Rijksdienst voor Ondernemend Nederland

Mapping Dutch Financial Flows to Biodiversity

June 2021

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June 2, 2021

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1.0 Introduction

The Netherlands Enterprise Agency (RVO, Implementing Agency of the Netherlands Government) is interested in mapping private financial flows to biodiversity from Dutch financial institutions. This is part of a larger program of the Ministry of Agriculture, Nature and Food Quality on Greening Finance.

To build insight into Dutch financial flows to biodiversity and develop a set of recommendations on how to improve this tracking, RVO engaged advisory firm Climate Risk Services.

The Convention on Biological Diversity (CBD) and Organisation for Economic Co-Operation and Development (OECD) systematically collect data on public and private financial flows, including how much private capital is mobilised from public sources such as grant funding and concessional loans.

According to the OECD, estimating private finance is particularly challenging, because private actors do not typically monitor and report their biodiversity expenditure. According to The Nature Conservancy and the Paulson Institute, the current biodiversity financing gap is between USD 598 billion and USD 824 billion per year[1]. Public funding alone cannot bridge this gap.

The CBD therefore emphasises in its resource mobilisation strategy the necessity to mobilise funding from the private sector in addition to public sector funding. Having a well-functioning system to track and map biodiversity spending lays the foundation for ambitious resource mobilisation strategies for public and private funding alike.

This report adds to the tracking biodiversity expenditure discussion by:

- Estimating the amount of finance currently supplied by the Dutch financial institutions to fund biodiversity;
- Compare the different methodologies to estimate biodiversity financing, both of public and private sector financing;
- Develop policy recommendations on reporting standards.

Currently, global funding to biodiversity is supplied by public sources by almost 10:1[2]. According to the OECD, private expenditure on biodiversity is USD 6.6 - 13.6 billion per year.

Biodiversity is emerging as a serious financial issue and there are many signs that financial institutions are reaching a tipping point. New voluntary pledges, improvements in measuring biodiversity impact, and emerging opportunities for biodiversity financing all contribute to a shifting paradigm for biodiversity financing. Furthermore, new mandatory reporting requirements and a new EU standard to define sustainable economic activities aim to provide a new level of transparency in the future.

Various organisations have developed methodologies to map financial flows to biodiversity, including the OECD and the CBD Secretariat who largely track public financial flows. In addition, the Nature Conservancy and Paulson Institute recently published a report estimating the biodiversity financing gap, which includes a baseline estimate of current public and private expenditures. Furthermore, the

[1] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobin-de 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.

[2] According to the OECD, public domestic expenditure is USD 67.8 billion per year; international public expenditure is USD 3.9 - 9.3 billion per year; and private expenditure on biodiversity is USD 6.6 - 13.6 billion per year. Source: A Comprehensive Overview of Global Biodiversity Finance, April 2020: https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf

Natural Capital Finance Alliance and Finance for Biodiversity are active in integrating biodiversity into financial decision-making.

This report offers a review of which methods currently exist to map private spending on biodiversity, what their shortcomings are, and provide recommendations on how to improve these methods. Incorporating these recommendations, it seeks to provide a mapping of Dutch private financial flows to biodiversity.

2.0 The Business Case for Investing in Biodiversity

The Global Assessment of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), published in 2019, shows that a large proportion of original biodiversity has been lost in many places worldwide. This directly impacts the economy. The World Economic Forum (WEF) estimates that USD 44 trillion of global GDP—around half—is highly or moderately dependent on nature[3]. This suggests that continuing decline of our biodiversity is a threat to the stability of the financial system.

In June 2020, the Dutch Central Bank, in cooperation with the PBL Netherlands Environmental Assessment Agency, published a report outlining the exposure of Dutch banks, insurance companies and pension funds have to companies that have a high or very high dependence on one or more ecosystem services. One example of such a service is the pollination of food crops — when certain insects disappear, this may cause problems in agriculture. The report estimates that these financial firms have around EUR 510 billion outstanding at companies that depend on ecosystem services[4].

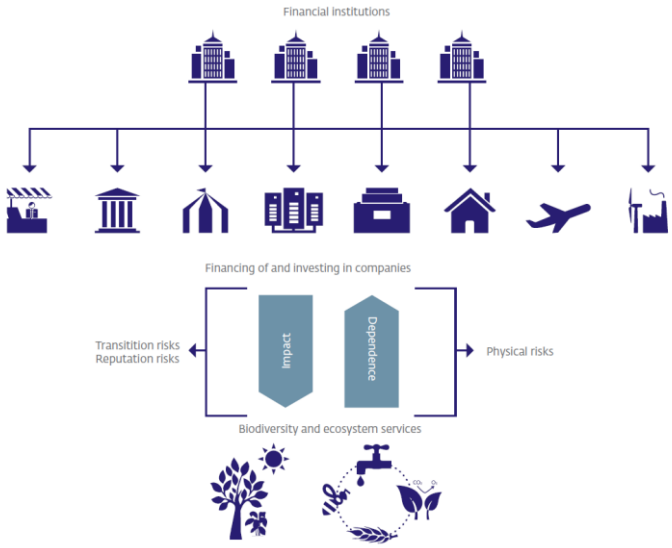


Figure 1: Relationship between financial sector, economy, biodiversity and ecosystem services. (Source: Dutch Central Bank)

If these ecosystem services collapse, the financial viability and business continuity of the companies that depend on them may be at risk. Companies (and households) depend on produced capital (roads, buildings and factories) and human capital (health, knowledge and skills). These are all priced based by the market through matching supply and demand. Natural capital (or ecosystems services)

[3] https://www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report/

[4] Indebted to nature: Exploring biodiversity risks for the Dutch financial sector, DNB/PBL, June 2020.

are also an important input into the economic model; yet, most of these ecosystem services are provided for free. As a result, the demand on such ecosystem services far exceed nature's capacity to supply them.

The relatively modest amount of biodiversity financing by Dutch financial institutions does not mean that biodiversity is not a significant issue for the financial sector in the Netherlands. For example, ASN Bank has dedicated biodiversity specialists, Rabobank supports multiple biodiversity related initiatives, the Dutch Central Bank sponsors a working group on biodiversity under the umbrella of its Sustainable Finance Platform, Dutch financial institutions all have biodiversity-related policies, about thirteen Dutch institutions signed the Finance for Biodiversity Pledge, and several have started to measure their impact on biodiversity through the Partnership Biodiversity Accounting Financials (PBAF).

PBAF, which was initiated by ASN Bank, focuses on impact measurement of investments with a positive effect on biodiversity. Other Dutch financial institutions that are involved are ACTIAM, FMO, Robeco and Triple Jump. PBAF has been inspired by the Partnership Carbon Accounting Financials (PCAF), a partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments. The PCAF initiative was launched at the Paris Climate Summit in 2015, also under the leadership of ASN Bank.

The Finance for Biodiversity Pledge now has 37 signatories representing almost EUR 5 trillion in Assets Under Management (AUM) [5]. This signals an increased awareness amongst the financial institutions: they emphasize the need to protect biodiversity and to reverse nature loss in this decade, ahead of the Conference of the Parties (COP 15) to the Convention on Biological Diversity (CBD) in October 2021. Dutch signatories include ABN AMRO, Rabobank, Triodos, ASN Bank, Achmea, Actiam, Aegon, ASR Nederland, de Volksbank, NN Investment Partners, NWB Bank, Robeco, and Triple Jump.

Furthermore, preparatory work to set up a Taskforce on Nature-related Financial Disclosures (TNFD) started in 2020. The TNFD is being catalysed through an Informal Working Group (IWG) comprising 74 financial institutions, regulators, and corporates. The members of the IWG have assets under management of over USD 8 trillion. The IWG is co-ordinated by the founding TNFD Partners – Global Canopy, the United Nations Development Programme (UNDP), the United Nations Environment Programme Finance Initiative (UNEP FI), and the World Wide Fund for Nature (WWF). The TNFD is modelled after the Task Force on Climate-related Financial Disclosures (TCFD), which has become the foundation for voluntary disclosures by individual companies as well as new disclosure regulations by regulators across the world; however, the TNFD intends to go beyond risk disclosures and will also look at impacts and dependencies.

Another notable initiative in the Netherlands is the Delta Plan Biodiversity, launched in November 2018. The aim of the Delta Plan is to improve cooperation between farmers, public authorities, the retail sector, banks and other parties with a goal to achieve a better balance between nature, agriculture and urban development.

Internationally, there are several important developments that signal a change in mindset towards biodiversity. Building on the successful One Planet Summit (OPS), which was launched in December 2017 by French President Macron, UN Secretary General António Guterres, and World Bank President Jim Yong Kim to accelerate the implementation of the Paris agreement, an OPS for

[5] https://www.financeforbiodiversity.org/

Biodiversity was held in January 2021. Key announcements from the Summit included the UK and French governments agreeing to earmark 30% of their overseas public climate funding for nature-based solutions, and the Paris Collaborative on Green Budgeting (PCGB). The PCGB, which was launched by France, Mexico and the OECD Secretary General, aims to design new, innovative tools to assess and drive improvements in the alignment of national expenditure and revenue processes with climate and other environmental goals.

Another initiative originating from France is the Finance in Common Summit. This Summit stresses the crucial role of Public Development Banks (PDBs) in leveraging financial flows in the direction of climate and the SDGs. There are approximately 450 PDBs around the world, operating at sub-national, national, regional, international and multilateral levels. Together they invest USD 2 trillion annually – or 10 percent of the total amount invested in the world every year by all public and private sources combined.

In May 2020, the European Commission adopted the new EU Biodiversity Strategy for 2030; a comprehensive, ambitious, long-term plan for protecting nature and reversing the degradation of ecosystems. In the Netherlands, the government has announced that it is working to improve biodiversity and halve its ecological footprint by 2050, as part of its "Strengthening Biodiversity" programme.

3.0 Tracking Biodiversity-Related Expenditures

Tracking biodiversity-related expenditures is essential to ensure that spending can be related to policy and investment outcomes. Yet, the current systems to track public and private expenditures, as well as private expenditures mobilised with public funding, are imperfect and data gaps and inconsistencies persist.

The OECD report "A Comprehensive Overview of Global Biodiversity Finance" from April 2020 observes that, although most countries reporting to the CBD indicate what their biodiversity expenditure includes (e.g. central and local government budgets/private/other; direct and indirect flows), only a few countries report on how biodiversity finance is allocated between ocean/marine and terrestrial biodiversity.

Furthermore, there is a considerable risk of double counting, for example when adding national and sub-national government expenditures, adding domestic public expenditure to international public expenditure, or adding grants from governments to NGOs[6]. The OECD has proposed several key recommendations to improve the assessment, tracking and reporting of biodiversity finance flows, *inter alia*, improve the consistency and transparency of the data reported to the CBD; develop and agree on an internationally harmonised approach for assessing and tracking public biodiversity finance, building on existing frameworks and classification systems; and establish a common framework to assess and track private finance for biodiversity.

According to The Nature Conservancy and the Paulson Institute[7], the gap between the amount currently spent on biodiversity conservation and what is needed is large. As of 2019, current spending on biodiversity conservation is between USD 124 and USD 143 billion per year, against a

[6] A Comprehensive Overview of Global Biodiversity Finance, OECD, April 2020

[7] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobin-de 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.

total estimated biodiversity protection need of between USD 722 and USD 967 billion per year. This leaves a current biodiversity financing gap of between USD 598 billion and USD 824 billion per year.

Tracking private sector financing is, however, particularly challenging, owing to the lack of common definitions, an absence of reporting frameworks and obligations and the challenges associated with identifying the biodiversity component of private transactions.

Importantly, companies and financial institutions will have to start reporting on their "green economic activities" under the EU Taxonomy Regulation and associated disclosure regulation. The EU Taxonomy is a framework according to which financial market participants and companies will assess whether certain economic activities are "sustainable", through contributing to six objectives including 'protection and restoration of biodiversity and ecosystems'. Technical screening criteria for biodiversity-related contribution through economic activities are expected by the end of 2021.

3.1 Current Methodologies to Track Biodiversity Expenditures: Strengths and Weaknesses

Tracking biodiversity expenditures lays the foundation for a successful resource mobilisation strategy. Resource mobilisation has traditionally focused on identifying public sources of biodiversity funding; however, given the estimated size of the biodiversity funding gap, the need for scaling up the private sector contribution is now more recognized.

Tracking biodiversity expenditures takes place across several dimensions, including public domestic expenditure, public international finance, and private finance. These include:

- Domestic public expenditure is tracked through the CBD financial reporting framework, Classifications of the Functions of Government (COFOG), and through biodiversity expenditure reviews conducted through UNDP's Biodiversity Finance Initiative (BIOFIN). Furthermore, the Classification of Environmental Protection Activities (CEPA) and the Classification of Resource Management Activities (CReMA) provide a basis for regularly and consistently assessing biodiversity expenditure.
- International public expenditure is reported to OECD's Creditor Reporting System (CRS). It makes the distinction between "principal" and "significant" objectives in the Rio Marker methodology (see box on Rio Markers).
- Data on the amounts of development finance mobilised by Development Assistance Committee (DAC) countries are also collected by the OECD through the regular CRS data collection. It compiles data for private finance mobilised with the following financial instruments: syndicated loans, guarantees, shares in collective investment vehicles, direct investment in companies/project finance special purpose vehicles and credit lines.
- Data on private biodiversity expenditures is not systematically tracked. There is no requirement for private actors to monitor and report their biodiversity expenditure. Although the CBD financial reporting framework allows for the reporting of private biodiversity expenditures, The Netherlands did not report it in the latest reporting cycle[8].

[8] https://chm.cbd.int/search/reporting-map?filter=resourceMobilisation. The Netherlands does include biodiversity expenditures by NGOs, foundations, and academia in its total.

Box 1. Rio Markers

Since 1998, the OECD Development Assistance Committee (DAC) has monitored development finance flows targeting the objectives of the Rio Conventions on biodiversity, climate change and desertification through the CRS using the so-called "Rio markers". The Rio marker system allows for a simplified earmarking of public spending on biodiversity. If biodiversity is not targeted, then zero spending earmarked; if biodiversity is a significant objective, then 40% of spending is earmarked; or biodiversity is the principal objective, then 100% is earmarked.

Convention on Biological Diversity (CBD) Financial Reporting Framework

The CBD financial reporting framework provides a template for countries to indicate whether the reported expenditure is directly or indirectly related to biodiversity, and what type of flows they include (e.g. government and private). In general, little guidance is provided on how to estimate and report domestic expenditure. This includes a lack of clear definitions of the criteria or typology for applying the Rio markers. Although the CBD reporting template facilitates comprehensiveness, the OECD notes that the comprehensiveness of countries' finance reports to the CBD appears to vary considerably[9].

Classification of Functions of the Government (COFOG)

COFOG is a classification system developed in 1999 by the OECD as a standard for classifying the purposes (functions) of government activities. Under COFOG, governments code a series of activities under one of ten divisions. One of these is Environmental Protection (Division 5). Group 5.4 relates to 'Protection of Biodiversity and Landscape'. This group covers activities relating to the protection of fauna and flora species (including the reintroduction of extinct species and the recovery of species menaced by extinction), the protection of habitats (including the management of natural parks and reserves) and the protection of landscapes for their aesthetic values (including the reshaping of damaged landscapes for the purpose of strengthening their aesthetic value and the rehabilitation of abandoned mines and quarry sites).

Occasionally, the expenses for the protection of biodiversity and the landscape are recorded in the same budget program as spending on agriculture (Division 4); and waste-water management expenses are in the same program as water supply (Division 6)[10].

UNDP's Biodiversity Finance Initiative (BIOFIN)

The overarching objective of BIOFIN is to deliver a new methodological framework, facilitating the identification, development and implementation of optimal and evidence-based finance plans and implementation of finance solutions for biodiversity. This methodological framework is described in a BIOFIN Workbook, the second version of which was launched at the CBD COP 14 in November 2018[11].

The Workbook includes a Biodiversity Expenditure Review (BER), which supports development of a biodiversity budget coding protocol and tagging system, which may result in greater or more

[9] A Comprehensive Overview of Global Biodiversity Finance, April 2020: https://www.oecd.org/environment/resources/biodiversity/report-a-comprehensive-overview-of-global-biodiversity-finance.pdf

[10] https://ec.europa.eu/eurostat/documents/3859598/5901713/KS-RA-07-022-EN.PDF/42751ae2-aa62-4ed3-ba90-a92ad7d8c6d0?version=1.0

[11] https://www.biodiversityfinance.org/knowledge-product/biofin-2018-workbook

effective budget allocations. Besides the public sector, it considers expenditures by a wide range of actors, including the private sector, donors, and civil society actors.

According to the Workbook, the definition of "biodiversity expenditure" is any expenditure whose purpose is to have a positive impact or to reduce or eliminate pressures on biodiversity. These biodiversity expenditures include primary expenditures that have biodiversity as their "primary purpose" as well as "secondary" expenditures where biodiversity is clearly identified as an objective. This formulation is derived from the definition provided by the CBD.

The BER also notes that collecting comprehensive data on private sector biodiversity expenditures is difficult and that it may be severely constrained by lack of data. It suggests that the data collection process should be seen primarily as an opportunity for engagement. The Workbook describes a successful case study in Guatemala where data was collected through workshops and questionnaires.

Another helpful element of the Workbook is the classification of biodiversity-related expenditures: Biodiversity awareness and knowledge; Green economy; Pollution management; Sustainable use; Biosafety; Protected areas and other conservation measures; Restoration; Access and Benefit Sharing (ABS); Biodiversity and development planning and finance.

OECD Creditor Reporting System (CRS)

The objective of the CRS Aid Activity database is to provide a set of readily available basic data that enables analysis on where aid goes, what purposes it serves and what policies it aims to implement, on a comparable basis for all DAC members. It shows, for example, that The Netherlands spent EUR 40 million on 30 biodiversity projects in the global South in 2018. Information is provided on individual projects and programmes. The CRS currently includes data on finance flows reported by over thirty philanthropic foundations, including the Bill and Melinda Gates Foundation and the Postcode Lottery. This data is collected and published at the level of individual grants and investments, and screened annually by the OECD Secretariat using the Rio Marker methodology.

Conclusion

The current systems to track national and international biodiversity expenditures are helpful to create some level of transparency, but could benefit from a more harmonized approach. In most systems only aggregate data is published and it is difficult to establish whether each organisation applies the same criteria. They also lack harmonization of a classification system of activities that would meet the criteria of biodiversity expenditures. Nevertheless, there are some helpful elements that can provide guidance to develop a more consistent system to track private sector biodiversity expenditures. For example, despite the lack of harmonization, the list of activities that quality as biodiversity expenditures is helpful. Also, the BIOFIN BER offers excellent guidance on the data collection process.

3.2 Analogous Methodologies: Strengths and Weaknesses

In addition to tracking biodiversity financing by official mechanisms such as the OECD, CBD, and BIOFIN, the Nature Conservancy and Paulson Institute's report "Financing Nature: Closing the Global Biodiversity Financing Gap" contains a methodology to estimate private biodiversity expenditures.

The Nature Conservancy/Paulson report and the OECD report specifically mentions the OECD's Research Collaborative on Tracking Finance for Climate Action as an example for learning on how to track private biodiversity expenditures.

The Nature Conservancy/Paulson Institute – Financing Nature

The Nature Conservancy/Paulson report estimates the current biodiversity expenditures as a starting point to measure the financing gap: it estimates current biodiversity expenditures of USD 124–143 billion per year. This is broadly consistent with the OECD's estimate of global biodiversity finance at USD 78–91 billion per year based on available 2015–2017 data.

Figure 2 shows the different sources of biodiversity finance as documented by the Nature Conservancy. Although the numbers do not match the OECD's estimates, the categories are overall comparable and they provide a starting point to estimate the biodiversity expenditures of the Dutch financial sector (see Figure 2).

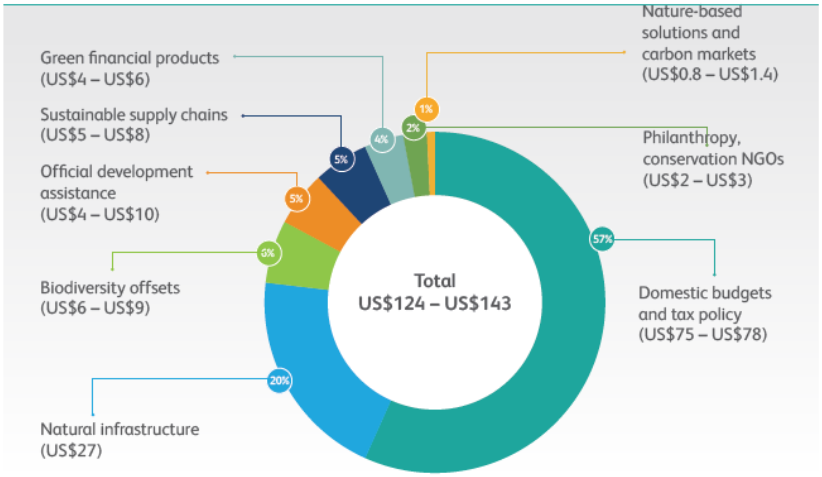


Figure 2: Sources of Biodiversity Financing (Source: Nature Conservancy[12])

OECD		TNC	
Biodiversity Offsets	2.6 - 7.3b	6.0 - 9.0b	Biodiversity Offsets
Sustainable commodities	2.3 - 2.6b	5.0 - 8.0b	Sustainable supply chains
PES (private sector only*)	15.4m	27b	Natural Infrastructure
Water quality trading	32m	-	N/A
Carbon markets	30m	0.8 - 1.4b	NBS and carbon markets
Moblised funding	87m	4.0 - 6.0b	Green Financial Products

* Public subsidies for watershed protection is estimated at 23.7b

** All values in USD

Table 1: Comparison of OECD and TNC Estimates on Biodiversity Expenditures

The Nature Conservancy appears to apply a more narrow definition of private funding for biodiversity expenditures: it only classifies sustainable supply chains and green financial products, including private equity impact investing, as being funded by the private sector (see Table 1).

Furthermore, the Nature Conservancy/Paulson report developed a methodology to calculate the biodiversity component of these mechanisms. For example, it estimates that 1% of sustainable forestry products is used to finance biodiversity-related conservation measures. The underlying assumptions are based on, or consistent with, the OECD methodologies.

[12] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobin-de 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.

OECD Research Collaborative on Tracking Finance for Climate Action

The aim of the Research Collaborative is to facilitate the sharing of best-available data, expertise and information to advance policy-relevant research to address country- and international-level information needs. Despite progress, it is acknowledged that there are significant data gaps, methodological and knowledge gaps, and that available information is still scattered.

In 2013 the OECD Research Collaborative on Tracking Finance for Climate Action (the Research Collaborative) started a work stream to assess potential data sources for tracking overall volumes of climate-related private finance. In 2018, this work stream was broadened to investigate options for tracking investments and financing in the context of aligning with the Paris Agreement.

Organisations that tracks climate expenditures include the International Energy Agency (IEA) and the Climate Policy Initiative (CPI). The IEA applies a pragmatic approach to collecting data. For example, in the case of upstream oil and gas investment, global spending estimates are based on the announced spending of over 75 leading oil and gas companies. In the case of investments in the power sector, the IEA analyses annual capacity additions and unit investment costs, derived in part from surveys with industry and a range of data providers. Thus, this methodology represents an approximation of real-world practice.

CPI captures total primary financial transactions and investment costs or, where tracked, components of activities that directly contribute to adaptation and/or mitigation[13]. Data for private sector climate projects is obtained from a variety of sources, including the OECD; IEA; Bloomberg New Energy Finance (BNEF); IJGlobal (Project Finance & Infrastructure Journal); and the REN21. Following the data scoping exercise, datasets are cleaned and processed. It is important to note that these figures represent financial commitments rather than disbursements.

Conclusion

The Nature Conservancy/Paulson report provides additional insights into the private sector contribution of global biodiversity financing. The estimate is based on a set of assumptions such as the share of biodiversity financing of total Green Bonds issued and what percentage of sustainable forestry products is used to finance biodiversity-related conservation measures. Furthermore, the OECD Research Collaborative on Tracking Finance for Climate Action relies on secondary sources including industry publications. No methodology systematically collects biodiversity financing data directly from companies or financial institutions. Companies and financial institutions do not have to publish such data; however, new EU regulation is about to change this.

3.3 Emerging EU Regulation

To address the issue of adequate classification of economic activities and reporting on these by both companies and banks and investors that finance them, new EU regulation is emerging that will provide guidance. These new regulations include the EU Taxonomy, the Non-Financial Reporting Directive (NFRD), and the Sustainable Finance Disclosure Regulation (SFDR).

The EU Taxonomy sets out an EU-wide framework according to which investors and businesses can assess whether certain economic activities are “sustainable”. There are six environmental objectives: climate change mitigation; climate change adaptation; water; circular economy; pollution control; and biodiversity and ecosystems. The Regulation was published in the Official Journal of the

[13] Global Landscape of Climate Finance 2019 - Methodology

European Union on 22 June 2020 and came into force on 12 July 2020. However, it will not start being applied into practice until 1 January 2022 at the earliest.

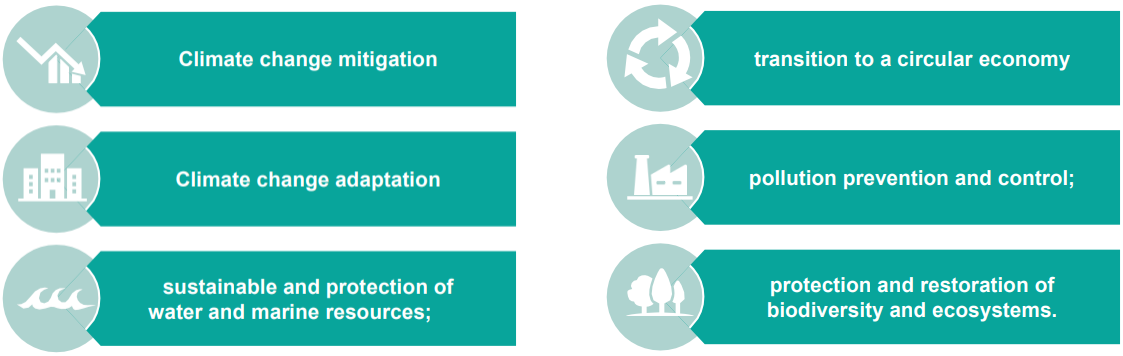


Figure 3: Six objectives of the EU Taxonomy (Source: EU Technical Expert Group on Sustainable Finance[14])

Currently, Technical Screening Criteria that determine whether an economic activity is 'sustainable' have only been adopted for the first two objectives: climate change mitigation and climate change adaptation. It is very prescriptive. For example, cars emitting less than 50gCO2/km qualify as "sustainable", but only until the end 2025. From January 2026, all cars sold in Europe will need to emit zero grams of CO2 per kilometre in order to be considered "sustainable".

The Technical Screening Criteria for the remaining four environmental objectives (water, circular economy, pollution control and biodiversity) will be adopted by 31 December 2021 so that the taxonomy can start to apply to those objectives from 1 January 2023.

There are three tests that an economic activity must satisfy to be "environmentally sustainable" under the taxonomy. The activity must:

- contribute substantially to at least one of the environmental objectives;
- "do no significant harm" to any of the other environmental objectives;
- be carried out in compliance with minimum social and governance safeguards.

The EU Taxonomy recognises three different types of environmentally sustainable economic activities:

- Activities that in and of themselves contribute substantially to one of the six environmental objectives;
- Enabling activities: activities that enable other activities to make a substantial contribution to one or more of the objectives;
- Transition activities: activities for which there are no technologically and economically feasible low-carbon alternatives, but that support the transition to a climate-neutral economy and are performing at best-in-class levels compared to peers.

[14] Taxonomy: Final Report of the Technical Expert Group on Sustainable Finance. EU Technical Expert Group on Sustainable Finance. March 2020. https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf

For climate mitigation, these three different types are relatively straightforward. Investments in solar or wind energy make a direct contribution to emission reduction targets. Enabling activities support the transition to low carbon activities, such as the construction of an electricity network or energy storage. Transition activities help products and services with high CO2 emissions shift to low carbon ones. Through a strict transition path, emissions in sectors such as steel, cement, and aluminium are slowly reduced.

It is less straightforward with biodiversity. There is very little economic activity of which the primary objective is to preserve or enhance biodiversity. In that sense, biodiversity is different from climate mitigation. There we can classify investments in renewable energy as an 'activity that in and of themselves contributes to reducing carbon emissions'.

But economic activities that benefit biodiversity are often indirect and could perhaps classify as 'enabling'. Thus, if a company develops a sustainable and scalable organic alternative for neonicotinoid chemicals, and this will save bee populations, then this economic activity indirectly benefits biodiversity.

For example, switching from animal-based meat to plant-based 'meat' enables a reduction of deforestation, which indirectly benefits biodiversity. Can an investor in a company that produces plant-based 'meat' claim its investment as being "green" under the EU Taxonomy? Robeco owns 1.2% of Beyond Meat[15], which represent approximately USD 100 million. If the Technical Screening Criteria for biodiversity would classify this type of economic as green, then Robeco could claim this amount as biodiversity finance.

Importantly, the EU Taxonomy is supported by disclosure regulations[16]. The Non-Financial Reporting Directive (NFRD) requires large EU "public interest" corporates (including many financial services firms) to publish data on the impact their activities have on ESG factors.

Specifically, the EU Taxonomy requires entities subject to the NFRD to disclose in their non-financial statements "information on how and to what extent their activities are associated with environmentally sustainable economic activities under Articles 3 and 9 of the [Taxonomy Regulation]" including:

- The proportion of their turnover derived from products or services associated with economic activities that qualify as environmentally sustainable;
- The proportion of their capital expenditure and the proportion of their operating expenditure related to assets or processes associated with economic activities that qualify as environmentally sustainable.

Closely related to the EU Taxonomy and the NFRD is the Sustainable Finance Disclosure Regulation (SFDR). The SFDR to increase transparency on investment funds that claim certain sustainability benefits. Companies that offer such funds will be required to classify all their investment funds into three categories of sustainability level – grey, light green and dark green – and to adjust their documentation, marketing material and reporting to reflect this. This standardised product labelling will give investors a better insight into how sustainable their investments are.

[15] As of 30 September 2020.

[16] The Sustainable Finance Disclosure Regulation (SFDR) requires investment firms to disclose: information on how, and to what extent, the investments that underlie their financial product support economic activities that meet the four tests for environmental sustainability under the Taxonomy Regulation. They are in effect rules on how investment firms can market their sustainable financial products.

Conclusion

The EU Taxonomy, NFRD, and the SFDR intend to create a harmonized understanding of what actually constitutes sustainable activities across the EU. When fully implemented, anyone should be able to obtain information about biodiversity spending by accessing a financial institutions' website or reading its annual report.

Yet, challenges exist and implementing these new regulations will take several years. First of all, the Technical Screening Criteria for biodiversity have not been established yet. Secondly, financial institutions will depend on data provided by their clients. Thus, both financial institutions and companies will have to develop new data reporting structures. In the absence of automated reporting, there is significant scope for errors if much of the data is collected manually. The first round of Taxonomy reporting will be in 2022 (on climate mitigation and adaptation expenditures). It is expected that there will be a high degree of estimation as financial institutions will need to work companies who report their Taxonomy alignment for the first time.

3.4 Classifying Biodiversity Expenditures

In the absence of an official methodology to estimate biodiversity financing provided by financial institutions, it is necessary to look at alternatives. The Nature Conservancy/Paulson and OECD methodologies provide basic building blocks to derive an estimate. Both methodologies use a similar classification of private sector instruments, such as biodiversity offsets, and for several instruments rely on the same surveys. For example, to estimate the amount of biodiversity financing resulting from FSC-certified forest investments, both rely on an survey from Breukink et al.

Potential sources of biodiversity expenditures based on the OECD and Nature Conservancy/Paulson reports include:

- Biodiversity Offsets
- Sustainable commodities/sustainable supply chains
- Natural infrastructure
- Carbon markets/Nature Based Solutions
- Green Financial Products

Although these sources of private biodiversity expenditures are comprehensive, it potentially excludes other sources of financing. For example, landscape level investments is not included specifically. Also, investments related to the blue economy are limited to the sustainable certified seafood market. According to the OECD, the contribution of the ocean economy to global value added has been estimated conservatively in the order of USD 1.5 trillion annually, or roughly 3 percent of global value added[17]. In addition to sustainable fisheries, aquaculture, nature-based tourism sectors, and coastal carbon sequestration (blue carbon) could be included.

To be consistent with the OECD and Nature Conservancy/Paulson reports, we follow their classification system, accepting that some underreporting is inevitable. The Nature Conservancy/Paulson report includes a technical annex which describes in detail the formulas used in calculating private biodiversity spending.

[17] OECD (2016); The Ocean Economy in 2030. OECD, Paris

In general, this report would have benefitted from national level data on metrics such as percentage of green bonds, sustainability linked loans, or forestry investments spent on biodiversity-related conservation measures. In researching for this report, it has become clear that this is not possible. Financial institutions simply do not publish this kind of data, and third-party data vendors do not provide such information either. This lack of reliable data extends to the location that would benefit from the biodiversity-related investments or lending.

Biodiversity Offsets

In the Netherlands, biodiversity offsets (habitatbanking) gained some traction in 2017-2018. A methodology was developed to calculate the amount of offsets needed to compensate biodiversity loss (the natuurpuntensysteem). But a market for biodiversity offsets never fully materialised in the Netherlands. This may change in the future, but for now this report assumes that there is no private biodiversity expenditures associated with biodiversity offsets in the Netherlands[18].

Sustainable Commodities/Sustainable Supply Chains

The Nature Conservancy/Paulson report disaggregates global sustainable supply chains into four subsectors of sustainable commodities markets: (1) sustainable forestry products, (2) sustainable agricultural products, (3) sustainable fisheries and seafood products, and (4) sustainable palm oil. They calculate the biodiversity components of these different markets is based on the following assumptions:

(1) 1% of sustainable forestry products is used to finance biodiversity-related conservation measures

(2) Between 1% (lower estimate) and 1.5% (upper estimate) of sustainable commodities is used to finance biodiversity-related conservation measures

(3) Between 1% (lower estimate) and 1.5% (upper estimate) of the sustainable palm oil market were used to finance biodiversity-related conservation measures

(4) Between 1% (lower estimate) and 1.5% (upper estimate) of the sustainable certified seafood market was used to finance biodiversity-related conservation measures

The Nature Conservancy/Paulson report estimates aggregate private sector biodiversity financing, including by companies. However, the goal of this report is the amount of financing provided by (Dutch) financial institutions.

For example, what can financial institutions claim as biodiversity financing resulting from Sustainable Palm Oil? WWF's Palm Oil Scorecard tracks total amount of palm oil used by large corporates, including 8 companies domiciled in the Netherlands[19].

These Dutch companies collectively purchase more than 1.3 million tonnes of palm oil. Of this total, approximately 900.000 tonnes is RSPO certified. It is estimated that certified palm oil trades at a premium of USD 30 to non-certified palm oil[20]. According to the Nature Conservancy/Paulson methodology, between 1% (lower estimate) and 1.5% (upper estimate) of the sustainable palm oil market is used to finance biodiversity-related conservation measures.

[18] Even if there was a system of biodiversity offsets, a discussion would be helpful to determine what the net-effect would be of reducing biodiversity in one place, only te create, restore, or protect it elsewhere. It would be logical that only a net gain in biodiversity should be included in biodiversity expenditure.

[19] http://palmoilscorecard.panda.org/check-the-scores/all

[20] Thus, a company such as Unilever that uses approximately 700.000 tonnes of RSPO certified palm oil per year spends an additional USD 21 million

At a current[21] (December 2020) market price of USD 847/tonne for palm oil and adding the USD 30 premium for RSPO certification, the 8 Dutch companies spend approximately USD 800 million on sustainable palm oil. Following from this, the companies spend between USD 8 million (1%) and USD 12 million (1,5%) on palm oil related conservation measures.

Thus, although we can state that based on these calculations Dutch private sector financing of palm oil related biodiversity is between USD 8.0 – 12.0 million, we cannot determine the share from Dutch financial institutions. The EU Taxonomy and the NFDR will provide guidance on this topic (see Chapter 3.3); however, implementation of these regulations has not yet materialised.

Natural Infrastructure

Natural infrastructure projects provide ecosystem services for human populations, which produce similar outcomes to implemented grey infrastructure. Natural infrastructure relevant to coastal resilience includes the conservation and restoration of dunes, mangroves, coral reefs, oyster reefs, saltmarshes, and sea grasses. These projects often take the form of public-private partnerships where the government pays a fee based on certain performance indicators. If these performance indicators are not met, then the government is not obliged to pay. Therefore the risk lies with the implementing consortium and the investors.

Biodiversity is rarely the principle aim of the investment. To estimate the biodiversity component of natural infrastructure investments we can rely on the Rio Marker[22] approach. There is potential for double counting between public and public-private funding sources if the payment by the government is added to the prior investment by the consortium.

Carbon Markets/Nature Based Solutions

Agriculture, forestry, and other land use activities make up nearly one fourth (23%) of all anthropogenic emissions worldwide, but they store carbon as well[23]. Such activities are referred to as natural climate solutions (NCS). The pathway for financing NCS to date has generally been through carbon pricing mechanisms.

Green Financial Products

The estimates for green financial products or green debt, aggregates financial flows estimates of green bonds, green loans, sustainability linked loans, landscape loan facilities, and environmental impact bonds. The OECD calculates the biodiversity components of these different markets based on the following assumptions:

(1) Between 0.5% (lower estimate) and 1.0% (upper estimate) of green bonds is used to finance biodiversity-related conservation measures

(2) Between 0.3% (lower estimate) and 0.5% (upper estimate) of sustainability linked loans is used to finance biodiversity-related conservation measures

For landscape loan facilities, we can analyse the private sector contribution of initiatives such as the Sustainable Trade Initiative (IDH). Environmental Impact Bonds are similar to Social Impact Bonds where a public sector entity pays-for-performance. There are no Environmental Impact Bonds yet in the Netherlands.

[21] https://www.indexmundi.com/commodities/?commodity=palm-oil&months=60

[22] Activities targeting biodiversity as a principal objective, a significant objective, or not at all.

[23] https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_chapter11.pdf

For Green Bonds, we are interested in the amount *invested* by Dutch financial institutions, not the amount issued. For example, the NWB Bank (De Nederlandse Waterschapsbank) has issued more than EUR billion in Green Bonds (sometimes called Blue Bonds). Yet, all the major investors in these bonds are international investors. Thus, Green Bonds *issued* by the NWB Bank do not count towards private sector financing by Dutch financial institutions.

Private Equity Impact Investing

Dutch financial institutions may be investing in biodiversity related investment vehicles, such as the EcoBusinessFund of Finance-in-Motion and Mirova Natural Capital (formerly Althelia). These investments are seeking a financial return while at the same time improving natural capital.

Box 2. EcoBusinessFund

The EcoBusinessFund aims to promote business and consumption practices that contribute to biodiversity conservation, the sustainable use of natural resources, and to mitigate climate change and adapt to its impacts. The Fund's current size is USD 424 million. The fund has attracted private sector investors, including one Dutch bank that invested USD 25. The fund has a blended finance structure with several governments and DFIs providing risk capital. Although the Fund has yet to book any significant loss on individual investments, investors in the most senior tranche enjoy a solid risk cushion of at least 70%.

4.0 Estimating Biodiversity Expenditures by Dutch Financial Institutions

The data collection process to estimate biodiversity expenditures by Dutch financial institutions incorporated several approaches. The following efforts have been made to collate relevant data:

- Analyse annual reports and websites of the financial institutions
- Develop a questionnaire which was sent to 15 financial institutions (see ANNEX III)
- Consult Bloomberg and Refinitiv (Thomson Reuters) databases
- Consult database from Climate Bonds Initiative
- Approach 40 biodiversity-related Private Equity funds on whether they have Dutch investors

Data collection focussed on the top-10 asset owners (including pension funds and insurers) and the top-5 banks (ING, Rabobank, ABN AMRO, Volksbank, and Triodos).

To encourage financial institutions to respond to the questionnaire, data is reported as aggregate numbers and not company-level data. The information is aggregated to reflect the different sub-sectors: banks, pension funds, and insurers. This approach is consistent with the report "Indebted to Nature" by the Dutch Central Bank and the PBL Netherlands Environmental Assessment Agency.

Based on the methodology outlined and the data collected through this work, it is estimated that Dutch financial institutions directed between **EUR 302 – 536 million** in private financing to biodiversity in 2020.

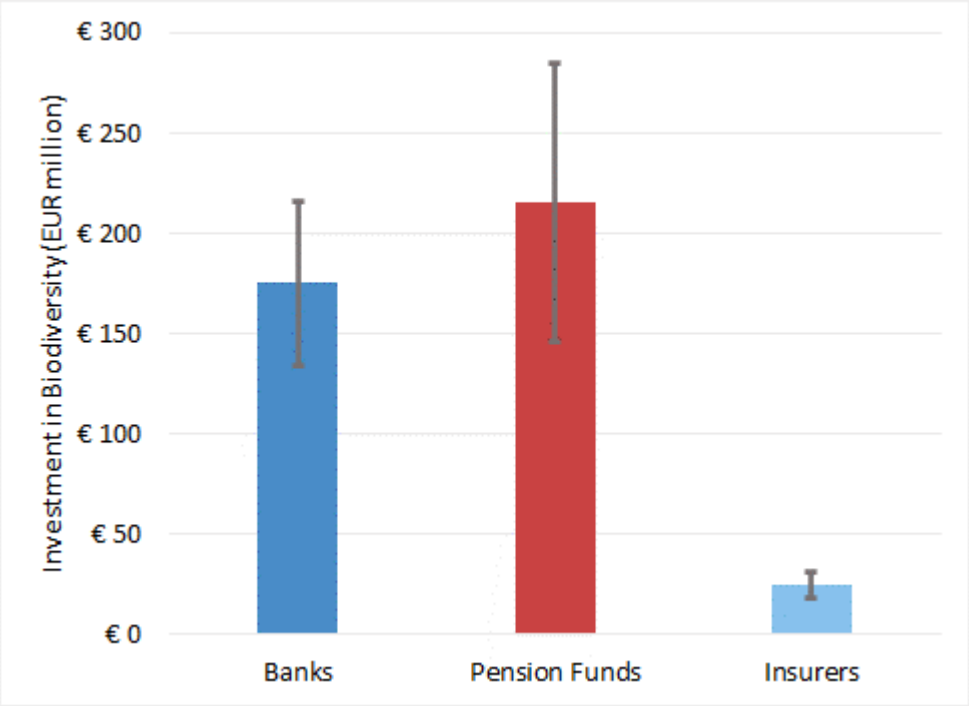


Figure 4: Private Financing to Biodiversity by Dutch Financial Institutions

From this data, it is clear that Green Bonds offer the largest source of biodiversity financing by Dutch financial institutions with EUR 155 – 310 million. There is a methodological caveat here. In total, Dutch investors currently hold approximately EUR 31 billion in Green Bonds[24]. Very few of these Green Bonds, however, report the share of proceeds spent on conservation measures. Therefore, the default share of between 0.5 – 1.0% of the total amount was applied. In the absence of more accurate reporting on the share of biodiversity financing, it is not possible to assess whether this is an under- or overestimate.

Box 3. Klabin, Green Bonds

One example of how Green Bonds can be used for biodiversity is Klabin, a Brazilian paper & pulp company. It owns 218 thousand hectares of planted forests and 183 thousand hectares of preserved native woodlands in Brazil. It has issued 3 Green Bonds totalling USD 1.2 billion. Its first Green Bond, totalling USD 500 million with a 10-year maturity, was issued in September 2017. Its Green Bond reports lists USD 1.2 million in expenditures thus far on native forest restoration and conservation of biodiversity. Since 2015, the company has spent approximately USD 12 million on these activities.

The second source of biodiversity financing is more straightforward: in total, Dutch financial institutions invest EUR 68 – 88 million in biodiversity-related private equity funds. These funds are dedicated to investing in projects that benefit nature and biodiversity. For example, one bank has invested EUR 25 million in the EcoBusinessFund by Finance-in-Motion, an impact investor (as described in Textbox 2). All funding is dedicated to improving biodiversity. Yet, investment in such funds is miniscule compared to total Assets Under Management.

A third source of biodiversity financing is Sustainability-Linked Loans (SLLs). For a loan to be regarded as sustainability-linked, a borrower's performance is to be measured against pre-agreed Sustainability Performance Targets (SPTs). These targets are specific to each financing and may

[24] A total of EUR 12 billion was issued by Dutch companies in 2020, including by NWB Bank, Schiphol, TenneT, and Volksbank.

include external ratings or key performance indicators (KPIs). Global green and ESG-linked loans total USD 200 billion in 2020, according to Refinitiv. Rabobank, for example, provided a USD 25 million to Agrocorp International, a global supply chain company specialized in various agricultural commodities such as pulses, wheat, rice, oilseeds, sugar, and edible nuts that is headquartered in Singapore (FMO provided another USD 25 million). The company will be working with a consultancy firm, Earth Systems, to set and monitor sustainability targets and reporting requirements. Yet, banks do not systematically report the euro value of the Sustainability-Linked Loans they provide. For example, ING Bank is a significant player in this market: in Q4 2019 alone ING supported 13 Sustainability-Linked Loans. Yet, ING does not report the value of these loans.

The other potential sources of biodiversity expenditure appear to be less relevant to Dutch financial institutions. Although biodiversity offsets have gained some traction in the international context, the attempts to develop a Dutch system of offsets has yielded little result thus far. Therefore no Dutch institutions are involved in this. Some institutions have invested in sustainable forestry: one pension fund has invested EUR 300 million in sustainable forestry, mainly in the United States. Applying the 1% of market size to biodiversity provides a EUR 3.0 million contribution towards biodiversity.

Conclusion

The majority of the estimate of EUR 302 – 536 million in private biodiversity financing is based on the assumption that a share of the Green Bonds is spent on biodiversity. There is uncertainty how the 'use of proceeds' actually benefits biodiversity. A Green Bond impact report should account for the expected annual environmental impact realised through projects financed with the Green Bond and should reflect the share of the total investment cost. This is not complied consistently by issuers. Furthermore, data providers such as Bloomberg and Refinitiv do not provide information on the total Green Bond holdings of investors such as APG or PGGM.

There are transparency and reporting challenges with Sustainability Linked Loans as well. Unlike Green Bonds, there is no reporting requirement on how well a recipient of a Sustainability Linked Loan the loan is performing against the agreed targets. Furthermore, banks do not report the euro value exposure.

There is more certainty with biodiversity-related private equity funds as these funds are dedicated to providing capital to biodiversity. In the future, new regulation such as the Sustainable Finance Disclosure Regulation will provide more clarity on the exact biodiversity component of such funds.

5.0 Conclusions and recommendations to improve mapping and tracking biodiversity finance

This report shows that the total amount of biodiversity financing of EUR 302 – 536 million is modest compared to institutions' dependency on natural capital and biodiversity (estimated at EUR 510 billion by the Dutch Central Bank[25]); it is less than 0.1%. It provides a snapshot and exploration of the current level of biodiversity financing by Dutch financial institutions. It should not be read as black-and-white.

Analysing the total expenditures by Dutch financial institutions faces significant challenges given that currently no reporting methodologies for financial institutions exists, they are not (yet) required to report on it, and no common definition exists of what can be included.

[25] Indebted to nature: Exploring biodiversity risks for the Dutch financial sector, DNB/PBL, June 2020

Emerging regulations such as the EU Taxonomy and the NFRD will contribute to the development of a common data collection and reporting methodology. In theory, once these regulations are fully implemented it will be possible to extract the required information from institutions' websites or annual reports. Yet, it will take time before the EU Taxonomy and the NFRD will provide comparable data. Even once the Technical Screening Criteria for biodiversity have been developed and accepted by financial institutions, they will need to collect this data from their clients. This will require new data collection processes, IT system updates, and it will be resource intensive.

This report contributes to the discussion by offering a 'second-best' approach in the absence of a well-regulated and functioning data reporting system. Furthermore, it suggest that relatively small efforts already can improve transparency. For example, this report identifies Green Bonds as a major source for biodiversity financing; however, the reporting on biodiversity financing is inconclusive. A step towards more transparency would be to improve reporting on the use-of-proceeds of Green Bonds.

Biodiversity is only slowly becoming a financial issue; it remains an elusive topic for most financial institutions. To understand a company's impact and dependencies on biodiversity presents a unique set of challenges that go beyond the straightforward financial metrics that financial institutions are comfortable with. The Taskforce on Nature-related Financial Disclosures (TNFD), the Partnership for Biodiversity Accounting Financials (PBAF), the Finance for Biodiversity Pledge, and the Dutch Central Bank's report on biodiversity, all are progressing towards solving these seemingly intractable challenges.

The regulatory environment is changing quickly. Financial institutions are currently focusing on climate risk. The European Central Bank (ECB) published a guide on climate-related and environmental risks in November 2020. The guide explains how the ECB expects banks to prudently manage and transparently disclose such risks. It is expected that biodiversity risk (and opportunity) will follow quickly and will receive the same level of attention in the near future.

Similar to climate risk, which was considered immaterial to the financial sector only a few years ago, biodiversity is working towards becoming top-of-mind for finance executives. To define biodiversity and natural capital as an 'investable asset class' is a final step in this process, but requires a change in thinking and application of appropriate time horizons. This report shows that methodological and conceptual challenges exist, but there is hope that emerging regulation and new investment opportunities will move biodiversity into the mainstream of international finance.

With the following recommendations this process could be accelerated:

Recommendation 1: Strict implementation of the EU Taxonomy

The EU Taxonomy and associated reporting and disclosure regulations will provide much needed clarity on the classification of sustainable economic activities, including biodiversity, and how financial institutions should report on them. Respondents to the questionnaire also agree that the EU Taxonomy will be crucial in this process.

This is important because banks and investors want to be seen as 'doing good', but they will only claim those benefits that will not potentially subject them to accusations of 'greenwashing'. The lack of available data, no standards, no common definitions, room for double counting, and lack of metrics all make biodiversity currently a no-win challenge for most banks and investors.

But challenges do exist. Some financial market participants observe that companies do not yet report relevant non-financial data showing whether they make a substantial contribution and/or cause significant damage; that internal processes and KPIs are yet set up for the Taxonomy; and that evaluating the 'Do No Significant Harm' criteria can prove difficult.

Nevertheless, there is no alternative. The voluntary reporting thus far shows that it is a major challenge to collect comparable data, both from companies and the financial institutions that invest or lend to them.

This report proposes to accept CBD reporting guidance, which states that "Funding for biodiversity includes not only funding for direct actions to protect biodiversity but also funding related to actions across different sectors (e.g. agriculture, forestry, tourism) to promote biodiversity friendly initiatives that have other primary purposes." A generous set of Technical Screening Criteria could mobilise significant capital that ultimately will benefit our planet.

Recommendation 2: Learn from climate risk

Already the biodiversity community is looking at successful initiatives that have propelled climate risk to the top of the agenda. The Taskforce on Nature-related Financial Disclosures builds on the Taskforce on Climate-related Financial Disclosures, while the Partnership for Biodiversity Accounting Financials is modelled after the Partnership for Carbon Accounting Financials, and according to EC President Ursula Von Der Leyen, "COP15 for nature must be like the COP 21 was for climate. And we need a Paris style agreement to go with it: ambitious, global and game changing."

But that is only part of the story. The renewable energy revolution started with governments providing the right incentives such as feed-in-tariffs (Germany) and renewable portfolio standards (United States). This created the framework needed for entrepreneurs to scale up their investments. Following the "Indebted to Nature" report by the Dutch Central Bank and the PBL Netherlands Environmental Assessment Agency, governments should instruct their regulatory bodies to expand their work on climate risk and focus on biodiversity risk as a source of instability for the financial system. With such a large part of the global economy dependent on natural capital and ecosystem services, the economic case is clear.

One reason why climate change is now top-of-mind is because there is much more attention in the news, trade magazines, politicians and business leaders talking about it. We need immediate examples when evaluating a specific topic. For example, we often struggle to imagine the true impacts of climate change because we have never experienced them before. The same applies to biodiversity. Communication of the impact of the biodiversity crisis will allow us to overcome our 'availability bias', where people use simplifying strategies to solve problems.

Recommendation 3: Align taxonomy of public and private biodiversity spending

Currently, the classification of biodiversity financing of official reporting systems are not fully aligned. Domestic public expenditure is tracked through the CBD financial reporting framework, Classifications of the Functions of Government (COFOG), and through biodiversity expenditure reviews conducted through UNDP's Biodiversity Finance Initiative (BIOFIN). International public expenditure is reported to OECD's Creditor Reporting System (CRS).

Furthermore, the Nature Conservancy/Paulson Institute report included certain private sector biodiversity related expenditures (palm oil, sustainable fisheries) while excluding others (nature-based tourism and coastal carbon sequestration).

The EU Taxonomy has been developed to solve the question what economic activities can be considered sustainable. Reporting on these economic activities will be mandatory for companies under the NFDR. The Technical Screening Criteria for biodiversity are now being developed by the European Commission, expecting finalisation by the end of 2021. As with the Technical Screening Criteria for climate mitigation and adaptation, these criteria will likely be very prescriptive.

Overall biodiversity expenditure reporting, both public and private, and national and international, would benefit from greater alignment. There is a risk that if there is no alignment, that certain private sector expenditures would not be considered "sustainable" while those same activities is included in public expenditures (or vice versa); or, the potential for double counting.

Alignment would also more easily facilitate mobilising finance. While governments would still have to prioritise one activity over another, at least there is certainty that all efforts go towards benefitting biodiversity.

It would also be beneficial for the Technical Screening Criteria for biodiversity to take into consideration that most private sector expenditure does not invest in biodiversity directly, but rather invest in activities that benefit biodiversity indirectly. It is more likely that the primary objective of public financing is biodiversity itself, for example by setting up protected areas, etc.

The BIOFIN Workbook's Biodiversity Expenditure Review (BER) has made an excellent start. Not only does the Workbook have a broad definition of "biodiversity expenditure" (any expenditure whose purpose is to have a positive impact or to reduce or eliminate pressures on biodiversity), it also contains a classification of biodiversity-related expenditures.

For companies under the NFRD, reporting on biodiversity related expenditures (and the other five environmental objectives of the EU) will become mandatory. Therefore, reporting public biodiversity spending in alignment with the emerging classification system for companies would create the basis for a comprehensive and unified system of reporting.

6.0 Epilogue

On the 22nd of April a Round Table was organized by the Netherlands Enterprise Agency and Climate Risk Services to collect feedback on the study with participants from all kind of relevant organizations (see Annex IV for list of participants). The outcomes of the Round Table are summarized in this epilogue.

Outcomes Round Table

Moderator: Caroline van Leenders
Presentation by: Gerhard Mulder

General remarks

- The focus of this study is on positive financial flows to biodiversity; however, subsidies that harm biodiversity dwarf this positive contribution. This is also confirmed by the OECD. We need to better understand the level of harmful subsidies, how do they impact biodiversity, and how financial institutions are indirectly benefiting from these subsidies France is one of

the first countries looking at both the positive and negative investment flows on nature. It is a next step after the study '' Indebted to Nature'' of the Central Bank of The Netherlands and PBL Netherlands Environmental Assessment Agency which looked at the exposure of the Dutch financial sector to financial risks associated with biodiversity loss[26].

- Overall, the participants welcomed a study on positive financial flows for biodiversity on the national level.
- The participants also agreed that obtaining accurate information is a major challenge in the absence of official reporting requirements, but that the use of surveys is a good start to collect data.

On definitions and scope

- One question centered around whether less negative impact on biodiversity count as positive? For example, plant-based meat does not contribute to more biodiversity, but rather reduces the impact from animal-based meat.
- The definition of biodiversity positive flows is still underdeveloped. The same applies to public spending accounting, this is still a challenge.
- What will a biodiversity broad definition mean for the EU Taxonomy? Will the investments of Robeco in Beyond Meat count as green finance under the EU Taxonomy? See report on Positive impacts in the Biodiversity Footprint Financial Institutions[27].
- The EU Taxonomy should embrace a broader definition related to impact, risk and dependencies.

On method and data

- In the Financing Nature report a percentage of funds raised in green bonds markets was set to go to biodiversity. It was an informed guess. It is a rapidly emerging market. Would be good to replace the assumption in a study on national level with real-time data. This will make it more realistic and you will get better numbers. Which third party data sources that we can use for the specification of assumptions and proxies?
- It would be interesting to have more detailed data in the report, where the investments are located (where is the money going to/ is there a gap/ do we need extra money in certain areas?). Not easy to get actual data; how to know who is investing in which Green Bonds?
- One possible way to add more depth to the analysis is to at biodiversity efficiency/intensity of investments. It is relevant to get absolute dollar figures, but we should also focus on the impact on biodiversity per expenditure. The Partnership for Biodiversity Accounting Financials (PBAF) does research on assessing impact of investments, at portfolio level (negative and positive). Biodiversity intensity/ efficiency: closely linked with ASN Bank, impact per euro invested with ASN Bank. Interesting biodiversity finance, its tracking and how to get most impact per euro. Also for the role of finance institutions and blending instruments.
- Also learned by PBAF where you need to rely on background data because of limited availability of data. Over the years the data question will be solved. Now deal with the limited available data.
- BIOFIN reviewed biodiversity expenditures public and private in 35 countries based on public data collected from the ministries of finance and surveys for the expenditure review of the private sector. CSR is an important category where some data is available. Reporting is for example mandatory in India.

[26] Indebted to nature: Exploring biodiversity risks for the Dutch financial sector, DNB/PBL, June 2020.

[27] https://www.government.nl/documents/reports/2019/09/25/report-positive-impacts-in-the-biodiversity-footprint-financial-institutions

On the transition role of public development banks

- Some public development banks are accountable to their impacts, have strong biodiversity and finance teams and are data rich. They should align their finance with biodiversity goals and identify their positive biodiversity flows to lead the financial sector. Public development bank should stress test their expenditures on nature.
- Development banks should develop more positive biodiversity impacts with blending instruments. Blended finance is now only a specific niche and blending standards for biodiversity are needed. To achieve this goal, collaboration between develop banks en impact investors, private institutions should be encouraged.
- The board of AFD will develop a stress test: a risks approach like the test on climate related financial risks. This risk approach will be 3 tiers and assess specific exposure to financial risks by biodiversity degradation 1) of clients; 2) on country level, and 3) for 110 counties.

Reports shared

- OECD iLibrary | Evaluating the effectiveness of policy instruments for biodiversity: Impact evaluation, cost-effectiveness analysis and other approaches: https://www.oecd-ilibrary.org/environment/evaluating-the-effectiveness-of-policy-instruments-for-biodiversity_ff87fd8d-en.

- A study on SF and biodiversity by BMU and Frankfurt School of Economics is coming.

Caroline van Leenders:

- Impact analysis of specific parts of the portfolio of several financial institutions by the Netherlands Enterprise Agency and CREM is coming.

ANNEX I Linking mapping and tracking of biodiversity expenditures with resource mobilisation

Having a well-functioning system to track and map biodiversity spending lays the foundation for ambitious resource mobilisation strategies for public and private funding alike. In particular, by aligning the classification of economic activities that contribute to biodiversity is important. If there is no agreement on what activities should be included, then this could lead to misalignment of policy measures and investment decisions.

For example, if governments include regenerative agriculture as contributing to biodiversity, but this is not included in the Technical Screening Criteria under the EU Taxonomy, then governments may provide incentives for this economic activity, but the private sector would be less interested given that would not be considered 'sustainable' under the EU Taxonomy.

While this can be considered a technical challenge (how hard would be it to align these criteria?), there is more to the problem.

To mobilise capital at scale for biodiversity, both the public and the private sector need to work towards a new paradigm. Each of these sectors then must reinvent itself. This is difficult, as change also means loss. It can be perceived as dangerous. A banker will be laughed at when talking about biodiversity; the environmentalist will cringe with the idea of having to work with companies that are responsible for the problem to begin with; and the civil servant will not be rewarded for thinking outside the box and going beyond seeing the role of government as an arbiter of a free market but rather as the instigator of 'blue sky' innovations. There is still an idea that "the government should not pick the winners and losers".

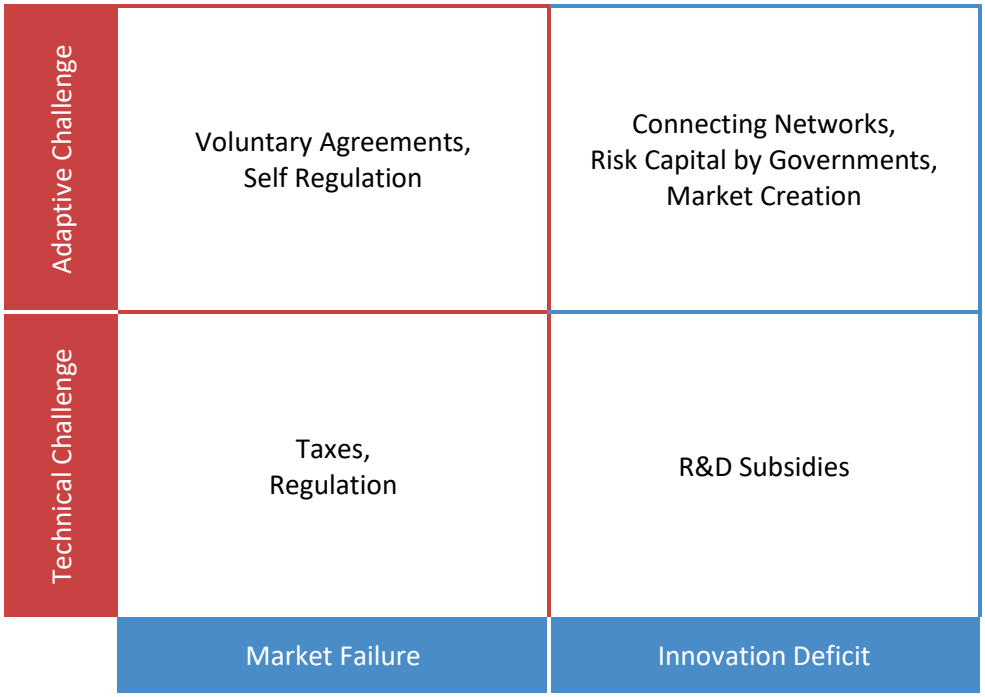
This is why mobilising capital at scale for biodiversity is not just a technical problem. There is enough money to halt and reverse the loss of biodiversity: the biodiversity funding gap is only a fraction compared to the dependency of the global economic system on biodiversity and natural capital. But as long as biodiversity is not considered a valuable input into the standard economic model, there is little incentive to tackle the problem beyond appreciating nature as intrinsically valuable.

Meeting the biodiversity crisis requires behavioural change. Yet, typically we persist in what we are doing because that is the safe or safer course of action. We know what we have (the devil we know), and any kind of change has inherent uncertainties and contains the possibility of negative consequences.

Yet, judging by the majority of reports and publications, most participants and stakeholders approach biodiversity as a technical problem. To bridge the biodiversity financing gap, we collectively require a change in values, beliefs, roles, relationships, and approaches.

We must determine whether the challenge to scale up biodiversity financing is a market failure or an 'innovation deficit'. A market failure is often the reason why governments intervene through policies such as taxes, subsidies, wage and price controls, and regulations. Innovation, or the lack thereof, is defined as the process of translating an idea or invention into a good or service that creates value or for which customers will pay. Innovation is synonymous with risk-taking and creating new markets.

A key question is, who is leading the innovation process? It is generally thought that entrepreneurs should be leading in innovation and that governments should refrain from doing so as they are terrible at "picking winners". Yet, this underappreciates the role that governments plays in innovation. Each component that makes an iPhone smart ultimately was funded through government programs, including the internet, GPS, click wheel navigation, multitouch screens, and the iPhone's speech based artificial intelligence assistant: SIRI. Furthermore, it was the government that provided Jobs and Wozniak with a 500.000 USD start-up funding.



Therefore, this report recommends that governments expand their biodiversity policy toolbox, where appropriate, by developing a policy mix that both corrects market failure and supports innovation. Thus, in addition to taxes and regulations, governments can build markets for biodiversity, provide risk capital to biodiversity related investment funds, and break down the current siloed thinking by connecting different networks.

ANNEX II Biodiversity-themed investment opportunities

New investment opportunities for institutional investors are emerging. For this report we had discussions with several biodiversity-related private equity funds. Currently the amount of institutional capital flowing into biodiversity related funds amounts to very little. For example, PYMWYMIC's Healthy Ecosystems Impact Fund attracted EUR 5 million in investments from insurance company a.s.r. and Van Lanschot Kempen.

Furthermore, one bank is now developing a biodiversity-themed investment fund itself and aims to launch this in 2021. The target size of the fund is EUR 250 million.

The scale and ambitions of biodiversity finance are increasing. HSBC Global Asset Management partnered with Pollination to create the world's largest dedicated natural capital asset management company with a target raise of USD 6 billion from institutional investors. Investment themes will include: regenerative and sustainable agriculture; sustainable forestry; oceans, including sustainable fisheries, coastal restoration and blue carbon; biodiversity and wildlife protection and restoration; natural capital and real assets that generate carbon credits.

Another example includes the AGRI3 Fund. The fund was created by the UN Environment Programme and Rabobank and aims to raise USD 1 billion for sustainable agriculture and forestry. The Dutch Ministry of Foreign Affairs and Rabobank each contributed USD 40 million. The first transactions include a USD 5 million loan to a Brazilian company that promotes forest protection and renovation of degraded pastureland.

Biodiversity investment opportunities are not limited to Private Equity funds. Rabobank has a Food & Agri Innovation Fund that invests between EUR 500k - EUR 4 million per opportunity. Investments include Rootwave, a sustainable and scalable organic alternative for herbicides; and BeeHero, a company that optimizes natural pollination of bee colonies.

In other sectors important innovations are gaining traction. For example, regenerative agriculture is a promising methodology that seeks to add to the soil through a self-nourishing ecological system that benefits the environment in the process. In addition to benefitting biodiversity, regenerative agriculture stores more water and draws more carbon out of the atmosphere. Kering, a French luxury group that owns a number of global brands, launched a regenerative agriculture fund for one million hectares of land in partnership with Conservation International.

ANNEX III Questionnaire on Biodiversity Finance by Dutch Financial Institutions for the Period 2016 – 2022

The Netherlands Enterprise Agency (RVO- part of the Ministry of Economic Affairs and Climate Policy) has commissioned Climate Risk services (CRS) to map private financial flows to biodiversity from Dutch Financial Institutions. This is part of a larger program of the Ministry of Agriculture, Nature and Food Quality on Greening Finance. All information provided will be anonymised and not shared with other participants beyond the Netherlands government entities listed above.

Introduction

Estimating private finance is challenging because private actors do not typically monitor and report their biodiversity expenditure. Furthermore, there is currently no taxonomy yet that properly defines biodiversity-related economic activities.

We have adopted a classification from the recent OECD report "A Comprehensive Overview of Global Biodiversity Finance". According to this report, it is estimated that private expenditure on biodiversity is between USD 6.6 - 13.6 billion per year.

This questionnaire aims to estimate the share of this finance provided by Dutch financial institutions.

We realise that in the absence of an agreed methodology and definitions it is not always possible to provide completely accurate and verified information. Our questions have been developed to provide guidance in obtaining this information.

For example, your institution may invest in green bonds. Please provide the amount invested in green bonds (which is probably known) and provide a best estimate of the percentage of those proceeds to finance biodiversity-related conservation measures.

In case your institution cannot provide the percentage related of finance of biodiversity-related conservation measures, we apply a standard value based on expert review by the non-profit The Nature Conservancy[28].

Can you provide the following details of your institution:

1. Type of entity:
   ☐ Bank ☐ Insurer ☐ Investment Fund ☐ Asset Manager ☐ Institutional Investor

2. Geographical coverage of operations:
   ☐ Europe ☐ Asia ☐ N. America ☐ S. America ☐ Africa
   ☐ Middle East ☐ Australasia ☐ All of the above

3. Total assets/portfolio assets/gross premiums written: _____

4. Is the institution regulated by the Dutch Authority for the Financial Markets?
   ☐ Yes ☐ No

[28] Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobin-de 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.

Can you provide the following information about you institution's biodiversity activity:

5. Does your institution incorporate biodiversity elements into its vision and strategy. If so, can you please provide further details.

6. Does your institution calculate its biodiversity footprint. If so, can you please provide further details.

7. Does your institution regularly publish any non-financial reports or data that are biodiversity related?
☐ Yes (please provide details below) ☐ No

Can you provide the following information about you institution's biodiversity financing:

8. Which type(s) of green products/services does your institution currently offer in the Netherlands? Details to be provided in section 9 – 18.

- ☐ Biodiversity Offsets
- ☐ Sustainable commodities/sustainable supply chains:
  - sustainable forestry products
  - sustainable agricultural products
  - sustainable fisheries and seafood products
  - sustainable palm oil
- ☐ Natural Infrastructure Investments or Lending
- ☐ Carbon Credits from natural climate solutions (forestry/agriculture/etc.)
- ☐ Green Bonds/Climate Bonds
- ☐ Sustainability Linked Loans
- ☐ Biodiversity-related Impact Funds
- ☐ Other green or sustainability linked products

9. <u>Biodiversity Offsets</u>
Does your institution offset its biodiversity footprint, or does your institution provide financing to companies for the purpose of their biodiversity offsetting. If applicable, please provide data for the period 2016 – 2020.

Own offsetting: Client offsetting:

10. Sustainable Forestry Products
    Does your institution provide capital (investments or loans) to sustainable forestry products? If so, what percentage of sustainable forestry products do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

11. Sustainable Agricultural Products
    Does your institution provide capital (investments or loans) to sustainable agricultural products? If so, what percentage of sustainable agricultural products do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

12. Sustainable fisheries and seafood products
    Does your institution provide capital (investments or loans) to sustainable fisheries and seafood products? If so, what percentage of sustainable fisheries and seafood products do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

13. Sustainable palm oil
    Does your institution provide capital (investments or loans) to sustainable palm oil? If so, what percentage of sustainable palm oil products do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

14. Natural Infrastructure Investments or Lending
    Does your institution provide capital (investments or loans) to natural infrastructure projects? Natural infrastructure projects provide ecosystem services for human populations, which produce similar outcomes to implemented gray infrastructure. For example, natural infrastructure relevant to coastal resilience includes the conservation and restoration of dunes or oyster reefs. These projects often take the form of public-private partnerships where the government pays a fee based on certain performance indicators. If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

15. Carbon Credits from natural climate solutions
    Does your institution provide capital (investments or loans) to projects or activities that generate carbon credits from natural climate solutions? Agriculture, forestry, and other land use activities make up nearly one fourth (23%) of all anthropogenic emissions worldwide, but they store carbon as well. Such activities are referred to as natural climate solutions (NCS). If applicable, what percentage of carbon credits from natural climate solutions do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    Loans:
    % biodiversity-related conservation measures:

16. Green Bonds/Climate Bonds
    Does your institution invest in Green Bonds/Climate Bonds? If so, what percentage of Green Bonds/Climate Bonds do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Investments:
    % biodiversity-related conservation measures:

17. Sustainability Linked Loans
    Does your institution provide Sustainability Linked Loans? If so, what percentage of Sustainability Linked Loans do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

    Loans:
    % biodiversity-related conservation measures:

18. Biodiversity-related Impact Funds
    Does your institution invest (or provides investment products) in Biodiversity-related Impact Funds? Examples include the EcoBusinessFund of Finance-in-Motion and Mirova Natural Capital (formerly Althelia). These investments are seeking a financial return while at the same time improving natural capital. If so, what percentage of Biodiversity-related Impact Funds do you estimate is used to finance biodiversity-related conservation measures? If applicable, please provide data for the period 2016 – 2020.

Investments:
% biodiversity-related conservation measures:

19. Public de-risking instruments
    Of the Biodiversity-related Impact Funds listed above, please indicate whether the funds are being supported by any of the publicly funded de-risking instruments listed below. Please indicate which government provided the instruments.

- Guarantees
- Syndicated loans
- Direct investments in companies
- Shares in Collective Investment Vehicles
- Credit lines
- Simple co-financing arrangements (grants and loans)
- Project finance Special Purpose Vehicles (SPVs)

Government(s):

20. Other
    Please provide any other biodiversity-related investment, lending or other financial product that was not included in this questionnaire.

21. What are the challenges to reporting on biodiversity and/or green financial investments? What suggestions do you have to improve reporting on biodiversity expenditures?

ANNEX IV Participants Round Table

Participants of the Round Table and the organization they represent:

- Katia Karousakis – OECD
- Odile Conchou – CBD
- John Tobin – Cornell University
- Gilles Kleitz – French Development Agency (AFD)
- Jeremy Eppel – Finance for Biodiversity (F4B)
- Waltraud Ederer - Society for international cooperation (GIZ), Germany
- Wijnand Broer – CREM consulting
- Iris Visser – Nature^Squared
- Merel Hendriks – Nederlandse Waterschapsbank
- Thomas Byrne – Department for Environment Food & Rural Affairs, UK
- Masroora Haque – Department for Environment Food & Rural Affairs, UK
- Jan Willem den Besten - IUCN
- Onno van de Heuvel – UNDP (BIOFIN)
- Rixt de Jong - Statistics Netherlands
- Romie Goedicke - UNEP
- Ties Ammerlaan – Department of Finance, the Netherlands
- Lucretia Landmann – Department for the Environment (BAFU), Switserland
- Christa Ratte – Department for the Environment, Nature Conservation and Nuclear Safety (BMU), Germany
- Ko Melis - RVO
- Femke Jongeneelen – RVO
- Brenda Poot - RVO