Série grise

April 2023

Preliminary comparative analysis of biodiversity measurement approaches for public development banks

Authors:

The Biodiversity Consultancy

Paula VALDUJO, Pauline POISSON, Adrien LINDON, Leon BENNUN, Malcolm STARKEY, Camille MACLET

Coordinator:

Julien CALAS, AFD

#WorldInCommon

Contents

Acknowledgements:

This study was implemented with the support and the valuable inputs from Ben PEEL (EBRD), Cynthia WANG (EBRD), Claude TORRE (AFD), Philip AUDEBERT (IFAD).

EXECUTIVE SUMMARY

This report is extracted from a study to prepare a comparative analysis of six biodiversity metrics submitted to the French Development Agency (AFD) and the European Bank for Reconstruction and Development (EBRD) by the consultancy firm The Biodiversity Consultancy.

This report aims to share practical and reusable information for all Public Development Banks (PDBs) considering the use of these biodiversity metrics in the future, particularly in relation to the TNFD framework.

The six biodiversity metrics selected and analysed as potentially relevant to informing banks' investment decisions and reporting are:

- CBF – Corporate Biodiversity Footprint
- BFFI – Biodiversity Footprint for Financial Institutions
- STAR – Species Threat Abatement and Restoration metric
- GBS – Global Biodiversity Score
- ENCORE – Exploring Natural Capital Opportunities, Risks and Exposure
- ABC-map – Adaptation, Biodiversity and Carbon mapping tool

Before using any metrics, it is key to understand i) the **objectives** of the assessment, ii) the type of **input data** required, and iii) the **applicability** to specific sectors and projects[1]. Figure 1 below summarises the differences in scope, input and results provided by each metric.

The six metrics have different attributes, outputs and data requirements, and are suited to different assessment objectives. This makes it impossible simply to apply and compare all the metrics across a suite of projects. The study identified **three potential approaches to applying and comparing metric results** on a selected set of PDB's projects. These approaches are:

1. a **single-project metrics analysis**, which provides an approach to apply all six metrics for one carefully selected project with good data availability, and then to compare the results of the metrics and choose one or a set of several of them for use on a wider sample of projects. ;

2. a **high-level analysis**, which proposes a comprehensive approach for applying the metrics on projects based on easily obtainable data of low granularity, and then to compare the results of the different metrics used;

3. an **in-depth analysis**, which proposes a detailed approach based on more granular spatial and/or supply chain data, that can only be conducted for projects that have sufficient information available. **It is worth noticing that the in-depth assessment using value chain tools is not recommended due to the effort necessary to gather and systematize all necessary input data and the high estimated cost**. Such complex analyses are not easily scalable to the portfolio of a PDB. They could be applied to specific projects, in which very detailed information about the value chain can reveal specific patterns of interface with nature, impacts and dependencies.

The main conclusion of the study, based on data availability and considering the estimated efforts needed to compare each metric, recommends that development banks carry out a "consolidated" comparative assessment, combining both high-level and in-depth approaches according to the specificities of each project.

The proposed consolidated approach, should help PDBs understand how each metric addresses the following questions:

- What **pressures** are driving the **main positive** and **negative impacts** on nature (land use, climate change, direct resource exploitation, pollution)?

[1] The term 'project' is used here to design PDBs' financing, which can be either public or private, and each project can involve the mixing of several financial vehicles for the same investment on the ground..

- Which **projects/activities** create the **main positive** and **negative impacts** (including direct operations and modelled impacts of the **value chain**)?

- What are the impacts across the different **dimensions** of biodiversity?

- How do impacts vary across the three **scopes**, especially the modelled **value chain upstream**?

- How does the assessment help identifying and estimating **Nature Positive investments**?

- What are the priority elements for **mitigation**?

The lessons learned in this report, which proposes several protocols for using several metrics to compare their results, also contain information that may be useful to some PDBs who just want to choose one metric and see how they can use it.

In this perspective, **a decision tree for choosing one of the studied metrics** is suggested in Annex 2 of this report.

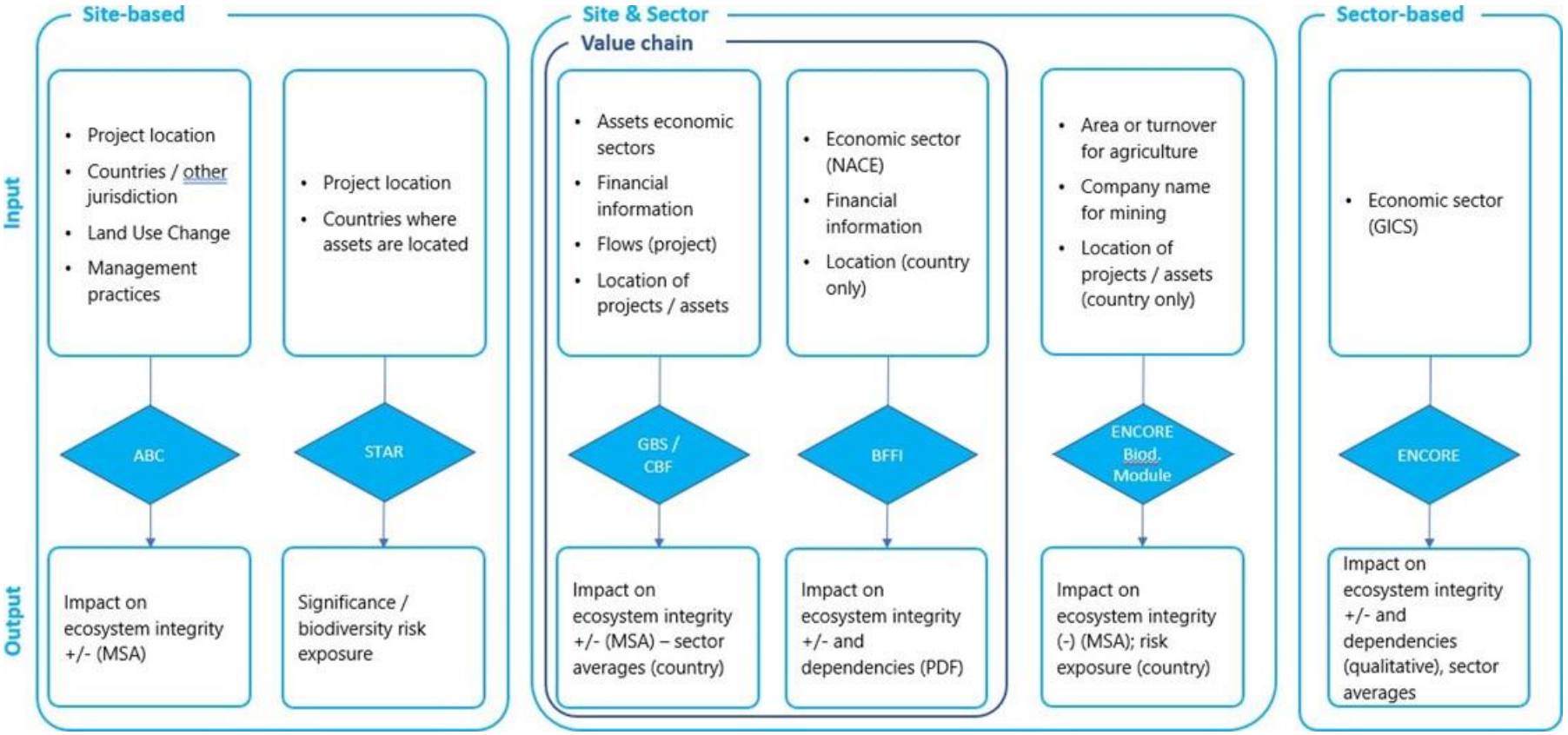

Figure 1: Comparison across metrics regarding scope, input data, and outputs (Source: TBC)

1. INTRODUCTION

1.1. CONTEXT

In June 2022, the Agence Francaise de Développement (AFD) released the letter of consultation and terms of reference (ToR) for the development of a "Test Plan for the Comparative Analysis of Biodiversity Measurement Approaches for Financial Institutions" (the Study) as part of the biodiversity research and knowledge programme "Encouraging the development of a pro-nature economy" (ECOPRONAT). The Biodiversity Consultancy (TBC) was assigned by AFD to undertake this Study.

This Study recognises that there is no one, simple approach to measuring nature-related risks and impacts of a project or a business. Various initiatives are underway to develop approaches that may be used, with some consistency, across a range of sectors, types of assets/ investments, and ecological contexts. Some of these approaches are now reaching maturity while others are still under development. As an illustration, a useful analysis of the scope, use case, and level of maturity of various nature footprinting approaches was published (as an update to a previous version) in January 2022 by Finance for Biodiversity[2].

Existing approaches differ in scope, use case, target user and methodology. Some focus on the footprint of an organisation or an investment portfolio on nature (what would be the equivalent area of pristine ecosystem degradation due to the organisation's activity?), others on species extinction risks (to what extent does an activity improve, or worsen, the level of conservation of sensitive species?). Other approaches aim to map impacts and dependencies on nature for a given sector. The approaches also show a varying degree of spatialisation, some allowing assessment of risks or impacts at a given location, others providing aggregate estimates at country, regional, or global level.

Financial organisations presently collect and use data in various ways. PDBs in particular face pressures to reduce transaction costs, including data collection requirements that clients may view as burdensome. The potential work burden of different measurement approaches regarding data identification, organisation and analysis is thus an important factor to consider for financial institutions.

1.2. SCOPE AND OBJECTIVES

This report is extracted from a study to prepare a comparative analysis of six biodiversity metrics submitted to the French Development Agency (AFD) and the European Bank for Reconstruction and Development (EBRD) by the consultancy firm The Biodiversity Consultancy.

This report aims to share practical and reusable information for all PDBs considering the use of these biodiversity metrics in the future, particularly in relation to the TNFD Nature related Risks and Opportunity Management and Disclosure Framework.

The six biodiversity metrics selected and analysed as potentially relevant to informing banks' investment decisions and reporting are:

- CBF – Corporate Biodiversity Footprint
- BFFI – Biodiversity Footprint for Financial Institutions
- STAR – Species Threat Abatement and Restoration metric
- GBS – Global Biodiversity Score

[2] Finance for Biodiversity, Guide on biodiversity measurement approaches, October 2022 https://www.financeforbiodiversity.org/wp-content/uploads/Finance-for-Biodiversity_Guide-on-biodiversity-measurement-approaches_2nd-edition.pdf (note that this analysis was not specifically tailored to use cases from PDBs /development finance).

- ENCORE – Exploring Natural Capital Opportunities, Risks and Exposure
- ABC-map – Adaptation, Biodiversity and Carbon mapping tool

Although referred as **metrics** throughout the document, these encompass **tools** (including softwares and platforms such as ABC-Map), **metrics** (quantitative measures, such as STAR) and **measurement approaches** (a process to obtain a metric, such as BFFI).

To account for differences in data availability across projects, we propose two approaches for using the metrics:

- **High-level assessment:** this is a rapid ex-ante assessment that provides general guidance on the relative importance of projects in terms of nature impacts, dependencies, risks and opportunities.
- **In-depth assessment:** This is a more detailed ex-post assessment, which is likely to be time and budget intensive, and which aims to provide project-specific results based on precise location of operations, information about supplies purchased through the value chain and pressures on nature (e.g., water and energy consumption, pollution emission).

ENCORE provides only high-level assessment, whilst STAR, CBF, GBS and BFFI are flexible to both approaches, depending on the coverage and granularity of input data. ABC-Map requires more granular spatial information to provide meaningful results and therefore is only included in the high-level analysis.

1.3. LINKS WITH THE TNFD

The Taskforce on Nature-related Financial Disclosures (TNFD) is a market-led initiative to develop and deliver a risk management and disclosure framework for organisations to report and act on evolving nature-related risks and opportunities. The TNFD aims to support a shift in global financial flows away from nature-negative outcomes and towards nature-positive outcomes. The TNFD is a science-based initiative led by a 40-strong central taskforce of representatives from finance, corporate businesses and market service providers and supported by government and multilateral organisations.

In November 2022, the TNFD released the third iteration of its beta framework (v0.3), including significant updates in the guidance for risk, impact and dependencies assessment and disclosure. The TNFD beta framework is structured around three main parts:

- an outline of fundamental concepts and definitions
- draft disclosure recommendations for nature-related risks and opportunities
- a nature **risk and opportunities assessment approach (LEAP).**

In March 2022, the TNFD also released a discussion paper "*A Landscape Assessment of Nature-related Data and Analytics Availability*". The paper highlights that high-quality data, analytics, metrics and indicators are an essential foundation to assess nature-related impacts, dependencies, risks, and opportunities.

The metrics in this study are particularly relevant to the **Locate and Evaluate steps** in TNFD's LEAP approach. More specifically, STAR can inform biodiversity significance, which is one of the criteria to identify priority locations in the Locate phase, whilst the other five tools can support the Evaluate phase with assessment of nature impacts. ENCORE, CBF and BFFI can also provide information on nature-related dependencies projects in the portfolio. This study try to contribute to the practical implementation of the TNFD framework for PDBs. It is worth mentioning that the final draft framework that will continue to incorporate feedback from market participants and bring in additional framework components is now available (V0.4), and the launch of the full framework (v1.0) for market adoption is expected for September 2023.

2. METHODOLOGY

2.1. GENERAL CONSIDERATIONS

The study takes a neutral approach to measurement approaches and metrics. Different approaches may be best fit for purpose considering the nature of the project, asset or portfolio to be assessed, and the objectives of the assessment. The study allows identification of the conditions under which a particular approach (or set of approaches) is best suited to inform the decisions of development finance institutions.

Measurement approaches and metrics must be scientifically robust and grounded in credible ecological approaches, while taking into account inevitable practical constraints (e.g. resources available, access to value chain data, access to field-level data, access to aggregate portfolio-wide data, etc). Application of a given measurement approach should withstand expert scrutiny and peer review.

An assessment of the limitations, opportunities for improvement and risks related to each particular approach considered is provided in appendix.

2.2. GENERAL APPROACH

The design of an assessment must consider a number of key aspects for metrics:

- Input data requirements and type of outputs provided
- How metric assess both 'negative' aspects (impacts / risks) and 'positive' aspects (e.g. conservation outcomes, improvement of ecosystem integrity, nature-positive business enhancement)
- Whether metrics are mainly applicable to a specific sector or have more general application
- The potential for application at different scales and for aggregation at site, landscape or wider portfolio level.
- How well the selected measurement approaches could potentially deliver the TNFD requirements for nature- related dependencies, impacts, risks and opportunities assessment.

2.2.1 Objectives

In terms of the objectives, metrics were evaluated according to their potential to address the following:

- Different dimensions of biodiversity (Ecosystem intactness; ecosystem services; species diversity; genetic diversity)
- Nature risks and opportunities
- Dependencies on nature
- Positive impacts on nature
- Sector-related impacts on nature
- Impacts of land use change on nature
- Upstream impacts of value chains on nature
- Applicability and useability for MDB purposes, considering capacity constrains

2.2.2 Input data

With regards to the input data, it is important to understand which ones are mandatory or optional for a detailed analysis. This is particularly important when examining publicly available data and evaluating the need for additional data for a more detailed analysis. The following types of information were considered:

- Spatial data
- Management practices
- Financial information
- Purchases

2.2.3 Selection of projects to be treated

The choice of projects to deal with metrics is not neutral, and it seems preferable to consider the adequacy of metrics under consideration with the information that projects can provide.

Projects' beneficiaries and focal points should be contacted by PDBs teams to check about the availability and accessibility of input data to develop the assessment. Table 1 describes the data to request to projects' focal points and beneficiaries to implement an In-depth Assessment. From the responses obtained, the PDBs team should choose which projects can only be treated at high level and which projects have enough data to be treated using the in-depth approach.

Table 1 : Data to implement and In-depth Assessment

Topic	Data
1. Location of interventions:	1.1 Regional or local jurisdiction
	1.2 Geographic coordinates
	1.3 GIS Polygons defining boundaries of area of intervention.
2. Extent of intervention	2.1 Area in hectares
3. Changes in land cover for each area of intervention (e.g. conventional irrigated agriculture was converted to agroforestry; natural grassland converted to road; pasture restored to forest):	3.1 Land cover type before change
	3.2 Land cover type after change
	3.3 Area subjected to change
4. Volume of water (m3) consumed by project's activities at each location per year	4.1 Quantity withdrawn and source (defined with type of source e.g., surface/ ground water and country location),
	4.2 Quantity discharged and direction (defined with type of source e.g., surface/ ground water and country location),
5. Energy consumption	5.1 Quantity (kWh)
	5.2 Location

Topic	Data
6. Pollution emission to atmosphere per year	6.1 Substance
	6.2 Volume (m3) and concentration (or weight of undiluted substance)
7. Pollution emission to water bodies per year	7.1 Substance
	7.2 Volume (m3) and concentration (or weight of undiluted substance)
	7.3 Type of water treatment applied
8. GHG emission	8.1 tonnes of CO2 equivalent per year
9. Raw materials purchased by the project per year:	9.1 Type (description of the material. E.g. cement, fertilizer (specify which), metals (which), food for livestock (based on what raw material)
	9.2 Volume of each raw material (tonnes)
	9.3 Source location of each raw material (sourcing country, not manufacturing country)
10. Produced waist	10.1 Amount (tonnes)
	10.2 Type (hazardous or not)
	10.3 Treatment type

Lessons from the study shows that most projects do not easily have the necessary data to carry out an in-depth study with the precise data requested and almost no available time to engage in such effort. The transaction costs of obtaining the input data for the in depth are high for some projects, because a long process of tracking down and examining reports would be necessary.

Data collected both ex ante in ESD due diligence and ex post in annual environmental and social monitoring proved to be useful. The E&S data are most easily found with the PDBs, who have readily on file all the due diligence and monitoring reports on projects. However, PDBs often have very limited personal capacity to be involved in a more intensive data collection process.

Obtaining specific data on supply chain seems to be the greatest challenge to perform a deeper assessment of the footprint. This type of information is generally partial or in some cases unavailable for the projects. Engaging with project beneficiaries is likely to be time-consuming and not practical.

A high-level approach, based on easily gathered data, can be adequate to avoid increasing burden on teams and clients. However, when geolocation data is available for projects, there is a good opportunity to perform an in-depth assessment with STAR and ABC-Maps.

2.2.4 Applicability

Considering the main features of the different project types, metrics should be classified according to their relevance and applicability to each specific project under review (e.g., some metrics might be specific to a few economic sectors, other provide more useful results if there is a supply chain involved, etc.). Three classes of applicability can be used to do this task:

- **Relevant and suitable for the assessment** – objectives and model assumptions of metric are appropriate for the project. Input data are available, in either a preferred or alternative form.

- **Relevant but not suitable for the assessment** – objectives of the metric are appropriate but model assumptions or available input data do not allow to explore the full potential of metric.

- **Not applicable** – objectives of the metric are not appropriate for project assessment, for example because the economic sector of the investment is not covered by the metric, or the metric does not estimate positive impact.

A decision tree (Appendix 2) was developed to support PDB's teams in framing future portfolios and project assessments.

The study identified **three potential approaches to applying and comparing metric results** on a selected set of PDB's projects. These approaches are:

1. a **single-project metrics assessment**, which provides an approach to apply all six metrics for one carefully selected project with good data availability (Section 3);

2. a **high-level assessment**, which proposes a comprehensive approach for applying the metrics on projects based on easily obtainable data of low granularity (Section 5); and

3. an **in-depth assessment**, which proposes a detailed approach based on more granular spatial data and/or supply chain data, that can only be conducted for projects that have sufficient information available (Section 6).

Costs should then be estimated based on the following assumptions: some tasks can be done internally at no additional cost.

Some need external support which was estimated at and average fee of 1,600 EUR/day

License or subscription cost should be estimated for each metric when relevant.

3. SINGLE-PROJECT METRICS ASSESSMENT

This protocol assess a given project using all six metrics to <u>compare</u> the process of gathering and inputting the data and the expected results.

This assessment can be useful to better understand the potentialities and limitations of each metric applied to the same project. In order to test all metrics using the same project, it is important that all input data required across the six metrics are available, including geographic, financial and supply chain information.

3.1. KEY ASPECTS OF METRICS

Table 2 describes important aspects related to the scope, input and results provided by each tested metric. Essentially, **STAR** is the only metric that estimates exposure to species extinction risk, whilst **ABC-Map** is specific to agriculture, forest and other land uses (AFOLU) sectors and is the only metric that estimates ex-ante and ex-post impacts of land use change, incorporating changes in management practices. **ENCORE** can qualitatively estimate impacts and dependencies on ecosystem intactness and ecosystem services of a given economic sector or sub-industry. **CBF, GBS and BFFI** perform a more detailed assessment, estimating impacts of the value chain, considering the broad location of operations and suppliers, and exploring impacts related to the different drivers of nature loss in terrestrial and freshwater realms (also marine for BFFI). Recent developments of GBS and CBF can estimate dependencies using ENCORE database, and therefore results should be considered as a high-level assessment. Further details about each evaluated metric are provided in Appendix 1.

Table 2: Comparing metrics – objective of the assessment

Feature	STAR	ABC-Map	ENCORE	GBS	CBF	BFFI
Ability to **rank different projects** in relation to overall negative/positive impacts	Yes, but restricted to species extinction risk	Yes (MSA), but restricted to land-use impacts	Yes, but restricted to five categories	Yes (MSA)	Yes (MSA)	Yes (PDF)
Ability to **compare absolute scale** of negative/positive impacts across different projects	No	Yes (MSA)	No	Yes (MSA), especially if value chain is relevant	Yes (MSA), especially if value chain is relevant	Yes (PDF), especially if value chain is relevant
Ability to **assess a net biodiversity impact**	No	Yes (MSA)	No	Yes (MSA)	Yes (MSA)	Yes (PDF)
Ability to **incorporate spatial information**	Yes	Yes	Biodiversity module incorporates country	Yes, but restricted to country or continent	Yes, but restricted to country or continent	Yes, but restricted to country or continent
Ability to **incorporate changes** in relevant pressures on nature (including sensitivity to distinguish different management practices)	No	Yes, land use change and management practices	No, sectoral averages	No, MSA score is obtained from Globio	No, MSA score is obtained from Globio	Yes
Ability to **identify priority elements for mitigation**	Yes, Red List species and threats	Yes, but restricted to land use / management practices	Yes, high level	Yes, impacts disaggregated by realm / drivers of nature change	Yes, impacts disaggregated by realm / drivers of nature change	Yes, impacts disaggregated by realm / drivers of nature change
Ability to assess **supply chain** impact	Yes, but only if locations of suppliers are available	No	Yes, but partial and not disaggregated from direct operations	Yes, Scope 1, 2, and 3 upstream	Yes, Scope 1, 2, and 3 upstream and some downstream impacts	Yes, Scope 1, 2, and 3 upstream
Dimensions of Biodiversity covered	Species diversity	Ecosystem intactness	Ecosystem intactness Ecosystem services	Ecosystem intactness Ecosystem services	Ecosystem intactness Ecosystem services	Ecosystem intactness Ecosystem services

PDF unit : **Potentially Disappeared Fraction** of species (see BFFI in Appendix 1 for precise definition)
MSA unit : **Mean Species Abundance** (see GBS in Appendix 1 for precise definition)

3.2. ASSUMPTIONS

The following assumptions are considered for the metrics test:

- A single use case, based on one project, is budgeted as a reference;
- The scope of the assessment involves only input data on direct operations (equivalent to the high-level assessment described in Section 4), for ENCORE, STAR, CBF, GBS and BFFI;
- Since ABC-Map cannot be assessed at high level, the test proposed here need to follow the in-depth assessment protocol, in Section 5;
- Likewise, SimaPro (the software recommended by Pre Sustainability to run BFFI) need to follow the in-depth assessment protocol;
- If the project involves operations in several sites, the study consider that a maximum of 10 sites are assessed in this phase. However, it is essential that the same sites are used for all six metrics to compare the process of gathering and inputting the data and the expected results;
- Impacts of value chain will be modelled by the tools rather than based on purchase of raw materials; and
- Subscription to CBF covers only one project.

3.3. STEPS OF METRICS ASSESSMENT

3.3.1 Select use case and gather input data

A single and carefully selected use case is needed to provide a meaningful comparison across metrics. **The study recommend selecting a project in AFOLU sector that has spatially explicit location data** (polygons describing direct operations), that will provide essential information to evaluate all metrics. The following data should be gathered:

- Economic sector
- Polygons describing extent and location of direct operations
- Land use cover before and after the project implementation

3.3.2 Contract with data providers

Some of the metrics are provided exclusively by their developers whilst others can be run by accredited institutions or independently:

- To run STAR and CBF it is necessary to contact data providers directly. STAR is provided exclusively by IBAT and CBF by Iceberg Data Lab.
- To run BFFI and GBS, software licenses are required, and GBS can only be run by accredited institutions.

In summary, the following actions are necessary:

- Subscription to IBAT (STAR)
- Subscription to IDL (CBF)
- SimaPro License (BFFI)
- GBS License (GBS)

3.3.3 Run the metrics assessment

- This step will involve multiple service and data providers. After all licenses and subscriptions are in place, a service provider can standardize the operationalization of the metrics assessment.

- **ENCORE**, **ABC-Map**, **Bioscope (BFFI)** and **SimaPro (BFFI)** can be directly run by a **service provider**

- **STAR** and **GBS** can be run by the **developers** or by **accredited service providers**

- **CBF** is the only metric that is run exclusively by its **developer**, Iceberg Data Lab (IDL). However, IDL can provide results but not the advisory services related to data interpretation, development of targets or strategies, so an independent **service provider** is also needed.

3.3.4 Compare results

- It is important to consider that the metrics have different scopes and will provide different types of results (Figure 1):

- STAR is the only metric that informs potential species extinction risk exposure and opportunities to reduce extinction risk through threat reduction or restoration

- ENCORE provides a qualitative assessment of impacts and dependencies (but specifically for agriculture projects, also an estimate of the footprint measured in MSA)

- ABC-Map provides an estimate of the footprint related to the change in land use type, measured in MSA

- CBF, GBS and BFFI provide estimates of the footprint related to direct operations and the value chain upstream, measured either in MSA or PDF.

3.4. TIMELINE AND EFFORT

An estimated total of **33 days** will be necessary to complete the metrics comparative assessment, for one study case in the AFOLU sector (Table 3). That includes 3 days of PDBs time for data collection and 30 days of a service provider to standardize data, run the metrics and analyse results.

Table 3: Estimated timeline to complete a single project metrics (comparative) assessment

Tasks	Days Bank*	Days ext.*	Months of assessment		
			1	2	3
1. Data collection					
1.1. Obtain sample data on extent and location for STAR, ABC-Map, Biodiversity Module (ENCORE) and Value Chain tools	1	0.5			
1.2. Obtain and standardize industry names		0.25			
1.3 Obtain financial information	2	0.25			
2. Qualitative analysis of impacts and dependencies on ENCORE					
2.1. Upload to platform (general and Biodiversity Module)		0.5			
2.2. Interpret results		1			
3. Analysis of exposure to species extinction risks on STAR					
3.1. Submit Data to IBAT platform / Extract data		0.5			
3.2. Download reports and spatial data		0.5			
3.3. Interpret results		1			
4. Analysis of impacts of land use change in ABC-Map					
4.1 Draw polygons and input land use data to ABC Map		1			
4.2 Interpret results		1			
5. Analysis of impacts of direct operations and value chain on GBS					
5.1. Standardize and fill GBS input data		0.5			
5.2. Run GBS		0.5			
5.3. Interpret results of GBS		2			

6. Analysis of impacts of direct operations and value chain on BFFI					
6.1. Standardize and fill Bioscope input data (BFFI)		0.5			
6.2. Run Bioscope (BFFI)		0.5			
6.3. Interpret results of Bioscope (BFFI)		2			
6.4. Standardize and fill Simapro input data (BFFI)		0.5			
6.5. Run Simapro (BFFI)		2			
6.6. Interpret results of Simapro (BFFI)		2			
7. Analysis of impacts of direct operations and value chain on CBF					
7.1. Submit data to Iceberg DataLab (CBF)		1			
7.2. Interpret results of CBF		1			
8. Consolidating and Reporting					
8.1. Compare results		3			
8.2. Report		8			
Total	**3**	**30**			

*Days Bank = days onf internal bank team
Days ext.=days for external consultants

3.5. **BUDGET**

A budget of 82,200 EUR was estimated to run the metrics assessment, including subscription costs and external service provider time at an average rate of 1600 EUR/day. The budget could therefore increase or decrease based on the service provider's actual daily rates.

Table 4: Estimated budget to complete a single project metrics assessment

Metrics: ENCORE, ABC-Map, STAR, GBS, CBF, BFFI	
Requirements	Cost
Subscription to GBS	€1,500
Subscription to IBAT	€25,000
Subscription to Iceberg DataLab	€2,000
Subscription to SimaPro	€5,700
Consultancy – 30 days at average rate of €1,600.00 / day	€48,000
Total	**€82,200**

4. HIGH LEVEL ASSESSMENT

This protocol is a comprehensive approach for applying five metrics (all except ABC-Map) on multiple projects based on easily obtainable data of low granularity, and then to compare the results of the different metrics used. This approach provides an estimate for a larger number of projects with reduced transaction costs, but only approximate impacts and dependencies results. It is recommended for comparing and screening projects that would potentially require more in-depth analysis compared to others.

For projects with more detailed information available, the in-depth assessment described in section 5 can be carried out if desired to obtain more precise estimates of their positive and negative impacts.

4.1. ASSUMPTIONS

- The high-level assessment is based on the direct operation and any relevant result on the impact of the value chain is based on country or continental averages flow of raw materials.

- Five out of the six metrics in scope can be used in the high-level assessment (all except ABC-Map), and only projects that have the required set of inputs for each metric should be included in each assessment.

4.2. OVERVIEW

A high-level assessment requires the same level of information across all projects:

- **revenue or investment** (Euros);

- **economic sector** (e.g. Renewable Electricity);

- **geographic location of direct operations** (e.g. Country).

Multiple metrics can be applied and will provide results comprising quantitative or qualitative estimates of their nature impacts, dependencies, risks and opportunities. To determine which projects to include in each metric assessment, PDBs should consider the sector and objectives of the project, the data available for input and the purpose of each metric.

A major difference between project types is the **relevance of the value chain** for the assessment. For instance, direct operations of **agriculture** and **infrastructure projects** have higher impact than their supply chain. In contrast, other projects such food and beverages, and consumer goods, among others, present more **complex supply chain** that often impose higher impact to nature compared to their direct operations.

Once the metrics are applied, the results need to be **sense checked** against each other (i.e. how does the results obtained from different metric on the same projects compare?). Information about risks and impacts described in the Environmental and Social Impact Assessment (ESIA) and other available documents can also be used as benchmark to sense check results and to evaluate the value of each of the metrics used in the high-level assessment.

The steps of the high-level assessment comprise:

1. Calculate metrics using sectoral averages, overall financial information, and low granularity spatial data (e.g. countries, provinces), using already available project data (selected metrics are: ENCORE, STAR, CBF, GBS, BFFI (ABC-Map is not included in the high level assessment since it requires detailed spatially explicit data from each project site)

2. Rank projects by overall positive and negative impacts and dependencies

3. Rank projects by exposure to species extinction risk

4. Identify and rank projects by impacts across drivers of nature change and realms

5. Consolidate results in terms of interface with nature, impacts and dependencies.

4.3. METRICS ASSESSED

4.3.1 ENCORE

Objective of the assessment

The objective is to screen a portfolio of projects or assets to **qualitatively assess impacts and dependencies**. Agriculture projects can also be assessed using the Biodiversity module of ENCORE, that provides a quantitative analysis of risks and impacts, based on sectoral country averages. Results are presented as ratings on ENCORE and as quantitative estimate of footprint (in MSA.km^2)[3], in the Biodiversity Module.

Portfolio composition

Not all projects can be assessed with ENCORE due to the fact that the corresponding economic sector is sometimes missing in the ENCORE database. Future developments of ENCORE could include projects with a positive impact on nature.

The Biodiversity Module of ENCORE can be used as a complement to the economic sector assessment, to analyse the agriculture projects, as long as information about the extent of land covered by agriculture and used by project's beneficiaries is available.

Required expertise

No specific technical expertise is required.

Tasks for applying the metric

ENCORE is an easy-to-use metric that can be used directly by PDBs teams or by a consultancy. The time estimates provided include setting up the analysis, data gathering and industry category standardization for both ENCORE spreadsheets and the Biodiversity Module.

- Task 1: Gather a list of industries involved in each project or asset. Gather information on location at country level and revenue or extent for agriculture projects.

- Task 2: The materiality rating for potential impacts and dependencies are obtained from the platform or spreadsheet available from ENCORE website. Biodiversity Module assessment for agriculture projects will require information regarding country and cropland / pastureland area to be uploaded to the platform.

- Task 3: Identify what impacts and dependencies are relevant based on scores and (for agriculture projects) the rough estimate of MSA provided by the biodiversity module. Explore results and group projects according to most relevant nature-related dependencies and impacts to environmental assets and ecosystem services. Identify sectors, locations (at least at the country level) and organize outputs into graphs and maps.

- Task 4: Report results: qualitative assessment of impacts, across drivers of nature change, and qualitative assessment of dependencies. Identify specific gaps and limitations to assess the sectors in scope (e.g. is value chain accounted for? Are there other relevant impact pathways not addressed by the analysis?).

[3] MSA stands for Mean Species Abundance, see GBS in Appendix 1 for precise definition.

Table 5: ENCORE – High level assessment estimated effort for a set of 5 projects.

ENCORE – estimated effort	
Task	Days Bank or Consultancy
1. Data cleaning	0.5
2. Upload to platform (incl. Biodiversity Module)	0.5
2. Interpret results	1
3. Report	2
Total	**4**

Estimated cost

The assessment can be performed either in-house or by an external consultancy. The estimated budget provided below accounts for the external consultancy only on a set of five projects.

Table 6: ENCORE – estimated cost for a set of 5 projects.

ENCORE –estimated cost	
Requirements	Cost
Consultancy – 6 days at average rate of €1,600.00 / day	€6,400
Total	**€6,400**

4.3.2 STAR

Objective of the assessment

The objective is to **screen a portfolio of projects or assets to rank them based on potential species extinction risk exposure and opportunities to reduce extinction risk through restoration**.

Portfolio composition

Most projects with location can be assessed and ccuracy of results will depend on granularity of input spatial data.

Required expertise:

GIS experience is needed to interpret spatial outputs.

Tasks for applying the metric

- Task 1: Obtain spatial data for all projects in the portfolio at the most precise scale available ex-ante. STAR is very flexible in terms of spatial granularity, therefore the screening can be performed even when precise locations such as polygons of the area of intervention or geographic coordinates are not available. In this case, locations at province or even country level can provide rough relative estimates of risk exposure or opportunities for conservation.

- Task 2: STAR scores can be obtained either through submission and download of reports or through direct extraction from a geographic information system. Time budgeted for this process includes data cleaning and can be reduced if there is no need to process any spatial data prior to the extraction.

- Task 3: Identify projects with higher risk exposure and higher opportunities for conservation. Benchmark results against global distribution of scores and evaluate contributions of the portfolio in terms of potential gains to nature.

- Task 4: Report results, identify interface with nature regarding species extinction risk, prepare maps and graphs, identify specific gaps and limitations to assess the sectors in scope (e.g. considering the projects in scope, what changes might be expected if more granular data is available?).

Table 7: STAR – High-level assessment estimated effort for a set of 6 projects.

STAR – estimated effort	
Task	Days Consultancy
1. Obtain and clean spatial data	1.5
2. Submit data to IBAT platform and download reports / extract data	0.5
3. Interpret results	1
4. Report	2
Total	**5**

Estimated cost

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the banks teams.

Table 8: STAR – High level assessment estimated cost for a set of 6 projects.

STAR – estimated cost	
Requirements	Cost
Subscription to IBAT	€25,000
Training	-
Consultancy – 5 days at average rate of €1,600 / day	€8,000
Total	**€33,000**

4.3.3 Value Chain Metrics (GBS / CBF / BFFI)

Objective of the assessment

The objective is to assess **the nature-related impacts of a portfolio of projects, including direct operations and upstream value chain**. Although operationally very different, the three metrics have similar objectives and are very flexible to provide results with different granularities, depending on the accuracy of available information.

In order to be able to compare and select one or more of the three metrics, the study recommended running the three assessments in parallel to maximize compatibility in data input and interpretation. If a PDB does not wish to carry out this step of comparing the implementation and results obtained by the three metrics, it is quite possible to choose only one of the three and carry out an evaluation with only one of them.

The high-level assessment proposed here is based on financial information used to estimate impacts of direct operations and model impacts of the value chain upstream (all metrics) and downstream (only CBF for now), using external flow models such as Exiobase.

Portfolio composition

All projects with investment amount, location and economic sector can be assessed by the three metrics, even though they are more relevant for secondary and tertiary sectors (i.e. no agriculture, mining, etc), when a significant part (or often the majority) of the impact is related to the value chain upstream. Accuracy of results will depend on industry type and location (some industries and some localities are better inventoried) and availability of information on purchases, including volumes of raw materials and source location.

Required expertise

- CBF analysis is completely ran by Iceberg DataLab, but additional technical expertise with footprinting analysis might be necessary to make the most out of the results.

- GBS can either be ran by CDC Biodiversité or other accredited consultants.

- Likewise, BFFI approach can be implemented by Pre-Sustainability or by an independent consultant, experienced in Life Cycle Analysis (LCA) and metrics, including Bioscope, developed by Pre, or other LCA metrics.

Tasks for applying the metric

- Task 1: Obtain financial information from the six projects. Data on total investment, location (at country level) and economic sector can provide rough estimates of positive and negative impacts. The high-level assessment should not include information on the value chain.

- Task 2 and 3: Fill GBS standardized input sheets and have the analysis run by an accredited analyst.

- Task 4: Sense-check results against benchmarks obtained from publicly available reports, interpret results, prepare graphs comparing results across:

    - Three scopes: direct operations, GHG emissions and value chain
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.

- Task 5 and 6: Upload input data to Bioscope platform and run the analysis.

- Task 7: Sense-check results against benchmarks, interpret results, prepare graphs comparing results across:

    - Three scopes: direct operations, CHC emissions and value chain
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.

- Tasks 8: Fill Iceberg DataLab standardised input sheets.

- Task 9: Sense-check results against benchmarks, interpret results, prepare graphs comparing results across:

    - Three scopes: direct operations, CHC emissions and value chain
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.

- Task 10: Report results, identify positive and negative impacts across direct operations and modelled value chain, identify impact pathways across the five drivers of nature loss, prepare maps and graphs, evaluate consistency across the metrics, identify specific gaps and limitations to assess the sectors in scope.

Table 9: GBS, CBF and BFFI – High-level assessment estimated effort for a set of 6 projects

GBS, CBF, BFFI - estimated effort		
Task	Days Bank	Days Consultancy
1. Obtain financial information	2	1 (review)
2. Standardize and fill GBS input data		1
3. Run GBSFI		1
4. Interpret results of GBS		5
5. Standardize and fill Bioscope input data (BFFI)		0.5
6. Run Bioscope		1
7. Interpret results of Bioscope		5
8. Submit data to Iceberg Datalab		0.5
9. Interpret results of CBF		5
10. Report		10
Total		**30**

Estimated cost

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the bank teams.

Table 10: GBS, CBF and BFFI – High-level assessment estimated cost for a set of 6 projects

GBS, CBF, BFFI – estimated cost	
Requirements	Cost
Subscription to GBS	€1,500
Service Iceberg DataLab	€12,000
Consultancy to run GBSFI and BFFI - 32 days at average rate of €1,600 / day	€51,200
Total	**€64,700**

The input data and hence the time investment for PDBs will be very similar for running either GBS, CBF or BFFI. All three metrics will require financial information, economic sector and source localities (optional). CBF is entirely processed by Iceberg DataLab, whilst GBS and BFFI can be ran by independent consultants (accreditation needed for GBS). Since BFFI is an approach, rather than a metric, it does not necessarily have to be ran on Bioscope, therefore other LCA metrics can also be used to obtain similar results describing ecosystem integrity loss / gains.

4.4. STREAMLINING DATA COLLECTION AND REPORTING

In order to increase efficiency and reduce burden over PDBs teams during data collection and cleaning, some of the processes described above can be aggregated, reducing the total budget. This is possible because some of the input data are the same across all metrics. The following processes can be streamlined:

- **Spatial data:** Coordinates and polygons used in STAR should be converted to location data necessary to input to the value chain metrics, saving time needed for data collection;

- **Industry names** should be standardized once and converted across different standards using available conversion tables, saving time.

- **Aggregating the assessments into one report** should also increase efficiency and reduce budget for the high-level assessment phase. All contextualization of impacts, dependencies and risk can be aggregated, as well as the geographical context and interpretation regarding pressures and drivers of nature loss.

4.5. TIMELINE FOR A FULL COMPARATIVE HIGH LEVEL ASSESSMENT

The timeline estimated for undertaking this high-level assessment comparing five of the six metrics for a set of six projects, assuming that previous recommendations to streamline data collection and reporting are considered, is presented in Table 11.

Table 11: Estimated timeline to complete an high-level assessment on a set of 6 projects

Tasks	Days Bank*	Days ext.*	Months of assessment			
			1	2	3	4
1. Data collection						
1.1. Obtain country-level data on extent and location for STAR, Biodiversity Module (ENCORE) and Value Chain tools	4	3				
1.2. Obtain and standardize industry names		0.5				
1.3 Obtain financial information	2	0.5				
2. Qualitative analysis of Impacts and Dependencies on ENCORE						
2.1. Upload to platform		0.5				
2.2. Interpret results		1				
3. Analysis of Exposure to Species Extinction Risks on STAR						
3.1. Submit Data to IBAT platform / Extract spatial data at country-level		0.25				
3.2. Download reports and spatial data		0.25				
3.3. Interpret results		1				
4. Analysis of Impacts of Direct Operations and Value Chain on BFFI, CBF, GBS						
4.3. Standardize and fill GBS input data		1				
4.4. Run GBS		1				
4.5. Interpret results of GBS		5				
4.6. Standardize and fill Bioscope input data (BFFI)		0.5				
4.7. Run Bioscope (BFFI)		1				
4.8. Interpret results of Bioscope (BFFI)		5				
4.9 Submit data to Iceberg DataLab (CBF)		0.5				
4.9. Interpret results of CBF		5				
5. Consolidating and Reporting						
5.1. Compare results		3				
5.2 Report		12				
Total (five metrics on six projects)	**4**	**42**				

*Days Bank = days onf internal bank team
Days ext.=days for external consultants

4.6. CONSOLIDATED BUDGET

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the PDB teams.

Table 12: High level assessment consolidated budget for a set of 6 projects

Tools: ENCORE, STAR, GBS, CBF, BFFI	
Requirements	Cost
Subscription to GBS	€1,500
Subscription to IBAT	€25,000
Service Iceberg DataLab	€12,000
Consultancy – 42 days at average rate of €1,600 / day	€67,200
Total (five metrics on six projects)	**€105,700**

5. IN-DEPTH ASSESSMENT

This protocol is a detailed ex-post assessment approach for applying five metrics (all except ENCORE) on multiple projects, which aims to provide project-specific results based on precise location of operations, information about supplies purchased through the value chain and pressures on nature (e.g., water and energy consumption, pollution emission).

An in depth assessment might not be feasible for longer portfolios, since it requires a very high level of engagement with companies and projects developers, as well as access to detailed procurement data. Furthermore, policy-based projects are especially challenging to assess, due to limitations on the ability to quantify direct impacts on the ground. If an in-depth project-level assessment is required, the study recommends selecting only the combinations of projects and metrics that will provide additional useful information.

5.1. ASSUMPTIONS

- The in-depth assessment can complement rather than replace the high-level assessment.
- Although recent developments of GBS and CBF provide estimates of dependencies, they are both derived from ENCORE and will not provide further information, compared to the results obtained in the hight level assessment.
- Performing an in-depth assessment in STAR or ABC-Map requires polygons describing the actual project areas.
- Performing an in-depth assessment in any of the value chain metrics (CBF, GBS, BFFI) requires data on purchase of raw materials, water and energy use, and waste management.
- ENCORE is not included in the in-depth assessment since it provides qualitative scores of impacts and dependencies based on global averages for a range of economic sectors. Results for each economic sector will be identical regardless of the location or any sustainability practices that might be implemented for a specific project, therefore no additional information will be provided by and in-depth assessment, compared to the rapid assessment.

5.2. OVERVIEW

ABC-Map is only included in the in-depth assessment (and not the high-level one), since this metric can only provide meaningful results using polygons that describe project-specific location. This is because ABC- Maps estimates the impacts of changes in land use and management practices for AFOLU sector, which cannot be assessed at low levels of granularity.

STAR involves spatially explicit analysis and is considered a flexible tool regarding the level of granularity. For the in-depth assessment, project-specific spatial data should be incorporated.

Additionally, if location data on supply chain upstream is available for any project, it is possible to perform an additional analysis, to estimate exposure to species extinction risk or opportunities to restoration related to projects' suppliers. Therefore, spatial data gathered for applying other metrics can also be used to calculate STAR score. For this reason, in the in-depth assessment, STAR is the last metric to be applied.

The three **value chain metrics (CBF, GBS, and BFFI)** can potentially be applied in a deeper level. An in-depth assessment will examine the impact of the value chain based on project data, rather than modelled material flows. Input data should then incorporate an inventory of quantities of materials actually used / purchased by the company or project over the course of one year. This data was rarely available in the documentation of the projects examined during the study and could only be obtained from the developer procurement team. For more precise results, it is useful to also inform pressure data, comprising land-use, water consumption, and pollution.

Gathering detailed data on value chains is an expensive and time-consuming process that might be feasible for a subset of projects, that can be selected from the results of the rapid assessment. Projects in AFOLU sector concentrate most of their impact in their direct operations, compared to their value chain. Therefore, the benefits of incorporating inventory data on the analysis are not

significant. On the other hand, infrastructures and other projects involving a complex supply chain would benefit from an in-depth assessment, since the footprint associated with the supply chain can be even greater than the direct operations.

Overall, the steps of the in depth assessment comprise:

- Engage with project team to gather detailed information on the supply chain, water and energy use, and waste management
- Calculate metrics using financial information and accurate data of purchased materials obtained from projects developers
- Calculate metrics using precise spatial data, including source location of materials in the value chain (if possible)
- Selected metrics: ABC-Map, STAR, CBF, GBS, BFFI
- Rank projects by positive and negative impacts and by dependencies, including value chain
- Rank projects by exposure to species extinction risk
- Identify and rank projects by impacts across drivers of nature change and realms
- Evaluate the benefits in terms of accuracy of performing an in depth assessment, compared to the rapid assessment
- Consolidate results linking with the LEAP approach of TNFD

5.3. METRICS ASSESSED

5.3.1 ABC-MAP

Objective of the assessment

Footprint (in MSA.km2) of land use change and management practices, and natural capital value for a given area and year.

Portfolio composition

Projects with specific location data and concerning agriculture, forestry and other land use sectors are particularly suitable for the use of ABC-Map.

Required expertise

Basic GIS experience needed to define area of interest and interventions.

Tasks for applying the metric

- Task 1: Engage with projects developers to obtain polygons of any areas of intervention where a change in nature condition occurred. This includes change in land use or management practices.
- Task 2: For each project, draw polygons of Area of Interest and Intervention. This step is very time consuming and should be feasible for a limited number of projects.
- Task 3: Download reports describing footprint:
    - Area of Intact Biodiversity (AIB), which corresponds to a surface area equivalent of the MSA value. MSA values are calculated for both the baseline and project situation and provides a time series for the AIB.
    - Average Natural Capital per ha (ANC), which corresponds to an average ecosystem service value for one hectare of land within the project intervention area, based on the summed ecosystem service value expressed as natural capital.

- Task 4: Report results, describe positive and negative impacts of land use change across project sites, prepare maps and graphs, identify specific gaps and limitations to assess the sectors in scope.

Table 13: ABC-Map – In depth assessment estimated effort for 2 projects

ABC-MAP – estimated effort		
Task	Days Bank	Days Consultancy
1. Obtain data on extent and location	6*	3 (review)
2. Draw area of interest and interventions on platform		6
3. Download reports and spatial data		1
4. Interpret results		2
5. Report		4
Total (on two projects)	**6**	**16**

*Effort estimated for a total of about 100 locations (polygons) within 2 projects

Cost

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the PDB teams.

Table 14: ABC-Map – In depth assessment estimated cost for 2 projects

ABC-MAP – estimated cost	
Requirements	Cost
Subscription	-
Training	-
Consultancy – 16 days at average rate of €1,600.00 / day	€25,600
Total (on two projects)	**€25,600**

5.3.2 Value Chain Metrics (GBS / CBF / BFFI)

Objective of the assessment

Impacts of a portfolio of assets or projects, including direct operations and upstream value chain. Specifically for asset portfolios, it is possible to integrate other ESG indicators provided by developers or other data providers. Although operationally very different, the three metrics have similar objectives and are very flexible to provide results with different granularities, depending on the accuracy of available information.

In order to be able to compare and select one or more of the three metrics, the study recommends running the three assessments in parallel to maximize compatibility in data input and interpretation. If a PDB does not wish to carry out this step of comparing the implementation and results obtained by the three metrics, it is quite possible to choose only one of the three and carry out an evaluation with only one of them.

The assessment proposed here is based on financial information, purchases, water use, GHG emissions, waste management and any other available data, that will help refining the estimates impacts of direct operations and model impacts of the value chain upstream (all metrics) and downstream (only CBF for now), using external flow models such as Exiobase. Recent developments of CBF and GBS might provide information about dependencies, but results are not expected to be more detailed than those obtained from the high-level assessment using ENCORE.

Portfolio composition

All projects with detailed information can be assessed by the three metrics, even though they are more relevant for secondary and tertiary sectors, when a significant part (or often the majority) of the impact is related to the value chain upstream. Accuracy of results will depend on industry type and location (some industries and some localities are better inventoried) and availability of information on purchases, including volumes of raw materials and source location.

Required expertise

- CBF analysis is completely ran by Iceberg DataLab and technical experience with footprinting analysis might be necessary to make the most out of the results.

- GBS can either be run by CDC Biodiversite or other accredited consultancy.

- Likewise, BFFI approach can be implemented by Pre Sustainability or by an independent consultancy, experienced in Life Cycle Analysis and metrics, including Bioscope, developed by Pre, or other LCA metrics.

Tasks for applying the metric

- Task 1: Obtain input data from the three projects
    - Total investment,
    - Location (at country level)
    - Economic sector
    - Inventory of quantities of materials used / purchased by the company or project over the course of one year
    - Pressure data: water use, energy use and pollution

The time needed to gather, review and standardize data may vary greatly across projects. Especially for complex value chains, up to 10 days might be necessary to pre-process all input data for a single project. Infrastructure projects are potentially less time consuming, so the study suggested an estimated budget considering around 20 days to clean data for three projects mixing infrastructure and other types of projects.

- Task 2 and 3: Fill GBS standardized input sheets and have the analysis run by an accredited analyst.

- Task 4: Sense-check results against benchmarks, interpret results across:
    - Three scopes: direct operations, GHG emissions and value chain, across
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.
    - Prepare graphs comparing results across sectors and location.
- Task 5 and 6: Upload input data to Simapro platform and run analysis
- Task 7: Sense-check results against benchmarks, interpret results across:
    - Three scopes: direct operations, GHG emissions and value chain, across
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.

    Prepare graphs comparing results across sectors and location.
- Tasks 8: Fill Iceberg DataLab standardised input sheets
- Task 9: Sense-check results against benchmarks, interpret results across:
    - Three scopes: direct operations, GHG emissions and value chain
    - Five drivers of nature loss,
    - Terrestrial and aquatic realms.

• Task 10: Report results, identify positive and negative impacts across direct operations and modelled value chain, identify impact pathways across the five drivers of nature loss, prepare maps and graphs comparing results across sectors and location, evaluate consistency across the metrics, identify specific gaps and limitations to assess the sectors in scope.

Table 15: GBS, CBF, BFFI – In depth assessment estimated effort for 3 projects

GBS, CBF, BFFI – estimated effort for three projects		
Task	Days Bank	Days Consultancy
1. Obtain and organize input data (direct operations, purchases and pressures)	12+	18*
2. Standardize and fill GBS input data		4
3. Run GBS		1
4. Interpret results of GBS		5
5. Standardize and fill Simapro input data (BFFI)		4
6. Run Simapro		1
7. Interpret results of Simapro		5
8. Submit data to Iceberg Datalab		1
9. Interpret results of CBF		5
10. Report		10
Total (three metrics on three projects)	**12+**	**54**

* 20 days effort to obtain and organize input data is the minimum, for three low-complexity value chain projects. Budget for in-depth analysis should be recalculated for each project, considering the sector and the need to standardize raw materials to what is covered by Exiobase.

Cost

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the AFD / EBRD teams.

Table 16: GBS, CBF, BFFI – In depth assessment estimated cost for 3 projects

GBS, CBF, BFFI	
Requirements	Cost
Subscription to GBS	€1,500
Subscription to SimaPro	€5,700
Service Iceberg DataLab (in-depth analysis for three projects)	€15,000
Consultancy to run GBS, BFFI, interpret CBF, and consolidate results - 54 days at average rate of €1,600 / day	at least €86,400
Total (three metrics on three projects)	**€133,200**

5.3.3 STAR

Objective of the assessment

Assess species extinction risk exposure and opportunities to restoration for specific project location, including direct operation and, if possible, source location of raw materials in the supply chain.

Portfolio composition

All projects can be assessed, however the analysis will provide more detailed results only for those projects with additional spatial data, compared to the rapid assessment (specifically, ex- post information on location of project activities and spatial information on the value chain).

Required expertise:

GIS experience needed to explore spatial outputs.

Tasks for applying the metric

- Task 1: Obtain spatial data for all projects in the portfolio at the most precise scale possible. STAR is very flexible to spatial granularity, therefore the analysis will complement the rapid assessment if precise locations such as polygons of the area of intervention or geographic coordinates are available. Information on the source location of raw materials in the supply chain can be included at any granularity available for additional assessment of nature-related risk beyond direct operations. For this task, it is advisable to engage with the project developers, that will be able to provide information about raw materials volumes and source location.

- Task 2: STAR scores can be obtained either through submission and download of reports or through direct extraction from a geographic information system. Time budgeted for this process include data cleaning and can be reduced if there is no need to process any spatial data prior to the extraction.

- Task 3: Identify projects with higher risk exposure and higher opportunities for conservation. Benchmark results against global distribution of scores and evaluate contributions of the portfolio in terms of potential gains to nature.

- Task 4: Report results, identify patterns, prepare maps and graphs, identify specific gaps and limitations to assess the sectors in scope (e.g. considering the projects in scope, what changes might be expected if more granular data is available?).

Table 17: STAR – In depth assessment estimated effort for a set of 6 projects

STAR – estimated effort		
Task	Days Bank	Days Consultancy
1. Obtain data on extent and location (as precise as possible and including value chain) – polygons or geographic coordinates[4]	12	4 (review)
2. Submit Data to IBAT platform / extract data		2
3. Download reports and spatial data		1
4. Interpret results		3
5. Report		3
Total (on 6 projects)	**12**	**13**

Cost

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the PDB teams.

Table 18: STAR – In depth assessment estimated cost for a set of 6 projects

STAR	
Requirements	Cost
Subscription	€25,000
Training	-
Consultancy – 13 days at average rate of €1,600 / day	€20,800
Total (on 6 projects)	**€45,800**

5.4. TIMELINE

The timeline estimated for undertaking this in-depth assessment comparing five of the six metrics for a set of six projects **building on the results of the rapid assessment (§4)**, is presented in Table 19.

Table 19: Estimated timeline to undertake the in-depth comparative assessment for a set of six projects, building on the results of the rapid assessment.

Tasks	Days Bank*	Days Ext.*	Months of assessment					
			1	2	3	4	5	6
1. Data collection								
1.1. Obtain and clean precise spatial data	12	6						
1.2. Obtain and clean information on volumes of raw material purchased, source localities, and pressures (water use, energy consumption)	12	18						
2. ABC-Map								
2.2. Draw area of interest and interventions on platform		6						
2.3. Download reports and spatial data		1						
2.4. Interpret results		2						
3. Value Chain Metrics								
3.1. Standardize and fill GBS input datasheet		4						
3.2. Run GBS		1						
3.3. Interpret results of GBS		5						
3.4. Standardize and fill SimaPro input datasheet (BFFI)		4						
3.5. Run SimaPro		1						
3.6. Interpret results of SimaPro		5						
3.7. Fill CBF input datasheet and submit to IDL		1						
3.8. Interpret results of CBF		5						
4. STAR								
4.1. Submit Data to IBAT platform / extract data		2						
4.2. Download reports and spatial data		1						
4.3. Interpret results		3						
5. Consolidation								
5.1 Compare results		5						
5.2 Report		12						
Total (five metrics on six projects)	**24**	**82**						

*Days Bank = days onf internal bank team
Days ext.=days for external consultants

5.5. CONSOLIDATED BUDGET

The estimated budget accounts for the external consultancy and subscription. It does not include the potential costs associated to the effort provided in-house by the AFD / EBRD teams.

Table 20: Consolidated budget to undertake the in-depth comparative assessment for a set of six projects

Metrics: STAR, ABC-Map, GBS, CBF, BFFI	
Requirements	Cost
Subscription to GBS	Covered by rapid assessment
Subscription to IBAT	Covered by rapid assessment
Subscription to SimaPro	€5,700
Subscription to Iceberg DataLab (6 projects)	€ 30,000
Consultancy – 79 days at average rate of €1,600 / day	€131,200
Total (five metrics on six projects)	**€ 166,900**

6. GENERAL CONCLUSIONS

General conclusions from this review of metrics and assessment development include:

- It is possible to assess species extinction risk exposure, opportunities for nature restoration, impacts and dependencies for public development banks portfolio.

- Some of the selected metrics are not applicable for all PDB's projects.

- Only STAR can be applied to all projects.

- A detailed (in depth) project-level analysis might not be feasible for all projects within the PDBs' portfolios, since it is a time-consuming process and specific data on purchases might not be available before project implementation.

- Most metrics are flexible to the type of information available, and can provide either a high-level assessment, based on country / sectoral information or a project-specific assessment when data are available.

Based on the availability of data for development banks projects, the study recommends conducting **a consolidated comparative assessment**, combining a high-level (rapid) and an in-depth (detailed) approach.

- High level assessment performed for ENCORE, STAR, CBF, GBS, BFFI

- In-depth assessment performed for ABC-Map and STAR (for those projects that have polygons of the direct operations; that would comprise AFOLU sector for ABC-Map and AFOLU or infrastructure for STAR)

The in-depth assessment using value chain tools is not recommended due to the effort necessary to gather and systematize all necessary input data and the high cost involved. **Such complex analyses are not easily scalable to the portfolio of the PDBs and should be applied to specific projects, in which very detailed information about the value chain can reveal specific patterns of interface with nature, impacts and dependencies.**

After all metrics are applied, a consolidation of the results highlighting strengths and gaps of each analysis specifically for development banks will complement the existing reports that compare potentialities across metrics and evaluate individual metrics to assess companies, asset managers, investment banks, and other financial institutions.

The proposed consolidated approach, should help PDBs understand how each metric addresses the following questions:

- What **pressures** are driving the **main positive** and **negative impacts** on nature (land use, climate change, direct resource exploitation, pollution)?

- Which **projects/activities** create the **main positive** and **negative impacts** (including direct operations and modelled impacts of the **value chain**)?

- What are the impacts across the different **dimensions** of biodiversity?

- How do impacts vary across the three **scopes**, especially the modelled **value chain upstream**?

- How does the assessment help identifying and estimating **Nature Positive investments**?

- What are the priority elements for **mitigation**?

This proposed consolidated comparative approach should help development banks understand how each metric meets their needs, and thus make an informed choice about which metric(s) to use more systematically on their portfolio.

7. APPENDIX 1 - METRICS OVERVIEW

7.1. EXPLORING NATURAL CAPITAL OPPORTUNITIES, RISKS AND EXPOSURE (ENCORE)

ENCORE aims to guide users in understanding how businesses across all sectors of the economy potentially depend and impact on nature, and how these potential dependencies and impacts might represent a business risk.

The **Biodiversity Module** provides a quantified estimate of impact of agriculture and pasture based on information about cropland / pastureland area and country where it is located. Impact is calculated as MSA.km^2 and uses a standardized MSA value of 0.9 for croplands and 0.7 for pastureland, weighted by biodiversity importance, represented by range rarity index[4].

Potential uses of ENCORE include:

- Ex-ante qualitative high-level assessment of sector-based materiality of impacts for a project or a portfolio of projects
- Ex-ante qualitative high-level assessment of sector-based materiality of dependencies for a project or a portfolio of projects

ENCORE requires the following **input data**:

- Economic sectors comprised by the project or portfolio of projects / assets
- Nomenclature follows GICS sectors (the Global Industry Classification Standard)
- **Biodiversity Module** requires area or revenue of croplands / pastures and country for agriculture projects, or name of company and country for mining projects

The following **outputs** are obtained:

- Qualitative materiality assessment of impacts (five classes from very low to very high)
- Disaggregated by impact drivers and natural capital assets
- Qualitative materiality assessment of dependencies (five classes, from very low to very high)
- **Biodiversity module** provides potential change in biodiversity intactness (MSA) and Potential to contribute to reducing global species extinction risk (STAR)

Main **limitations and caveats** of ENCORE are:

- Materiality ratings for dependencies and impacts are based on generic global screening. This is appropriate to inform initial screening but it should be followed by spatially explicit and company-specific assessments to inform on location-specific dependencies and impacts.
- Some dependency and/ or impact links may be missing due to lack of sufficient robust literature.
- Only direct impacts and dependencies are covered. Users cannot explore impacts and dependencies across the full value chain of a production process.
- No ex-post assessment of impacts

[4] See Global Biodiversity Score below for Mean Species Abundance definition.

7.2. SPECIES THREAT ABATEMENT AND RESTORATION (STAR)

STAR allows quantification of the potential contributions that species threat abatement and restoration activities offer towards reducing extinction risk. STAR provides a metric that can be used by businesses to support establishment and reporting of science-based targets for nature, and commitments relevant to the post-2020 biodiversity framework. It allows businesses to assess and compare the potential gains from particular nature-positive actions in specific locations.

Potential uses of STAR include:

- Screening conservation projects for opportunities and potential positive impacts of threat reduction and habitat restoration
- Screening of nature risks related to infrastructure / development projects
- Screening a portfolio of projects / assets to rank them based on potential risk exposure and opportunities
- Target setting, mitigation / offset planning

STAR requires geographically explicit **input data**, that can comprise:

- coordinates of projects
- polygons of the area of influence of a project or asset
- administrative unit (municipality, state, province or even country)
- Biodiversity data and threats are collected externally from IUCN database.

The following **outputs** are obtained:

- Potential to contribute to reducing global species extinction risk through threat reduction ($STAR_T$)
- Potential to contribute to reducing global species extinction risk through restoration ($STAR_R$)
- Outputs are scalable and can be broken down by threat type to help identify and prioritise conservation action. Input data must be disaggregated by sector and geography as desired. It is not possible to disaggregate by impact.

Main **limitations and caveats** of STAR are:

- STAR currently has a terrestrial focus because it only includes mammals, birds and amphibians species, i.e., the group of species that have been comprehensively assessed in the IUCN Red List. However, in the future, the layers are likely to include additional taxa and a freshwater layer will be developed.

- The biodiversity significance of an area that supports threatened species not currently assessed through the IUCN Red List or widely distributed threatened species might be underestimated. STAR assumes threats are equal across a species' range and does not account for the magnitude of threats at site level or for undocumented or emerging threats.

- STAR informs the potential of reducing species threat in a given location based on species ranges and threat category, but does not directly measure or estimate the impact of land use or management practices changes. This can be achieved by calculating calibrated STAR, that would allows comparison between different scenarios, but relies on a project-specific list of species actually occurring on the site and expert- informed lists of species potentially occurring as a result of changes in land use or management practices, which is not available for most of development banks' basic project data.

7.3. ADAPTATION, BIODIVERSITY AND CARBON MAPPING METRIC (ABC-MAP)

ABC-Map aims at holistically assess the environmental impact of National Policies and Plans and investments in the AFOLU sector via satellite imagery based on Google Earth Engine. It is comprised by three modules: adaptation mapping tool; biodiversity mapping tool; carbon mapping tool.

Potential uses of ABC-Map include:

- Ex ante / ex post assessment of positive and negative impacts of agriculture projects
- Ex ante / ex post assessment of impacts of land use change
- Ex ante / ex post assessment of impacts of change in management practices

Input data comprise polygons describing a project or portfolio of projects or administrative units (municipality, state, province or even country). Change in land use and management practices classes according to standardized table are also required to compare ecosystem integrity before and after a given intervention.

The main **output** is the potential change in nature intactness and ecosystem service flows, as a result of changes in land use and management intensity. It is useful to estimate either negative or positive impacts, according to the changes that are planned.

Main **limitations and caveats** observed comprise:

Polygons of Area of Influence and Intervention need to be drawn on the platform. This process is time-consuming and not practical for long portfolios.

Developments are underway to use mobile phone applications to geo-reference intervention polygons in order to speed up the retrieval of this data directly from the project (or bank) field staff. The use of such mobile applications with data consolidation in the PDB's information system could reduce data entry times in the future and speed up evaluations.

7.4. GLOBAL BIODIVERSITY SCORE (GBS)

GBS is a metric designed to assess the nature footprint of businesses and financial assets - including entire upstream value chain. GBS is useful to assess a company value chain and GBS integrates results of the assessment with other ESG indicators.

Potential uses of GBS include:

- Assessment of impacts of a portfolio of assets or projects
- BIA-GBS allows integration with other ESG indices
- Footprint assessment of a company and its value chain, disaggregating across pressures, realms, and scopes.

GBS is flexible to run the analysis with different level of complexity, depending on the available **input** data. A high-level analysis, based on sector averages can be developed if only revenue (or amount invested) is available. The value chain upstream is modelled using Exiobase data for the industry. If data on purchases of raw material is available, specifically volumes purchased and source location, these data will replace sectoral averages by company-specific flows. Additional data such as water use, GHG emissions, and land use can also be incorporated into the analysis for a more accurate footprint assessment.

Outputs describe potential change in nature intactness measured as MSA.km2 related to three scopes (direct operations, emissions and value chain upstream), IPBES pressures, geographies, and realms. **MSA stands for Mean Species Abundance**, which is an indicator of ecosystem condition, described by GLOBIO. It is calculated based on the estimates of abundance of individual species in an ecosystem subject to a given pressure at a given intensity, compared to their abundance in an undisturbed reference situation. Concretely, the MSA evaluates ecosystem integrity on a scale from 0%, for a land that is completely artificialized, to 100%, for the undisturbed ecosystem. MSA.Km2 is an impact measure represented by product of MSA multiplied by the extent of area to which it applies.

Means Species Abundance of 75 MSA.km2, can be interpreted as (among many other possibilities):

- The complete destruction (MSA of 0%) on 25% of the square kilometre while the rest of the area remain untouched (MSA of 100%)
- The partial destruction of the ecosystem (MSA of 75%) on the whole surface of 1km².

Main **limitations and caveats** observed comprise:

- Pressure-impact relationships in the GLOBIO model are biased towards the most studied species and ecosystems.
- Marine biodiversity is not factored in
- Invasive species and soil degradation are not factored in yet; overexploitation is factored in only partially.
- Remaining shortcomings in reallocation rules (i.e., linking pressures to economic activities)
- Recently implemented nature-related dependency assessments are based on ENCORE database and might not provide further insights

7.5. CORPORATE BIODIVERSITY FOOTPRINT (CBF)

CBF is a metric designed to assess the nature footprint of businesses and financial assets - including entire upstream value chain. Portfolio assessment can be integrated with other ESG indicators.

Potential uses of CBF include:

- Assessment of impacts of a portfolio of assets or projects
- Allows integration with other ESG indices
- Footprint assessment of a company and its value chain, disaggregating across pressures, realms, and scopes

Just like GBS, CBF is flexible to run the analysis with different level of complexity, depending on the available **input** data. A high-level analysis, based on sector averages can be developed if only revenue (or amount invested) is available. The value chain upstream is modelled using Exiobase data for the industry. If data on purchases of raw material is available, specifically volumes purchased and source location, these data will replace sectoral averages by company- specific flows. Additional data such as water use, GHG emissions, and land use can also be incorporated into the analysis for a more accurate footprint assessment.

Outputs describe potential change in biodiversity intactness (measured as MSA.km2) related to three scopes (direct operations, emissions and value chain upstream), IPBES pressures, geographies, and realms.

Main **limitations and caveats** observed comprise:

- Based on financial data, except for climate change, granularity within a sector is limited
- Pressure-impact relationships in the GLOBIO model are biased towards the most studied species and ecosystems.
- Invasive species and soil degradation are not factored in yet; overexploitation is factored in only partially.
- Water use is not included.
- Impacts on freshwater and marine biodiversity are only covered partially
- Recently implemented nature-related dependency assessments are based on ENCORE database and might not provide further insights

7.6. BIODIVERSITY FOOTPRINT FOR FINANCIAL INSTITUTION (BFFI)

BFFI is an approach designed to Support Financial Institutions to take nature impact into account in their investment decisions, and to determine the nature impact of their loans and investments. It is not a specific metric, but rather a protocol to be followed by financial institutions to assess their portfolios or projects.

Likewise GBS and CBF, BFFI approach allows integration with other ESG indices to combine with the assessment of a company and its value chain, disaggregating across pressures, realms, and scopes. A very important distinction of BFFI is that the nature metric (PDF.m2.yr) is "time integrated" - this allows for a fairer comparison of short- vs long-term impacts, but it also makes the metric harder to interpret for non-specialists.

Two different tools are recommended by the developer to run BFFI: Bioscope, a freely available biodiversity screening tool and SimaPro, a life cycle analysis software.

Bioscope uses Exiobase v 3.4, to select commodities and resources, covering all global economic activities. The resulting impacts on biodiversity are calculated with the ReCiPe method, which was specially adapted for BioScope.

Required and optional **input** data are similar to GBS and CBF, and include:

- Bioscope: only financial data and location of investment
- SimaPro: Financial data (revenue and purchases by geography), water use, GHG emissions, and land use

Outputs of BFFI are slightly different because impacts are estimated through a metric known as potential change in species richness (PDF) as an indicator for the health of an ecosystem related to scopes, pressures, geographies, and realms. **Potentially Disappeared Fraction of species** of 10 PDF.m2.yr, can be interpreted as:

- 10 m2 has lost all its species during a year
- 100 m2 has lost 10% of its species during a year
- 10 m2 has lost 10% of its species during 10 years

Although BFFI is more flexible than other metrics, it also have some **limitations and caveats**, such as:

- EXIOBASE data is based on sector averages, and thus not company-specific.
- This weakness can be addressed by using other LCA databases or by collecting additional data.
- Land-use related impacts are biased to temperate regions
- Inclusion of location-specific characteristics is limited
- Invasive species and overexploitation are not yet fully covered.
- This limitation is addressed by the complementary qualitative analysis, which elaborates on the significance of this limitation for the analysis and what it means for the interpretation of results.

7.7. COMPARING METRICS

The metrics in scope vary in regard to objective of the assessment, input data and outputs (Table 21, Figure 1):

- **BFFI, GBS and CBF** are conceptually similar and can be grouped as "**Value Chain**" metrics. Although they differ in some specific aspects, broadly speaking they are all useful to assess companies', projects' or portfolio's footprint on nature. They all rely on Exiobase to assess **impacts of raw materials** extraction for multiple industries and are flexible to range from high-level assessment based on financial information to more detailed assessment using company / project specific data.

- **ENCORE** is an even more high-level approach, that provides **qualitative impact** outputs based on global sectoral averages. ENCORE complements the other metrics, since it also evaluates **dependencies** on nature for different industries. It is worth noticing that developments of CBF and GBS that estimates dependencies are derived from ENCORE database.

- **ABC-Map** is useful to assess impacts on land-use change for AFOLU sectors, requiring spatially explicit data and **STAR** provides risks exposure and opportunities to reduce impacts on threatened species. Both ABC-Map and STAR can be used at a project level (i.e. when geospatial site level information is available)

Table 21 synthetizes the key features of each of the six metrics evaluated in this study with regards to their use, limitations and the practical implications.

Table 21: Summary of objectives, limitations and implications for the six metrics and metrics in scope.

Metric	Useful for	Limitations	Implications
STAR	Risks, opportunities for restoration and reducing threats to species. Spatially explicit assessment.	Data resolution = 5Km, covers birds and mammals from terrestrial realm only. Freshwater and marine biodiversity under development. Requires spatial data, that can be aggregated at country level. Requires subscription fee (IBAT).	Country-level aggregation might conceal high significance areas.
ABC-Map	Free assessment for AFOLU sector of positive and negative impacts of land use and management practices on ecosystem integrity	Does not cover non-AFOLU sector, requires spatial data. Still under development.	Not suitable for infrastructure projects.
ENCORE	Free high level materiality assessment of negative impacts and dependencies; Biodiversity module provides impact of agriculture and mining on ecosystem integrity	Qualitative assessment based on global averages for GICS economic sector. Biodiversity module provides country average impact and risk assessment for agriculture but does not specify across commodities.	Does not specifically assess the project / company. All projects in the same sector will have the same results.
GBS / CBF / BFFI	Quantitative assessment positive and negative impacts on nature across the value chain of a project, company or assets portfolio. High-level estimates of dependencies.	Impacts of value chain based on Exiobase, which is restricted to upper-middle and high income countries (remaining aggregated by continent). Does not cover agriculture management practices. CBF is a proprietary metric, therefore assessment can only be performed by IDL; GBS requires subscription and accreditation; BFFI is a free approach but requires expertise and subscription to LCA metrics.	For most cases, projects in same sector and same continent will have the same results. Changes in management practices will not change the result of the assessment.

7.8. SPECIFICITIES OF VALUE CHAIN METRICS

It is important to highlight some relevant aspects of **value chain metrics** concerning their assumptions and limitations:

- Relationships between specific supply chain expenditures and consequent impacts on nature are modelled based on **industry averages** by country, continent or global. Results should therefore be interpreted as an **approximation of impacts only**. This is especially true where input data has been aggregated (for example into broad classifications or categories).

- **The granularity of industry or sector categories used to classify projects is not always well developed and extensive in value chain metrics, particularly for industries using pro-nature business practices or processes**. The alignment between the categories in the metrics and specific industry definitions may not always be perfect, some

categories may refer to impacts from slightly different products or services than those that were purchased in the company's supply chain.

- Results are a snapshot, referring to the situation **at the time of the assessment**. If the assessed company were, for example, to increase its revenue and/or spend, develop new activities or sites, materially change the scope of its business, and so on, its impacts on nature would change and the metric would need to be rerun with new, appropriate data inputs.

- Models **do not cover all aspects** of nature impact/risk. For example: impacts on marine biodiversity; some impact pathways/pressures (e.g. invasive species); biodiversity significance among others.

- The GBS model is still under development. In particular aquatic dynamic and ecotoxicity calculation modules are still in beta and these results should be interpreted with caution.

8. APPENDIX 2 -CHOOSING THE RIGHT METRIC

Multiple criteria must be considered when choosing a metric to assess impacts, dependencies, risks and opportunities for a specific project or portfolio.

It is first essential to clarify the objective of the assessment. This will narrow down the set of candidate metrics. After this, operational criteria such as granularity of input data and level of required expertise can be considered.

To guide this process, the study proposes **two separate decision trees**, depicted below (Figure 2 and Figure 3). Since metrics may provide complementary results (e.g. value chain tools explore impacts and dependencies, whilst STAR measures risks and opportunities related to species extinction risk), the decision tree might suggest a specific metric or a combination of metrics. Some metrics are flexible in terms of granularity of geographic data available, and therefore can provide more generalised or accurate results depending on the available input data.

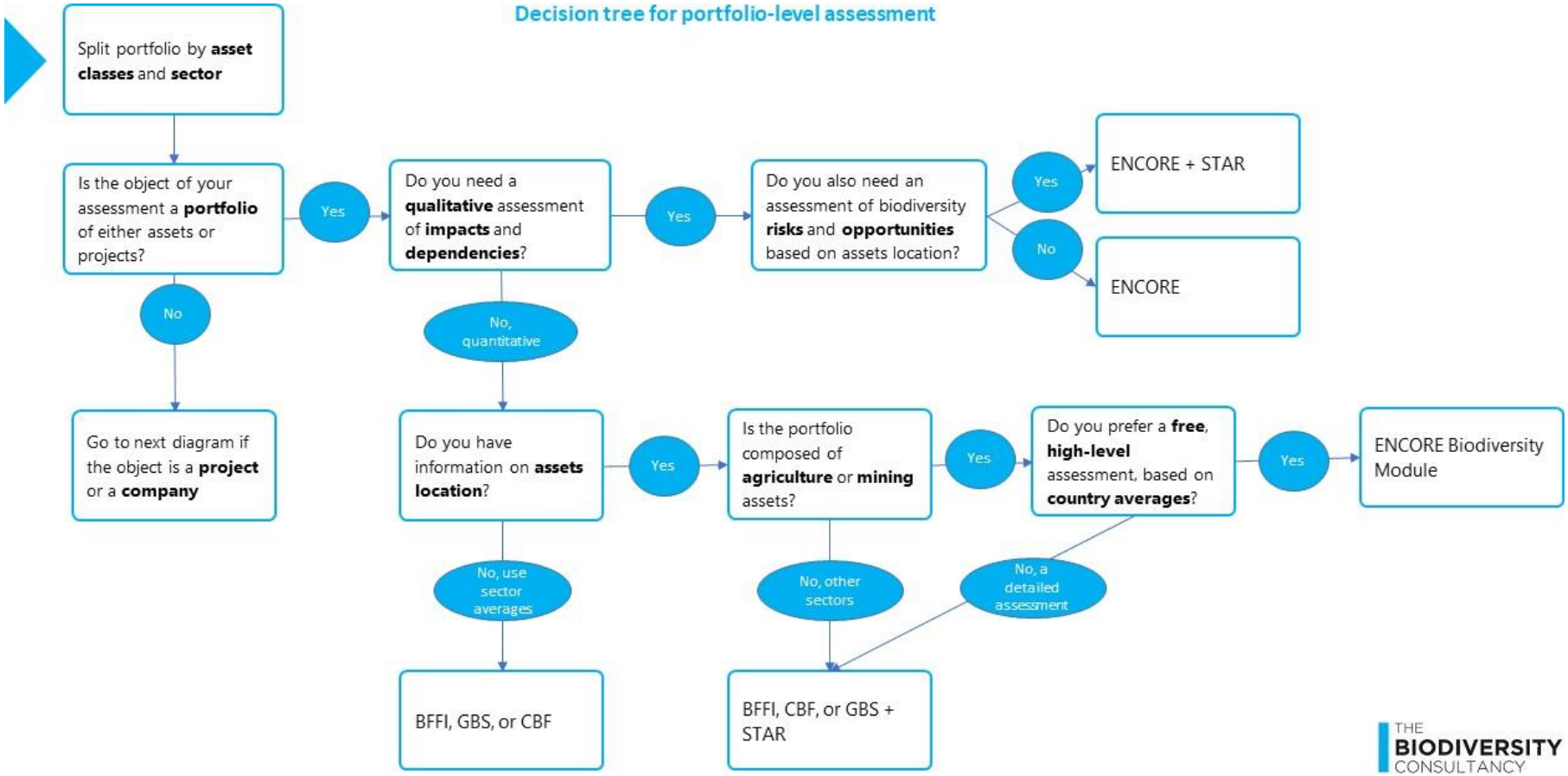

Figure 2: Decision tree for portfolio-level assessment (Source: TBC)

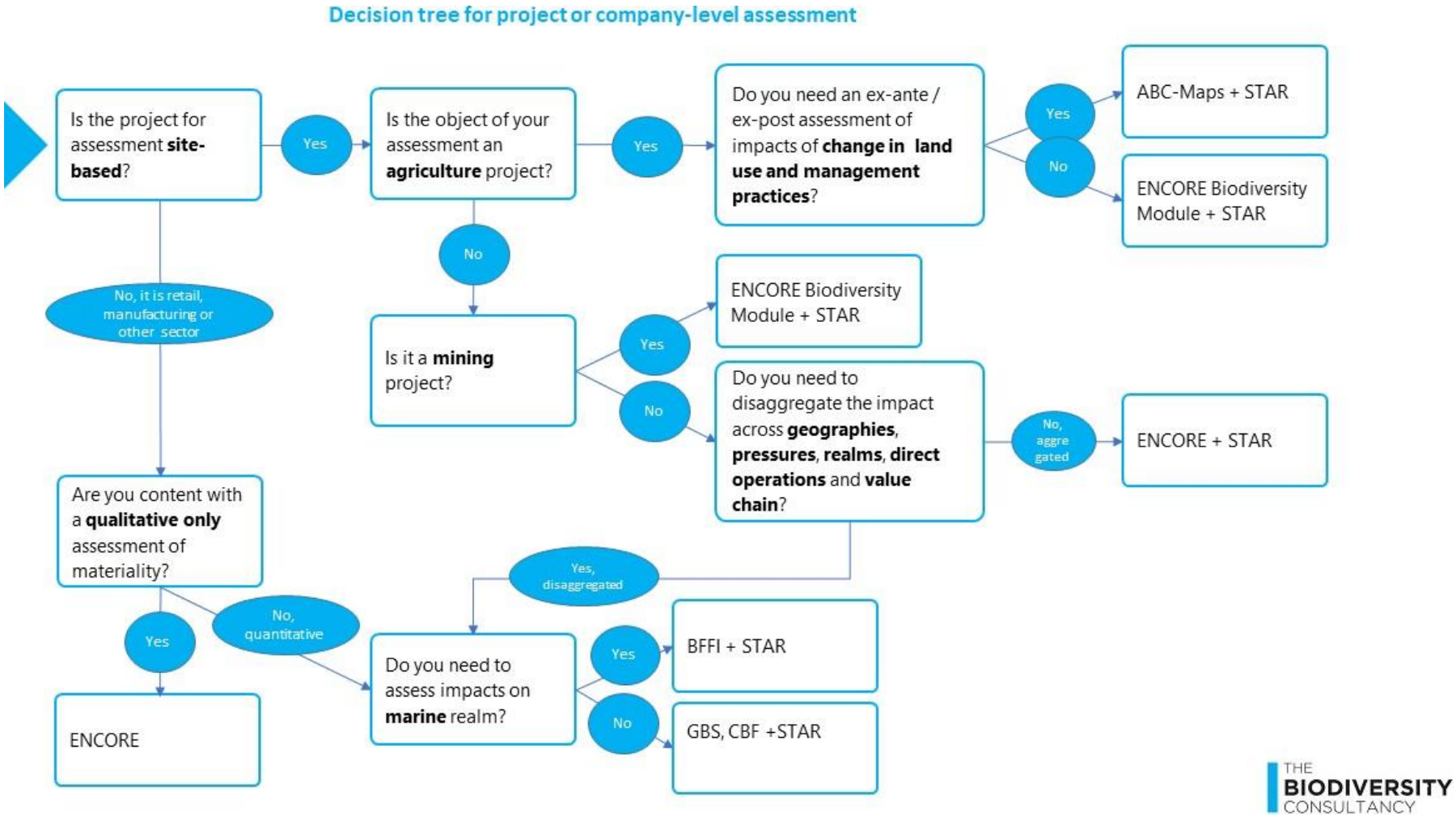

Figure 3: Decision tree for project-level assessment (Source: TBC)

About Agence Française de Développement (AFD)

Agence Française de Développement (AFD) implements France's policy on international development and solidarity. Through its financing of NGOs and the public sector, as well as its research and publications, AFD supports and accelerates transitions towards a fairer, more resilient world. It also provides training in sustainable development (at AFD Campus) and other awareness-raising activities in France.

With our partners, we are building shared solutions with and for the people of the Global South. Our teams are at work on more than 4,000 projects in the field, in the French Overseas Departments and Territories, in 115 countries and in regions in crisis. We strive to protect global public goods – promoting a stable climate, biodiversity and peace, as well as gender equality, education and healthcare. In this way, we contribute to the commitment of France and the French people to achieve the Sustainable Development Goals (SDGs). Towards a world in common.

Preliminary analysis to compare biodiversity measurement approaches for public development banks

This report is extracted from a study to prepare a comparative analysis of six biodiversity metrics submitted to Agence Française de Développement (AFD) and the European Bank for Reconstruction and Development (EBRD) by the consultancy firm The Biodiversity Consultancy.

This report aims to share practical and reusable information for all Public Development Banks (PDBs) considering the use of these biodiversity metrics in the future, particularly in relation to the TNFD framework.

The six biodiversity metrics selected and analysed as potentially relevant to informing PDBs' investment decisions and reporting are:

- CBF – Corporate Biodiversity Footprint
- BFFI – Biodiversity Footprint for Financial Institutions
- STAR – Species Threat Abatement and Restoration metric
- GBS – Global Biodiversity Score
- ENCORE – Exploring Natural Capital Opportunities, Risks and Exposure
- ABC-map – Adaptation, Biodiversity and Carbon mapping tool..

The lessons learned in this report, which proposes several protocols for using several metrics to compare their results, also contains information that may be useful to some development banks who just want to choose one metric and see how they can use it. In this perspective, a decision tree for choosing one of the studied metrics is suggested in Annex 2 of this report.

Agence française de développement (AFD)

5, rue Roland Barthes – 75012 Paris

www.afd.fr