global Food Security: The Need for Holistic Global Stewardship." Food Ethics 1, no. 1 (June 1, 2016): 75–91. https://doi.org/10.1007/s41055-016-0003-z.
"State of Finance for Nature | UNEP - UN Environment Programme." Accessed January 6, 2022. https://www.unep.org/resources/state-finance-nature.
Svartzman, Romain, Espagne Etienne, Julien Gauthey, and Hadji-Lazaro. "A 'Silent Spring' for the Financial System? Exploring Biodiversity-Related Financial Risks in France." Banque de France, August 27, 2021. https://publications.banque-france.fr/en/silent-spring-financial-system-exploring-biodiversity-related-financial-risks-france.
TNFD. "The TNFD Alliance." TNFD, 2021. https://tnfd.global/meet-the-tnfd-alliance/.
UNDP Sustainable Insurance Forum. "SIF SCOPING STUDY: NATURE-RELATED RISKS IN THE GLOBAL INSURANCE SECTOR," November 2021. https://www.sustainableinsuranceforum.org/view_pdf.php?pdf_file=wp-content/uploads/2021/11/UNDP-SIF-Scoping-Study_Nature-Related-Risks-in-the-Global-Insurance-Sector.pdf.
Unit, Biosafety. "Aichi Biodiversity Targets." Secretariat of the Convention on Biological Diversity, September 18, 2020. https://www.cbd.int/sp/targets/.
World Economic Forum. "New Nature Economy Report II: The Future Of Nature And Business." World Economic Forum, July 14, 2020. https://www.weforum.org/reports/new-nature-economy-report-ii-the-future-of-nature-and-business/.
——. The Global Risks Report 2021. 16th ed. World Economic Forum, 2021. https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf.

References

[1] Biodiversity Finance, Nature Finance, and Nature-related Finance are commonly used in the literature, and often interchangeably. In this text Biodiversity Finance is mostly used, but only because that is the name of the Task Force set up by FC4S. Where Nature Finance is used, it carries the same meaning and connotation.

[2] Pörtner, Hans-Otto et al., "IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change" (Zenodo, June 24, 2021), https://doi.org/10.5281/ZENODO.4782538.

[3] The IPBES identified the five direct drivers of biodiversity loss as changing use of sea and land, direct exploitation of organisms, climate change, pollution and invasive non-native species. The two indirect drivers are people's disconnect with nature and lack of value and importance of nature.

[4] Nature-based Solutions (NbS) are defined by IUCN as "actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".

[5] World Economic Forum, "New Nature Economy Report II: The Future Of Nature And Business," World Economic Forum, July 14, 2020, https://www.weforum.org/reports/new-nature-economy-report-ii-the-future-of-nature-and-business/.

[6] Finance for Biodiversity Initiative, "Nature Performance Bonds - Frequently Asked Questions," Finance for Biodiversity Initiative, July 29, 2021, https://www.f4b-initiative.net/publications-1/nature-performance-bonds---frequently-asked-questions.

[7] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, the equivalent for Biodiversity of IPCC in the climate science field.

[8] Biosafety Unit, "Aichi Biodiversity Targets" (Secretariat of the Convention on Biological Diversity, September 18, 2020), https://www.cbd.int/sp/targets/.

[9] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobinde la Puente, J. 2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

[10] Deutz, A et al,.2020. Financing Nature: Closing the global biodiversity financing gap. The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

[11] "State of Finance for Nature | UNEP - UN Environment Programme," accessed January 6, 2022, https://www.unep.org/resources/state-finance-nature.

[12] World Economic Forum, "New Nature Economy Report II," 14.

[13] World Economic Forum, 9.

[14] Pörtner, Hans-Otto et al., "IPBES-IPCC Co-Sponsored Workshop Report on Biodiversity and Climate Change."

[15] House of Commons Environmental Audit Committee, "Biodiversity in the UK: Bloom or Bust?," June 23, 2021, 6, https://publications.parliament.uk/pa/cm5802/cmselect/cmenvaud/136/136-summary.html.

[16] UCN, "IUCN Global Standard for NbS," IUCN, July 14, 2020, https://www.iucn.org/theme/nature-based-solutions/resources/iucn-global-standard-nbs.

[17] "Marseille Manifesto," IUCN World Conservation Congress 2020, September 10, 2021, https://www.iucncongress2020.org/programme/marseille-manifesto.

17 "Marseille Manifesto," IUCN World Conservation Congress 2020, September 10, 2021, https://www.iucncongress2020.org/programme/marseille-manifesto.

18 One Planet Summit, "Coalition for Convergence of Climate and Biodiversity Finance," One Planet Summit, October 26, 2021, https://www.oneplanetsummit.fr/en/coalitions-82/coalition-convergence-climate-and-biodiversity-finance-191. UN Environment Programme," accessed January 6, 2022, https://www.unep.org/resources/state-finance-nature.

19 One Planet Summit.

20 One Planet Summit.

21 IUCN, "IUCN Global Standard for NbS."

22 Green European Journal, "A Legal Revolution for the Rights of Nature," Green European Journal, March 11, 2020, https://www.greeneuropeanjournal.eu/a-legal-revolution-for-the-rights-of-nature/.

23 Patrick Greenfield, "Plans to Mine Ecuador Forest Violate Rights of Nature, Court Rules," The Guardian, December 2, 2021, sec. Environment, https://www.theguardian.com/environment/2021/dec/02/plan-to-mine-in-ecuador-forest-violate-rights-of-nature-court-rules-aoe.

24 Harmony with Nature- United Nations, "Harmony with Nature," n.d., http://www.harmonywithnatureun.org/.

25 Global Canopy, The Little Book of Investing in Nature: A Simple Guide to Financing Life on Earth, 2021, https://globalcanopy.org/wp-content/uploads/2021/01/LBIN_2020_EN.pdf.

26 "IEG," accessed January 6, 2022, https://www.intrinsicexchange.com/.
UN Environment Programme," accessed January 6, 2022, https://www.unep.org/resources/state-finance-nature.

27 Partha Dasgupta, The Economics of Biodiversity: The Dasgupta Review: Full Report, Updated: 18 February 2021 (London: HM Treasury, 2021).

28 Jeroen P. van der Sluijs and Nora S. Vaage, "Pollinators and Global Food Security: The Need for Holistic Global Stewardship," Food Ethics 1, no. 1 (June 1, 2016): 75–91, https://doi.org/10.1007/s41055-016-0003-z.

29 World Economic Forum, The Global Risks Report 2021, 16th ed. (World Economic Forum, 2021), https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2021.pdf.

30 TNFD, "The TNFD Alliance," TNFD, 2021, https://tnfd.global/meet-the-tnfd-alliance/.

31 Dasgupta, The Economics of Biodiversity.

32 UNDP Sustainable Insurance Forum, "SIF SCOPING STUDY: NATURE-RELATED RISKS IN THE GLOBAL INSURANCE SECTOR," November 2021, https://www.sustainableinsuranceforum.org/view_pdf.php?pdf_file=wp-content/uploads/2021/11/UNDP-SIF-Scoping-Study_Nature-Related-Risks-in-the-Global-Insurance-Sector.pdf.

33 IFRS, "IFRS - Is There a Path to Global Sustainability Standards?" June 29, 2021, https://www.ifrs.org/news-and-events/news/2021/06/is-there-a-path-to-global-sustainability-standards/.

34 International Climate Finance Accelerator, "Who We Are," International Climate Finance Accelerator, 2018, https://www.icfa.lu/who-we-are/.

35 Natuur en Voedselkwaliteit Ministerie van Landbouw, "Biodiversity Footprint for Financial Institutions: Exploring Biodiversity Assessment in 4 Cases - Report - Government.Nl," rapport (Ministerie van Algemene Zaken, July 29, 2021), https://www.government.nl/documents/reports/2021/07/29/biodiversity-footprint-for-financial-institutions.

36 Mission Économie de la Biodiversité, "Introduction to the Global Biodiversity Score: a tool to assess the biodiversity footprint of businesses and financial assets (présentation en anglais) | Mission Économie de la Biodiversité," October 25, 2021, https://www.mission-economie-biodiversite.com/event/introduction-to-the-global-biodiversity-score-a-tool-to-assess-the-biodiversity-footprint-of-businesses-and-financial-assets-presentation-en-anglais-4.

37 Capitals Coalition, "Global Biodiversity Score: A Tool to Establish & Measure Corporate & Financial Commitments for Biodiversity," Capitals Coalition, May 20, 2019, https://capitalscoalition.org/global-biodiversity-score-a-tool-to-establish-measure-corporate-financial-commitments-for-biodiversity/.

39 "Fintech for Biodiversity: A Global Landscape," F4B Website, accessed July 27, 2021, https://www.f4b-initiative.net/publications-1/fintech-for-biodiversity%3A-a-global-landscape.

40 Green Digital Finance Alliance, "Fintech for Biodiversity A Global Landscape," 2020, 21, https://www.f4b-initiative.net/publications-1/fintech-for-biodiversity%3A-a-global-landscape.

41 ENCORE, "ENCORE," Exploring Natural Capital Opportunities, Risks and Exposure, n.d., https://encore.naturalcapital.finance/en.

42 EcoTree, "Plant Trees and Help Us Take on Climate Change," EcoTree, 2021, https://ecotree.green/en/.

43 Nature Positive is becoming, for nature and biodiversity, the equivalent of Net Zero in the climate space. It insists that, in the course of development activity, the net impact of that activity on nature and ecosystems should be positive, in other words at least do no net harm and where possible include an element of environmental restoration.

44 World Economic Forum, "New Nature Economy Report II."

45 PBL, "Indebted to Nature. Exploring Biodiversity Risks for the Dutch Financial Sector," Text, PBL Netherlands Environmental Assessment Agency, June 19, 2020, https://www.pbl.nl/en/publications/indebted-to-nature.

46 Romain Svartzman et al., "A 'Silent Spring' for the Financial System? Exploring Biodiversity-Related Financial Risks in France," Banque de France, August 27, 2021, https://publications.banque-france.fr/en/silent-spring-financial-system-exploring-biodiversity-related-financial-risks-france.

47 "Declarations | Finance in Common," accessed January 6, 2022, https://financeincommon.org/declarations.

48 "FiCs - Joint Declaration of Public Development Banks.Pdf," 5, accessed September 29, 2021, https://financeincommon.org/sites/default/files/2021-06/FiCs%20-%20Joint%20declaration%20of%20Public%20Development%20Banks.pdf.

49 Dembele, F., R. Schwarz and P. Horrocks (2021), Scaling up Green, Social, Sustainability and Sustainability-linked Bond Issuances in Developing Countries, OECD Publishing, Paris.

50 "Moving Mountains – Unlocking Private Capital for Biodiversity and Ecosystems, BIOFIN – Blue Finance," accessed January 6, 2022, http://blue-finance.org/?p=3078.

51 Global Canopy, The Little Book of Investing in Nature: A Simple Guide to Financing Life on Earth, 2021, https://globalcanopy.org/wp-content/uploads/2021/01/LBIN_2020_EN.pdf

52 Moving Mountains – Unlocking Private Capital for Biodiversity and Ecosystems, BIOFIN – Blue Finance," accessed January 6, 2022, http://blue-finance.org/?p=3078

53 Deutz A. et al, "Financing Nature: Closing the Global Biodiversity Financing Gap," Paulson Institute, accessed July 27, 2021, https://www.paulsoninstitute.org/key-initiatives/financing-nature-report/.

54 "Fintech-for-Biodiversity-Final-30-32020-1. Pdf," 6, accessed September 21, 2021, https://www.sustainablefinance.ch/upload/rm/fintech-for-biodiversity-final-30-32020-1.pdf?_=1612260831000.

FC4S
FINANCIAL CENTRES FOR SUSTAINABILITY

Hosted by

UNDP

Development grant provided by

Sustainable Finance Ireland