Biodiversity impact of banks:

Time to start making it count

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Banking for Impact

Banking For Impact

About Banking for Impact

The Banking for Impact (BFI) is a pre-competitive cross-sectoral collaboration of banks and knowledge institutions. The initiative has created a common impact measurement and valuation approach tailored for banks and aims to scale up the application of impact measurement and management. The end-goal is to contribute to a more inclusive market economy, one that serves people and the planet, not just shareholders. Until now, social and environmental threats have been ignored in favour of a short-sighted economic system. Negative side effects are piling up—runaway climate change, natural resource depletion, increasing inequality, diminishing social safety nets and a widening gap between the rich and poor. To help reach the goal, the BFI developed a robust, scalable method for the quantification, valuation, attribution and aggregation of impacts for the sector. The group is now also developing tools to help banks get a broader view of their value creation and a better understanding of their impact on society, empowering them to use this information to report and manage impact.

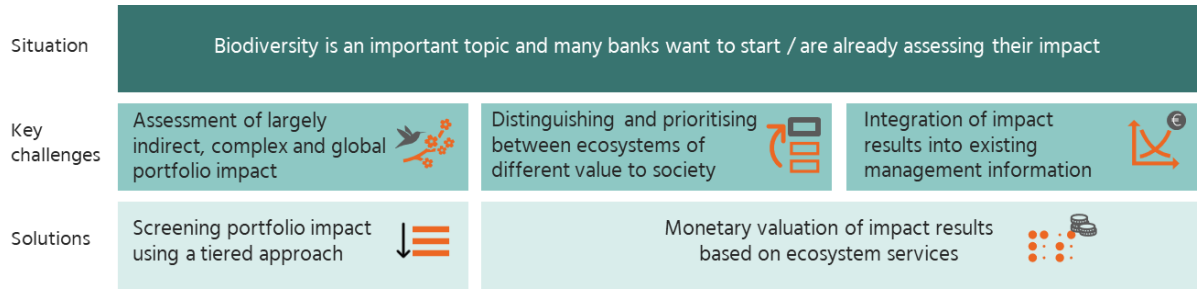
The BFI has laid out its vision for measuring what matters in a vision paper available on its website.

Interested in joining the BFI working group? Please contact Sven Renon.

Executive Summary

The loss of biodiversity poses an increasing threat not only to the survival of ecosystems but also to economies and societies that depend on these ecosystem services. Banks are exposed to significant risks associated with biodiversity decline and are at the same time in a unique position to accelerate positive change (double materiality). To protect biodiversity, capitalise on opportunities and mitigate risks, banks need to gain insights into their biodiversity impact: as a result, many banks have started, or want to start, assessing the impact of their activities.

Capturing the largely indirect biodiversity impact of a bank's portfolio can be complex and challenging. The BFI holds the position that banks can, nonetheless, start assessing their biodiversity impact by screening their portfolio using a tiered approach. Furthermore, to integrate biodiversity into decision-making, monetary valuation is key.[1]



As shown in the figure above, three key challenges relating to biodiversity assessment are identified:

1. Bank's portfolios are complex and global, and their impact occurs largely indirectly. While it is preferable to measure actual, on-site biodiversity loss, this is challenging for banks. What is needed are approaches that can help identify major impacts within a bank's portfolio, so that efforts and resources for actual in-depth measurement of impacts can be concentrated efficiently.
2. It is often difficult to distinguish and prioritise between ecosystems of different values. Many approaches consider the loss of biodiversity through species abundance and disappearance thereof. Enriching this with monetary valuation helps the consideration of the differences between ecosystem services and their value *to society*. This differentiation is valuable to facilitate effective decision-making.
3. The integration of biodiversity results into existing management information and systems is another challenge associated with biodiversity impact assessment. Biodiversity footprints are often expressed in metrics that cannot easily be reconciled with financial information. Monetary valuation of impact results can bring non-financial and financial information together: this not only facilitates decision-making on tackling biodiversity loss but also helps relate it to financial information.

[1] Value Balancing. The Case of Monetary Valuation

About this paper

This paper, part of a wider series of discussion papers, sets out the position of the Banking for Impact (BFI) working group on measuring and valuing biodiversity. In particular, it elaborates on three key challenges related to assessing biodiversity impact and how these can be addressed. The paper represents a joint vision of the BFI and its members, but it does not necessarily represent the current practices of individual members.

The aim of the BFI is not to add yet another methodology on how biodiversity can be assessed; rather, it seeks to build on the existing debate by emphasising and showcasing the value of tiered approaches for portfolio screening and monetary valuation in assessing biodiversity. For this, we build on publications and overviews of approaches that already exist, such as the Partnership for Biodiversity Accounting (PBAF) and the Finance for Biodiversity pledge.

In this paper we use the term "bank" to refer to any institution active in the financial market, including asset managers and impact investors, as any point made about biodiversity assessment and valuation for banks also applies to all players in the broader financial industry.

The importance of assessing biodiversity for banks

Plants, animals and microorganisms are found in, for example, wetlands, forests and coral reefs support ecosystem services, which deliver benefits to people, society and business.[2] Biodiversity underpins and supports the health of these ecosystems providing us with water, oxygen, fertile soils, climate control, medicine and food. However, worldwide biodiversity has declined by almost 70% over the past 50 years.[3] With this, biodiversity loss is one of the many, often interlinked social and environmental challenges society faces and is illustrated as one of the nine planetary boundaries by the Stockholm Resilience Centre.[4] According to the World Economic Forum, more than 50% of the global gross domestic product is moderately or highly dependent on nature and its ecosystem services.[5] It is no surprise that the current decline in biodiversity poses a serious threat to ecosystem services and the economic activities and livelihoods that depend on them, to the extent that one in five companies could face significant operational risks due to collapsing ecosystems.[6]

Biodiversity is relevant for banks from a dependency, financial risk and impact perspective (double materiality). Firstly, they are exposed to significant risks through investments in sectors that are dependent on ecosystem services (see Figure 1). Secondly, banks are stewards of capital and can therefore direct and redirect financial flows and foster biodiversity.

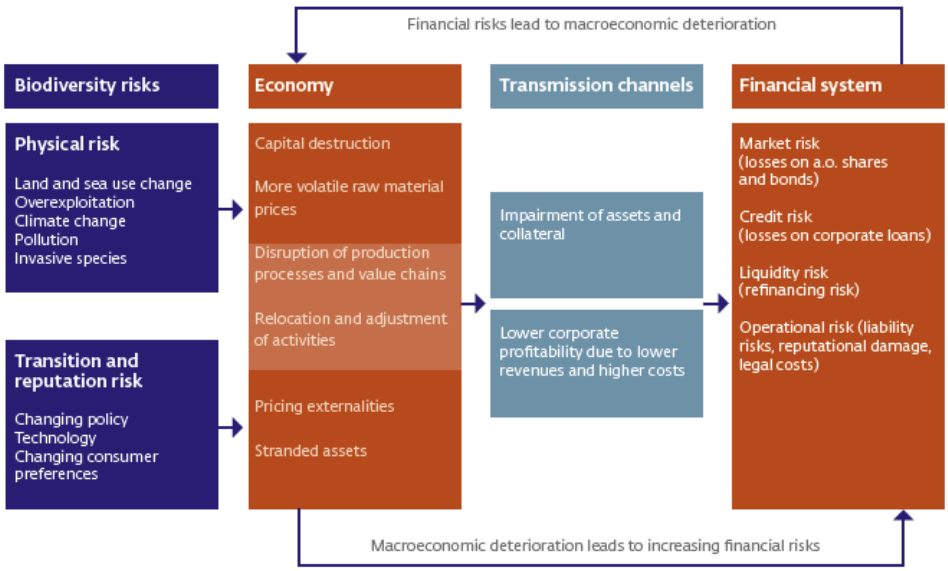


Figure 1. Biodiversity loss can lead to significant financial risk for banks[7]

[2] TNFD (2022) The TNFD Nature-related Risk & Opportunity Management and Disclosure Framework

[3] WWF (2022) Living Planet Report 2022.

[4] Stockholm Resilience Centre (2022) The nine planetary boundaries

[5] World Economic Forum (WEF) (2020) Half of World's GDP Moderately or Highly Dependent on Nature, Says New Report

[6] Ernst and Young (EY) (2022) Why biodiversity may be more important to your business than you realize

[7] DeNederlandscheBank (DNB) (2020) Indebted to nature: Exploring biodiversity risks for the Dutch financial sector

Two key reasons why biodiversity measurement and valuation is important for banks are outlined below:

I. **Banks face significant risks with the decline of biodiversity**:

   a. Physical risk**:** Through their activities, banks are indirectly dependent on biodiversity. Many sectors in banks' lending and investment portfolios depend on ecosystem services.[8] According to the Dutch Central Bank, a total of € 510 billion of investments, which amounts to 36% of all investment portfolios of Dutch financial institutions, is highly or very highly dependent on one or more ecosystem services.[9] With the decline in ecosystem services, companies can face significant disruptions in their business, affecting banks that are exposed to them financially. This financial risk is larger for exposure to sectors that contribute to degradation. Dependence on ecosystem services is especially high in agriculture, food and textile processing industries.[10] It is key that banks either encourage sustainable change within the relevant sectors or disinvest. Biodiversity assessment helps to distinguish between sectors with high and low contribution to ecosystem degradation.

   b. Transition and reputational risk: Policy makers and regulators are increasingly focusing on preserving biodiversity, such as the EU Biodiversity strategy for 2030 and the Deforestation Directive. This can pose a significant risk to companies and sectors with a highly negative biodiversity footprint. It is expected that over time these externalities will be "internalised", or in other words, priced in (for example, through taxation or increased cost of capital). In addition, sustainability has gained importance in society: increasing awareness on issues such as climate change or corporate misconduct are changing consumer, investor and other stakeholder expectations.[11] Through exposure in companies with significant negative impact on biodiversity, banks can face reputational risk.

[8] DeNederlandscheBank (DNB) (2020) Indebted to nature: Exploring biodiversity risks for the Dutch financial sector

[9] Ibid

[10] Ibid

[11] Morgan Stanley (2020) 7 Insights from Asset Owners on the Rise of Sustainable Investing

II. **Banks can have an impact by redirecting financial flows to affect sustainable change**: A bank's biodiversity impact occurs mainly indirectly, through its investment and lending activities. By using investments and loans to foster biodiversity conservation and restoration, banks can support sustainable change. For this, banks should be able to distinguish between sectors that contribute positively and negatively.

Real Case study | The Dutch Nitrogen Crisis

Policymakers and regulators are increasingly focusing on preserving biodiversity. This can pose a significant risk to companies and sectors with a high biodiversity footprint. Following several court cases, the Dutch government published far-reaching plans to tackle the nitrogen crisis in the Netherlands. As a result, the agriculture sector in particular is required to reduce nitrogen emissions to protect sensitive ecosystems. Rabobank is a heavy investor in Dutch agriculture, financing roughly 85% of farmers.[12] Through these investments, Rabobank faced a significant risk of being exposed to potential write-offs (amounting to €76 million)[13] and negative publicity.

[12] NOS News (2022) Rabobank over rol stikstofcrisis: 'Zouden nu anders handelen'

[13] deVolkskrant (2022) Stikstofcrisis noopt Rabobank tot voorzichtigheid: melkveehouderij voortaan risicovolle sector.

Assessing a bank's biodiversity impact: Challenges

Biodiversity has become an important topic in the financial sector, both from a risk and impact perspective (see the previous section). With multiple impact drivers (e.g. climate change, land use and air pollution)[14] and different metrics, assessing biodiversity impact is not a straightforward exercise. However, realising the importance of assessing biodiversity impact, several initiatives (such as PBAF, The Capitals Coalition, the Institute for European Environmental Policy, Cambridge Institute for Sustainable Leadership) have published guidance documents.

An overview of approaches and tools is provided by the Finance for Biodiversity Pledge. This overview provides an understanding of the various dimensions associated with biodiversity impact assessment. In addition, important gaps are highlighted that are not yet addressed by existing approaches and tools.

Assessing the biodiversity impact of a bank's portfolio remains challenging and complex. We focus on a few key challenges that arise, and which are detailed below. More detail on methodological gaps can be found in Finance for Biodiversity Pledge.

I. **Assessing actual portfolio biodiversity impact (on activity or company level):** A large part of a bank's biodiversity impact occurs indirectly through their lending and investments. Companies and activities that receive this financing usually span the globe and are part of complex value chains. In addition, company-specific data is often not available as most companies themselves do not collect it yet. As a result, measuring *actual*, on-site biodiversity impact for a bank's portfolio is nearly impossible.
II. **Distinguishing between ecosystems of different value:** When prioritising ecosystems for targeted action and mitigation measures, it is important to consider the differences in value between ecosystems. Current metrics used to assess biodiversity impact often assess biodiversity loss expressed in mean species abundance (MSA) and potentially disappearing fraction of species (PDF). This does not explicitly highlight the importance of the ecosystem to society. Monetary valuation, on the other hand, creates a direct link between MSA and PDF loss and its relevance to society. This allows for distinguishing between ecosystems taking societal value into account, and helps inform prioritisation between different ecosystems.
III. **Integrating biodiversity impact in existing management information:** The EU Biodiversity strategy for 2030 highlights that "biodiversity considerations need to be better integrated into public and business decision-making at all levels".[15] But the wide variation in metrics across non-financial indicators leads to limited comparability among them. This, in turn, becomes an obstacle for decision-making, specifically when this involves trade-off decisions. In addition, it is difficult to integrate biodiversity assessment results into accounting systems used by banks due to the

[14] PBAF (2022) Taking biodiversity into account: PBAF Standard v2022 Biodiversity impact assessment - Footprinting

[15] European Commission Biodiversity strategy for 2030

difference between financial and non-financial metrics. An example is the large part of the information that needs to be reported to meet reporting requirements of current and upcoming (EU) sustainability regulations. Sustainability information needs to be reported in different metrics. This means that it is often difficult to understand these metrics on their own and to relate and integrate them into existing (financial) management information. This limits the usefulness of the information beyond reporting and compliance.

Potential consequences if the three challenges outlined above are left unaddressed:

- Banks will see increased risk costs materialise: as outlined previously, biodiversity decline poses a significant physical risk to banks as a significant share of their portfolio depends on ecosystem services. Without anticipating and mitigating these risks, they are likely to materialise and have a financial impact on banks.
- It is difficult to deliver on sustainability commitments: many banks pursue a sustainability strategy and have made commitments accordingly. Without the necessary insights and data, it is difficult to deliver credibly on these commitments. This can expose banks to increased stakeholder pressures and could negatively affect their reputations.
- Biodiversity impacts can have system proportions: a significant share of banks' portfolios and global GDP depends on ecosystem services. With unmitigated biodiversity decline, our economic systems and welfare could be significantly affected. There is a strong link with climate change in this regard; so called "tipping-points" can lead to irreversible loss of, for example, coral reefs and the Amazon rainforest.[16]

The three key challenges identified in this section can be addressed: tiered approaches can be used to gain insights into potential portfolio impacts and identify focus points for actual biodiversity impact assessment. In addition, monetary valuation can help to distinguish between ecosystems of different values and better integrate biodiversity impacts into the business context. These solutions are outlined in more detail in the section below.

[16] Armstrong McKay et al. (2022) Exceeding 1.5 °C global warming could trigger multiple climate tipping points

Assessing a bank's biodiversity impact: Solutions

I. **Tiered approaches to assess portfolio biodiversity impact:** Assessing the actual biodiversity loss in specific locations is almost impossible, as the biodiversity impact of a bank extends globally and indirectly through its portfolio. This does not mean that the impact on biodiversity cannot be measured at all: an alternative solution is assessing *potential* biodiversity impact.

Approaches to assessing potential impact can be used to screen a bank's portfolio for biodiversity hotspots that can then be used later as focus points for measuring actual biodiversity impact. Using investment and loan data and combining it with geospatial data on biodiversity loss enables banks to identify those parts of their portfolio that contribute significantly to biodiversity loss. In addition to identifying priority portfolios (i.e. portfolios with a high biodiversity impact), priority locations can be determined.[17] The intersect between a priority portfolio and priority location forms "impact hotspots". Once these impact hotspots are identified, more localised biodiversity data can be collected to measure actual impact arising from a specific activity. This corresponds closely to the tiered approach developed by PBAF. More details on the approach published by PBAF can be found in the information box below.

Information box: Key assessment levels in a tiered approach[18]

Potential impact

1. Start with impact screening on a portfolio level to identify high-risk sectors / companies, using qualitative information
2. Screening loans and investments identified in Step 1 for location (if possible)–related impact risks, using geospatial biodiversity data (are assets located in or near areas with high biodiversity value?)
3. Screening loans and investments resulting from Step 1 and 2 for potential impact using a quantified footprint, gaining more detailed insight in the most important impact drivers.

Actual impact

4. Monitoring *actual* impacts for the loans and investments with the highest potential impact according to Step 3.

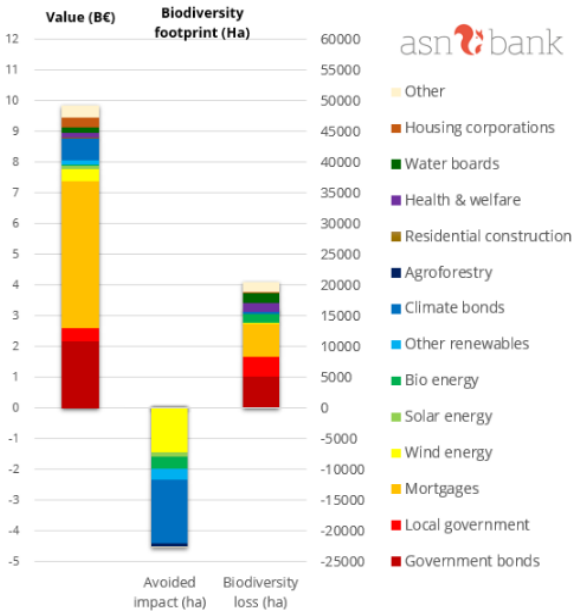
An example of the tiered approach is ASN Bank: it quantifies the biodiversity footprint of its investments without measuring actual, on-site biodiversity loss. More detail is provided in the case study below.

[17] For more information see: TNFD (2022) The LEAP Nature Risk Assessment Approach

[18] Partnership for Biodiversity Accounting Financials (2022) Taking biodiversity into account

Real case study | Quantified biodiversity impact of ASN Bank's investment portfolio

ASN Bank quantifies the biodiversity footprint of its investments for 2021. Instead of measuring actual impact, ASN assesses the potential impacts of its investments. Screening the investment portfolio for potential impact instead of actual impact, aligns with step 3 of the tiered approach proposed by PBAF. In addition, ASN Bank intends to use these impacts to determine how investments impact biodiversity, both positively and negatively, and identify impact hotspots. From this the bank aims to determine what needs to be done to reduce these impacts.



Total value and total impacts of investments on the ASN Bank balance

II. **Distinguishing between ecosystems of different value through ecosystem valuation:** In order to capture differences in ecosystem value, monetisation of ecosystem services can be used.[19] This approach accounts for the impact of biodiversity loss and the associated loss in ecosystem value on human wellbeing and with that its relevance to society. This helps distinguish between ecosystems of different value: for example, while the impact of grassland use in the Netherlands is significant, the value of lost ecosystems is much higher in the Amazon rainforest of Brazil. In other words, not every hectare of biodiversity has the same value due to the type of ecosystem service it provides. Recognising this helps prioritise between different biomes with different ecosystem service value and facilitates decision-making.

The pathway on the next page illustrates where monetary valuation comes into play. While many approaches stop at assessing the ecosystem damage through loss or gains in biodiversity, a monetary valuation approach translates loss of species into the loss of ecosystem services that can then be valued in monetary terms.

[19] For example, see Costanza R., de Groot R., Sutton P., van der Ploeg S., Anderson S.J., Kubiszewski I., Farber S., & Turner R.K. (2014) Changes in the global value of ecosystem services. Global Environmental Change, 26, 152–158

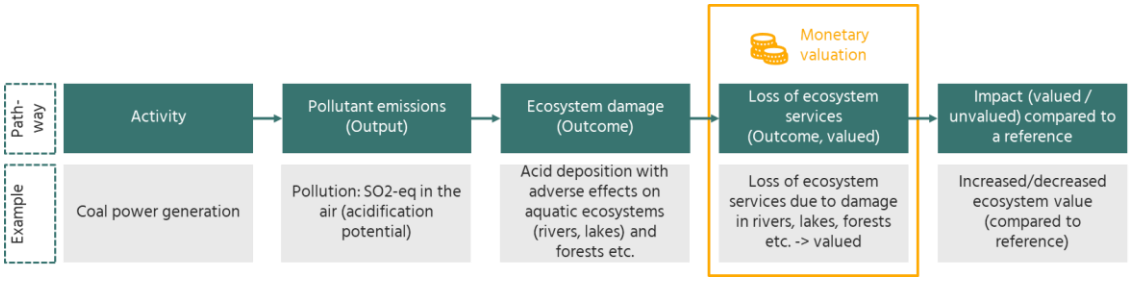
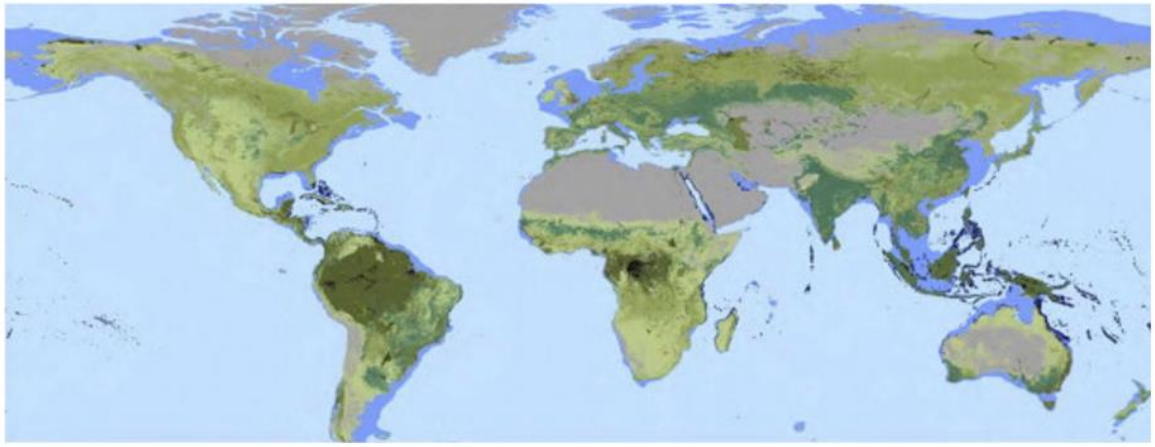


Figure 2 below shows the value of different ecosystem services around the world, based on the type of land cover and its contextual economic value: noticeably, the value per hectare per year differs greatly between ecosystems.



LandCover	Flow Value per Hectare per year	Legend	Area (millions of hectares)
Desert	$0		2,159
Tundra	$0		433
Ice/Rock	$0		1,640
Open Ocean	$491		33,200
Marine Shelf	$2,222		2,660
Grass/Rangelands	$2,871		4,418
Temperature/Boreal Forest	$3,013		3,003
Lakes/Rivers	$4,267		200
Tropical Forest	$5,264		1,258
Cropland	$5,567		1,672
Urban	$6,661		352
Swamps/Foodplains	$25,682		60
Tidal Marsh/Mangroves	$193,845		128
Coral Reefs	$352,249		28

Figure 2: Map of global annual ecosystem services based on 2011 land areas and 2011 unit values[20]

[20]Costanza R., de Groot R., Sutton P., van der Ploeg S., Anderson S.J., Kubiszewski I., Farber S., & Turner R.K. (2014) Changes in the global value of ecosystem services. Global Environmental Change, 26, 152–158

A notable fact is that valuing ecosystem services is not the same as privatising them or commodifying them for trade in private markets. Many argue that monetary valuation, especially when it comes to natural capital impacts, may lead to the so-called commodification of nature, i.e., the conversion of nature into an object that can be bought and sold on the market.

While many of these concerns have merit, it is important to highlight that expressing impacts in a monetary unit does not mean that nature services should be treated as something that is for sale in a market sense. That is not the purpose of monetary impact valuation, and applying monetary impact valuation in that way would be a misuse of it. Judgements are made on an everyday basis about the value of nature or other valuable things. These judgements are generally based on intuition or personal preferences, which more often than not substantially underestimate the impacts linked to them. The BFI believes that monetary valuation helps properly assign value to the things that matter, by revealing their true value: it is likely that exploitation will *decrease* by getting better information about the true costs of activities.[21]

III. Monetary valuation to better integrate biodiversity impact in the business context

Valuing biodiversity impacts enables the impact to be expressed in a common metric that can be readily compared to other financial, environmental and social impacts; it aids the evaluation of trade-offs between impacts and facilitates decision-making.

One method of valuing biodiversity impact is through *monetisation*. This estimates the size of the biodiversity impact through the associated loss in the monetary value of ecosystem services.[22] Expressing impact in monetary terms helps to integrate results into the business context and into existing, largely financial, management information. In addition, in contrast to impacts on climate change that are often expressed in the same unit, biodiversity impact has multiple drivers, and its results are often not expressed in a single metric. Translating results to monetary value helps to create a clear common measure for biodiversity assessment.

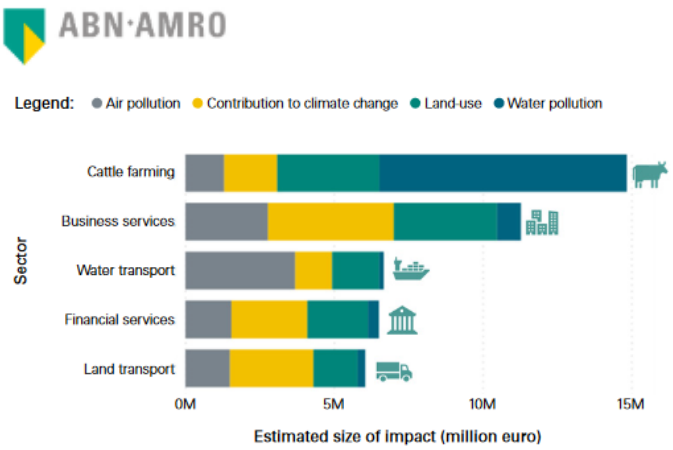
An example of monetised biodiversity impact can be seen in the case study on ABN AMROs biodiversity footprint, below.

[21] Taken from an upcoming publication from the BFI on monetary valuation. This paper has been reviewed by BFI members. For more information on the benefits of monetary valuation see Value Balancing The case of monetary valuation.

[22] The Economics of Ecosystems and Biodiversity (TEEB, 2022)

Real case study | Monetised biodiversity impact of ABN AMRO's portfolio

In 2021, ABN AMRO published the biodiversity impact of its loans and investments. Instead of assessing actual impact, ABN AMRO assessed the potential impact of its activities. This potential impact is assessed using country-sector data from loans and investments and combining it with the Global Impact Database (GID). Biodiversity impact is expressed in monetary terms and captures the loss of ecosystem services through the associated biodiversity loss. In addition, it allows comparability with other monetised sustainability information and financial information. This can inform trade-offs between financial and non-financial information and inform decision-making.



source: 'Impact Institute (2022) Global Impact Database Biodiversity'

Top 5 sectors in terms of negative biodiversity impact per driver (in 2021)

Three key benefits are associated with addressing the challenges outlined previously:

- Proactive risk management: Using the tiered approach, banks can get insights into the exposure of their lending and investment portfolios to biodiversity impact. This helps to mitigate costs associated with physical and reputational risk, through disinvestment or value chain collaboration, before they materialise.
- Considerable strengthening of stakeholder dialogue with the insights gained from biodiversity assessments through:
    - Developing engagement material for advisors in high-impact sectors
    - Co-developing effective regulatory measures
    - Building credibility around their sustainability commitments
    - Fostering constructive debate between financial institutions and other stakeholders
- Development of financial products aimed at creating positive impact

Concluding remarks

Assessing the largely indirect, complex and global biodiversity impact of a bank's portfolio is not a straightforward exercise. The BFI identifies three key challenges. namely:

I. Assessing portfolio impact on biodiversity
II. Distinguishing between ecosystems of different value
III. Integrating biodiversity impact assessment into already existing information.

Despite these challenges, the BFI argues that banks can start capturing the biodiversity impact of their activities. To overcome the challenges above, two key approaches are identified:

I. Tiered approaches to screen portfolio impact
II. Monetary valuation

The combination of the two solutions will allow banks to start assessing their impact and make it useful and applicable for decision-making.

We are aware that the field around tiered approaches and monetary valuation is still in development, and that different indicators and assessment dimensions need to be developed. However, the wealth of resources that exists already can help to make a start with biodiversity impact assessment. Banks, in applying and testing these resources in practice, can help further the maturity and success of the field. This will not only benefit actors in the financial markets, but will carry positive externalities that extend into society, the environment and the wider economy.

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