

Data to support biodiversity and nature-based finance

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Executive summary



Biodiversity is being lost and natural capital depleted at a high rate.



Much of the economy is either moderately or highly dependent on services provided by nature.



High-quality data is fundamental to building corporate metrics and targets in addition to subsequent measurement against those targets.



Key datasets which are not currently sufficient for the construction of high-quality measurement metrics include company-reported data, geospatial company asset data and supply chain data.



There is a wealth of high-quality data on the state of nature provided by non-governmental organisations, the scientific community and satellite mapping organisations.



The FoSDA Data to support Biodiversity and Nature-Based Finance Workstream has conducted a survey of FoSDA member organisations which reveals data gaps pertaining to relevant company-reported data.

Why biodiversity and nature?

In its [2020 Living Planet report](#), the WWF estimated an overall 68% loss in population sizes of mammals, birds, fish and amphibians between 1970 and 2016, citing changes in land use, species overexploitation, pollution and climate change as key anthropogenic drivers. A separate [2018 study](#) estimated that, of all mammal biomass on earth, only 4% is made up of wild animals with the remaining 96% being humans, our livestock and pets.

At the same time, according to a [2020 World Economic Forum-PWC study](#), over half of the world's gross domestic product is either moderately or highly dependent on services provided by nature and is therefore at risk in a world where these resources are being depleted.

So, while climate appears to have taken the lion's share of attention from media and financial institutions (FIs) alike, there is a growing realisation that financial markets need to act to measure and report on their portfolios' impact on and take responsibility for the transition to a nature-positive economy. Commonly accepted goals are to halt nature loss by 2030 and recover fully by 2050, though biodiversity and nature loss doesn't have the same call to action as climate does with Paris agreement-aligned 1.5-or 2-degree Celsius targets. We hope that consensus on this call to action emerges from the COP15 meeting.

How does data help?

Despite climate change being a huge challenge for humanity, the basics of understanding company-level impact on climate change requires the production of a single set of emissions metrics. The picture for natural capital and biodiversity is more complex and multi-faceted to solve, with impact and dependencies alike needing to be considered for soil, water, atmosphere and habitats among other sources of natural capital. In addition, the impact a company can have is highly dependent on location of operations and impacts through the value chain. So, to understand impact on biodiversity and natural capital is to understand both various dimensions of natural capital and to understand them based on interactions with the biomes around company asset location.

Building decision-ready metrics therefore requires additional high-quality overlays of geospatial data to help both financial and non-financial corporations to understand their interaction with biomes and transition to nature-positive business models.

FoSDA notes the following regulations, risk and reporting frameworks which are playing a role in this space.

TNFD

The [Taskforce on Nature-related Financial Disclosures](#) was established in 2019 to develop a risk management and disclosure framework with the eventual aim of supporting the shift of financial flows towards nature-positive outcomes. The TNFD has recently launched a Data Catalyst initiative with the goal of closing data and metrics gaps. FoSDA and some of its members are participating in both the TNFD and the Data Catalyst initiative.

EU Taxonomy

The [EU Taxonomy](#) defines how company activities contribute positively towards “biodiversity” as one of six environmental objectives. It also defines criteria which determine whether a company activity is doing significant harm to the same six environmental objectives. At time of publication, final definitions of substantial contribution to biodiversity have still not been published by the regulator.

GRI

The Global Reporting Initiative section [GRI 304](#) suggests four company disclosure metrics as a part of its series on environmental topics. GRI is aiming to release an update of standards in the second half of 2022.

EFRAG

The [European Financial Reporting Advisory Group](#) is a technical adviser to the European Commission, which has proposed metrics to be reported under the EU Corporate Sustainability Reporting Directive (CSRD). Proposed disclosure requirements include company transition plans, policies and measurable targets around biodiversity and ecosystems. The CSRD scope is large, including European-listed companies and international companies listed in Europe.

FoSDA believes that to manage good data availability and quality, it is important that these and any future initiatives rely on the same core, well-maintained and available datasets. Additionally, mandating tabular, machine-readable disclosure will increase data availability to the market. FoSDA will work to ensure alignment in this regard.

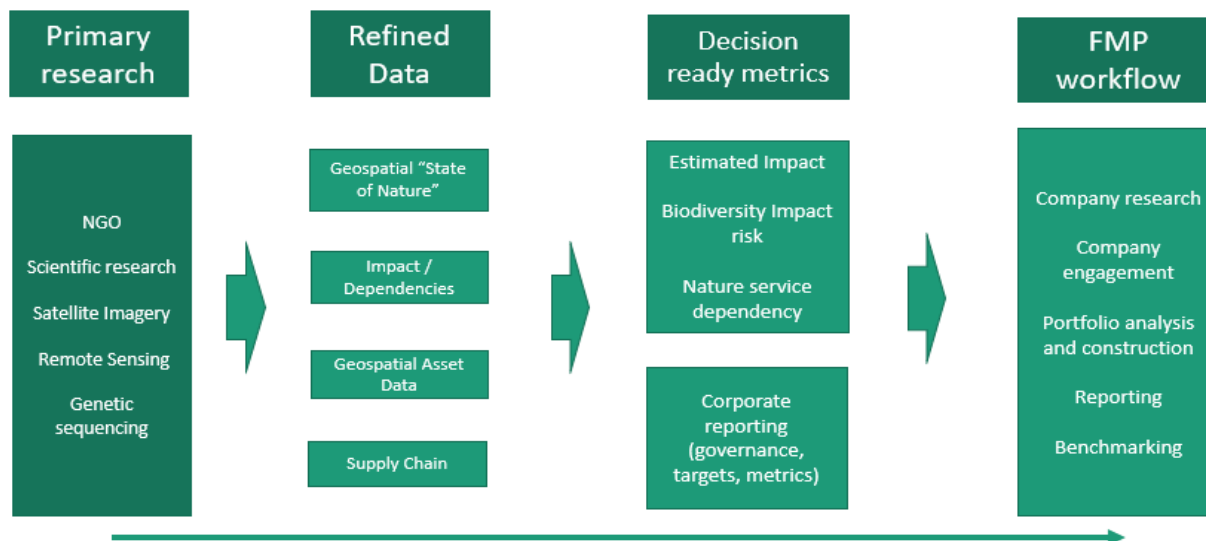
Data issues

In the same way as for other data types used for measuring other financial and sustainability risks, both non-financial and financial corporates require high-quality data and transparent, decision-ready metrics, either company-reported or high-quality proxy, to build nature-based risks into wider decision-making and risk management processes. Key tenets of high-quality data remain the same as for other sustainability risks including availability, accuracy, completeness, consistency and usefulness.

The risks associated with poor data quality are stark. As primary data trickles through to decision-ready metrics, metrics composed of incomplete or unreliable input data may lead to poor decision-making by corporates and FIs alike, with the possibility of nature-positive intentions leading to nature-negative outcomes.

FoSDA outlines below some of the areas where requisite data is currently weaker.

Figure 1. The nature data supply chain



Company-reported data

FoSDA welcomes activity of the frameworks listed above, but the reality is that reporting of nature-related governance, certification, metrics, targets and performance against targets at present is minimal. For example, using Bloomberg-gathered data, FoSDA finds less than 1% of companies report GRI 304-4 “IUCN Red List species and national conservation list species with habitats in areas affected by operations.” Coverage of company-reported data is currently far too narrow to facilitate FIs’ decision-making.

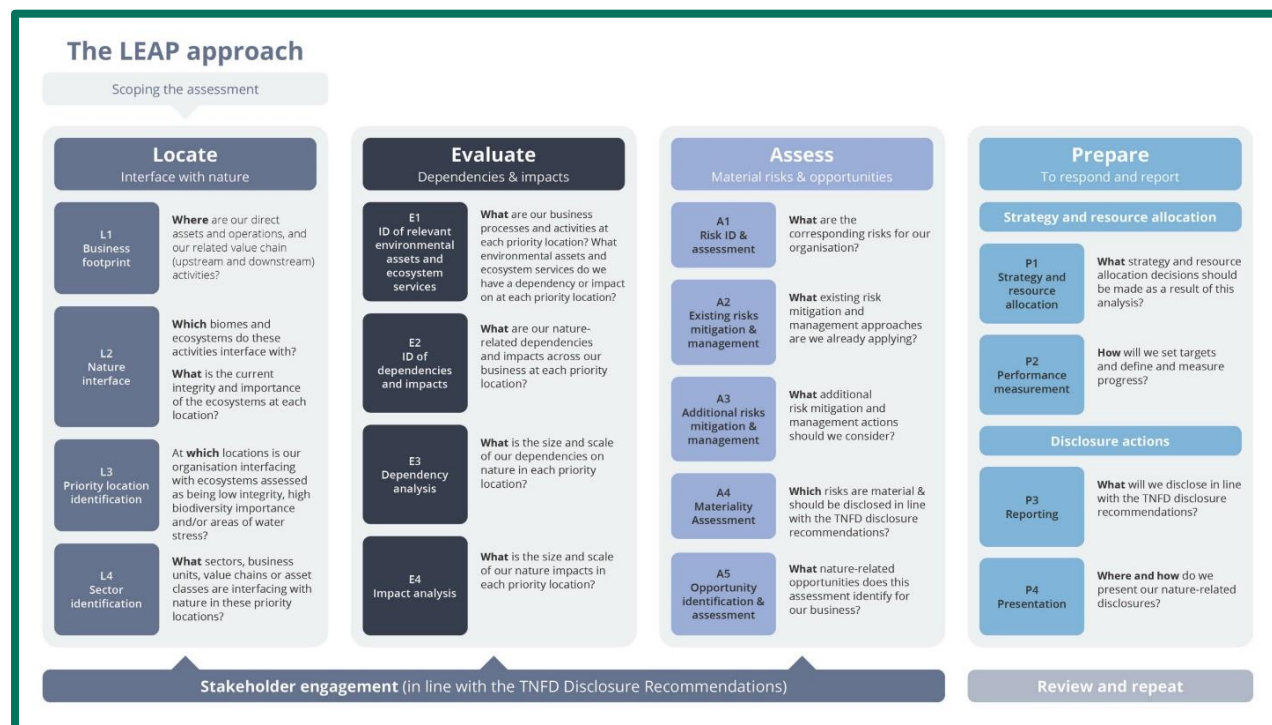
FoSDA notes that, where it is found, company-reported, nature-related data is often found in text paragraphs and as such is difficult to capture in an automated way. FoSDA is a proponent of data reported in machine readable format to reduce time to market and increase availability for financial decision-making.

Asset data

Per the [TNFD LEAP framework](#), locating company assets and evaluating their interaction with biomes around them is necessary. However, companies are not mandated to report such data and, though there are some data vendors which mention access to such

datasets, such as [Global Energy Monitor](#), [Bloomberg Asset Resolution](#), and [S&P](#), they are likely to be incomplete and may lack full necessary metadata such as asset activity, asset productivity, key raw material and natural capital inputs in order to conduct a holistic analysis of the asset’s impact on nature.

Figure 2. The TNFD LEAP approach



Source: TNFD

Supply chain

Supply chain impact is another critical element of natural capital impact and dependency. Retailers, for example, will often have no direct impact on deforestation through their own operations, but may do through selling products containing cocoa, palm oil and soybeans.

Tracing links to deforestation and other nature risks is difficult, as a commodity may pass from farmer, to processor, to product maker, to retailer to consumer with potentially more steps in between, making it difficult to differentiate products which facilitate nature-negative from nature-positive outcomes. A [European Union bill](#) to prevent imported deforestation which recently passed through the European parliament puts responsibility on companies to ensure traceability, but without detail on how this will happen.

There is some evidence of companies reporting sustainability certifications either as a part of their own operations or in relation to both company operations and supply chain audits, for example RPSO, RTRS Rainforest Alliance and Pro Terra. Such certifications do have limitations and some [critics](#).

Strong datasets

While the above paragraphs paint a grim picture of the readiness of data to support the transition to a nature-positive economy, there is a wide variety of high-quality data on the state of nature gathered by NGOs, the scientific community, satellite and mapping organisations and some private companies. These data reinforce the urgent need for action and will be able to support corporate target setting, benchmarking and performance management. Additionally, there are existing standards for green bonds issuance, including [categorisation](#) and standards, which lead to data availability on issuance aligning to natural capital restoration, though issuance itself remains a small fraction of the market.

Company-reported data – gaps and holes

To better understand gaps and holes in company reporting and data collection, FoSDA has undertaken a study of member organisations to understand the extent to which data is available for certain biodiversity and natural capital impact drivers and for specific indicators for each of those drivers. This builds on the work of the [Data Gaps and Holes workstream](#) which has already identified this area as one of gaps in its publications.

Research approach

In order to uncover where gaps may be present, FoSDA has surveyed its member organisations to understand where coverage is strong and where it is relatively weak concerning data availability for biodiversity and natural capital. This availability may provide an indicator as to the general level of availability of such data points to the marketplace.

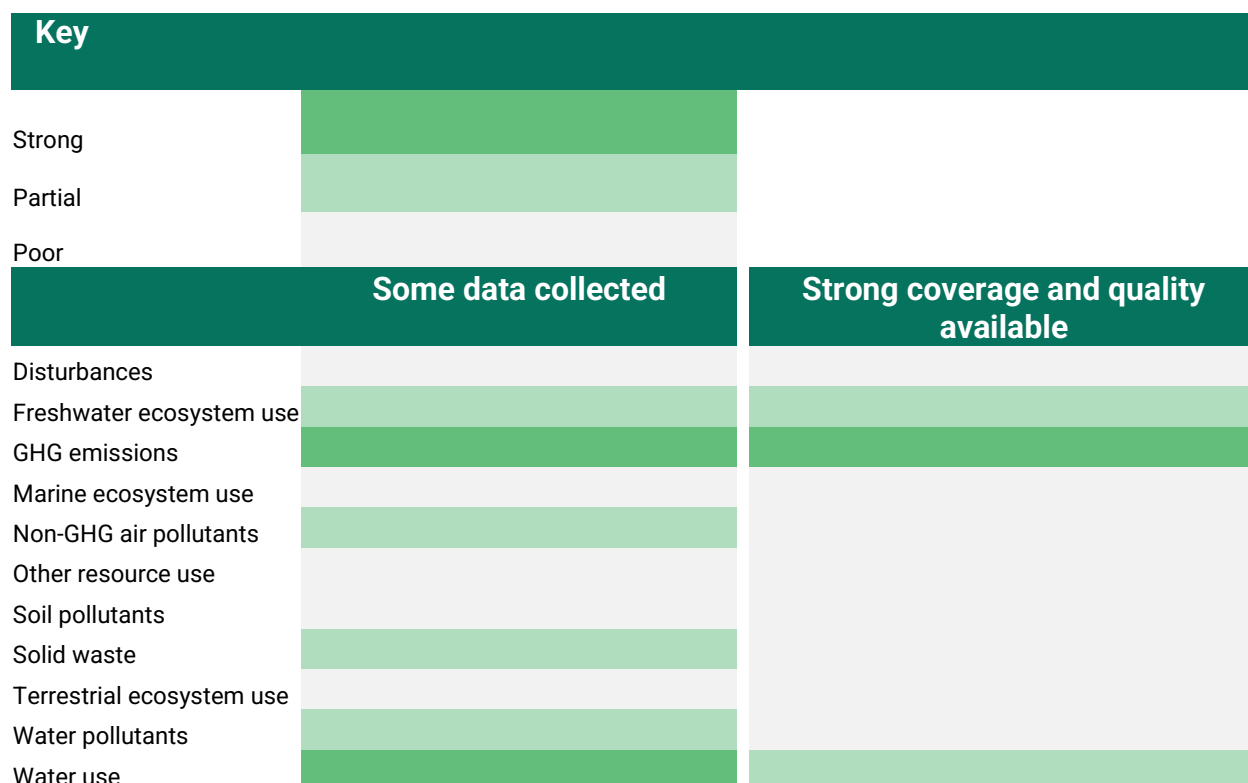
The survey asked the following questions. Is data collected pertaining to each of the Encore natural capital impacts? Is data coverage and quality strong for each of those impact drivers? The goal of the first question is to understand if there is a base level of data availability and the second explores the perceived strength and quality of data available. Question three examined more deeply metrics aligned to these impact drivers according to Annex 2 of TNFD V0.2 in order to develop some understanding of availability of individual metrics.

Our findings

The results of the survey show that the only driver where data was widely collected and of high coverage and quality was “greenhouse gas emissions,” which is not surprising given a heavy focus on this topic among market participants. That being said, there are still questions on the full availability of this dataset and its quality particularly concerning

scope 3 emissions. “Disturbances”, “marine ecosystem use”, “other resource use”, “soil pollutants” and “terrestrial ecosystem use” make up the drivers where very little data is collected and coverage and availability are perceived as poor. “Freshwater ecosystem use”, “non-GHG air pollutants” and “solid waste” have some coverage but without matching the breadth and depth of the coverage for GHG emissions.

Figure 3: Availability and quality of data collected



Note: Natural capital impact drivers align to the [Encore methodology](#).

Only one indicator, “Scope 1, 2 and 3 emissions”, was found to be widely covered by responding organisations while 21 indicators (51%) had partial coverage and 19 indicators (46%) were identified to be a gap with very little coverage. This bears out the trend indicated by the analysis on natural capital impact drivers above, that emissions is the only indicator which has strong coverage across the majority of responding organisations. Similarly, fewer well-covered individual indicators align to drivers such as “marine ecosystem use” and “freshwater ecosystem use.”

One distinct trend that emerges from analysis of individual indicators is that those indicators covering emission and pollutants do have at least partial coverage, for example those covering solid waste, soil pollutants and water pollutants. It would appear that availability of such emissions which may cause harm to ecosystems are at least partially disclosed and available to the market. However, the indicators pertaining to areas used

or restored that overlap with protected and internationally recognised areas all exhibited gaps in coverage according to survey respondents. Therefore understanding how companies are using land and if such use is near these key areas is still quite opaque.

Figure 4: Gaps in coverage of indicators

Key		
Gap in Coverage		
Partial coverage		
Poor coverage		
Indicator	Impact driver	Gap in coverage
Extent of land converted	Terrestrial ecosystem use	
Terrestrial ecosystem use overlap with legally protected and internationally recognised areas	Terrestrial ecosystem use	
Extent of land used for business activity	Terrestrial ecosystem use	
Extent of marine area converted	Marine ecosystem use	
Marine ecosystem use overlap with legally protected and internationally recognised areas	Marine ecosystem use	
Extent of marine system use for business activity	Marine ecosystem use	
Freshwater ecosystem use overlap with legally protected and internationally recognised areas	Freshwater ecosystem use	
Extent of freshwater area converted	Freshwater ecosystem use	
Extent of freshwater use for business activity	Freshwater ecosystem use	
Freshwater area restored	Freshwater ecosystem use	
Land restored	Terrestrial ecosystem use	
Marine area restored	Marine ecosystem use	
Volume of non-GHG pollutants released to air	Non-GHG air pollutants	
Pollutants released to soil	Soil pollutants	
Pollutants released to soil within or in close proximity to legally protected or internationally recognised areas	Soil pollutants	
Volume of water discharged	Water pollutants	
Volume of water discharged within or in close proximity to legally protected or internationally recognised areas	Water pollutants	
Concentration of water pollutants	Water pollutants	
Volume of water discharged to destinations	Water pollutants	
Water related detrimental incidents	Water pollutants	
Volume of wastewater treated, reused or avoided	Water pollutants	

Hazardous waste generated	Solid waste
Non-hazardous waste generated	Solid waste
Waste disposal	Solid waste
Waste minimised, reused or recycled	Solid waste
Total water consumption	Water use
Water consumption by source	Water use
Water consumption from stressed areas	Water use
Total water withdrawal	Water use
Water withdrawal by source	Water use
Water reused or recycled	Water use
Water loss mitigation	Water use
Produced water	Water use
Use of natural resources sourced from land	Other resource use
Use of natural resources sourced from marine areas	Other resource use
Use of natural resources sourced from priority areas	Other resource use
Use of wild species	Other resource use
Plastic production	Other resource use
Scope 1, 2 and 3 emissions	Greenhouse gas emissions
Level of invasive species in area	Biological alternations
Level of noise pollution	Disturbances



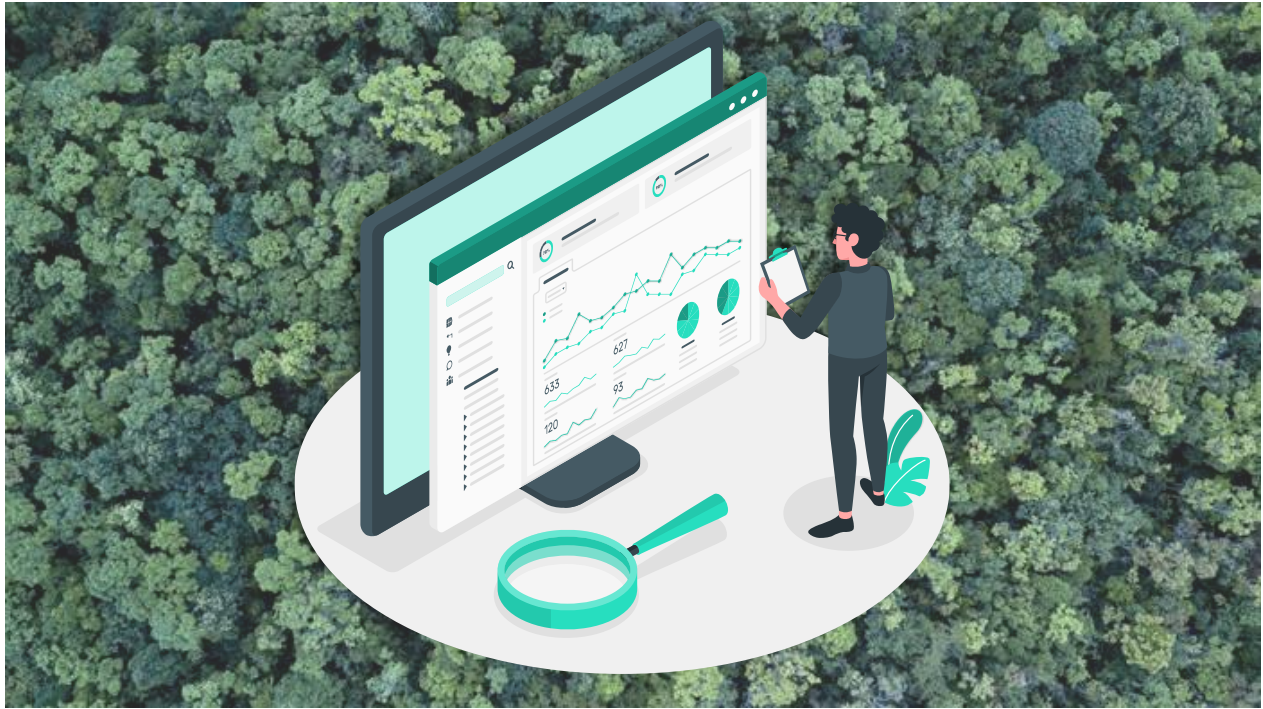
Source: [TNFD V0.2 Annex 2](#) Table 15 “Illustrative indicators and metrics for impact drivers”

Limitations

The method used identifies where there is a gap in data availability and quality, but it does not differentiate between gaps caused by lack of corporate reporting and gaps caused by a lack of data collection effort.

Second, although the FoSDA Biodiversity Workstream represents a large number of organisations which are active in the ESG data collection space and therefore results should be representative of the broader availability of data, not all data players across a diverse ecosystem could be surveyed, and results should be considered in this light.

Conclusions and moving forward



While the analysis here indicates a strong presence of data gaps in the availability of corporate-reported data relevant to biodiversity and natural capital, it should be noted that the one area which has gathered so much attention lately, emissions, has strong data availability. This leads the FoSDA Biodiversity and Nature-Based Finance Workstream to believe that, with the same level of rigour and investment which has been spent on developing the quality and availability of emissions datasets, the same can happen for biodiversity and natural capital datasets more generally.

In subsequent discussions and papers, the FoSDA Biodiversity Workstream intends to build on this analysis and undertake further work to ensure that the market delivers the necessary quality of data to make high-grade, decision-ready metrics to facilitate the transition to a nature-positive business environment.