

Biodiversity Impact Assessment Tool

The Biodiversity Impact Assessment Tool (BIAT) assesses and quantifies the potential impacts of activities of covered corporates on biodiversity. The tool aims to assess drivers of biodiversity loss and thus models the impact of corporate operations by considering a set of environmental pressures on species and habitats, taking into account inputs and outputs in the entire value chain. It leverages a bottom-up assessment of a company's business activities in different geographical locations, applies scientifically proven Life Cycle Impact Assessment (LCIA) methodology (based on IMPACT World+), and incorporates recognized databases such as EXIOBASE and ecoinvent. In addition, further biodiversity-relevant data sets and tools, such as Forest 500, SBTN Materiality Tool, and ISS STOXX's proprietary biodiversity performance data are used to refine the data on company and industry level.

The tool's output flows from the following multiple-step process: 1) Economic Activity Identification & Supply Chain Modelling, 2) Upstream and Downstream Impact Assessment, 3) Species Richness Assessment, 4) Species Abundance Assessment, and 5) Refinement and Normalization. As part of the assessment, 10 environmental (IMPACT World+ LCIA) impact indicators are considered: Climate Change, Marine Acidification, Fresh Water Acidification, Terrestrial Acidification, Freshwater Eutrophication, Marine Eutrophication, Freshwater Ecotoxicity, Water Availability, Land Transformation, and Land Occupation.

Along with the biodiversity impact assessment, the solution comprises a separate dependency assessment which links businesses and their economic activities to 22 ecosystem services within 3 overarching groups (provisioning, regulating & maintaining, and cultural). Ecosystem services and materiality grades are derived from ENCORE and CICES (Common International Classification of Ecosystem Services).

Outputs

Corporate impact on biodiversity is described quantitatively with reference to the following biodiversity metrics: Potentially Disappeared Fraction of species (PDF), and Mean Species Abundance (MSA).

- PDF is defined in the unit PDF.km².yr, indicating the potential loss of species richness in a given area over a specific period of time. A larger PDF indicates a higher level of impact.
- MSA is provided in MSA.km², indicating the biodiversity intactness based on abundance of original species relative to their abundance in undisturbed ecosystems.

The tool's top level outputs include aggregated impacts in terms of PDF and MSA, relative impacts based on normalization (revenues, EVIC) as well as ranking factors (decile rank, biodiversity impact classification). The dataset is complemented by 600+ underlying factors per company, providing insights on the PDF impact per environmental impact indicator, per activity and per country.

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Methodology and Research Process

The ecosystem services dependencies assessment comprises 50 factors showing the proportion (%) of revenues dependent on each ecosystem's service and respective materiality grades.

Research Process

The Biodiversity Impact Assessment Tool is a model which is primarily based on quantitative data. It was developed in collaboration between ISS STOXX and Quantis, a renowned environmental consultancy company with major expertise in biodiversity and LCIA. The model is reviewed on an at least an annual basis.

- **Data collection and assessment:** Financial data found in a company's balance sheets is paired with geographical breakdown of revenues as well as the EXIOBASE data on activities and modelled with associated resources (inputs) and emissions (outputs). Data at the industry, country, and company level is used to refine the model in the last step. For example, to reflect company-specific biodiversity practices, qualitative impact data from the ISS STOXX SDG Impact Rating (Goal 14 and 15) is considered. Data is updated on a bi-weekly basis.
- **Quality assurance:** The output for each step of the model has undergone robust research and comprehensive review by ISS STOXX and Quantis.
- **Final report:** Granular data and a Portfolio Report is provided to support comprehensive understanding and analysis of the data.

Use of Estimated Data

ISS STOXX's Biodiversity Impact Assessment Tool is a model-based solution which draws on several databases, third party data sets as well as proprietary data. Similar to other biodiversity tools, it is built on various proxies and estimations. To ensure reasonable assumptions, outputs of each step have undergone extensive review processes.

The tool utilises data from ISS STOXX Energy & Extractives as well as ISS STOXX's SDG Impact Rating. For more details regarding the use of estimated data within these solutions, please refer to the respective methodology overviews.

As of January 2024, all biodiversity data (PDF, MSA, dependencies) is estimated.

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