Modelling the biodiversity impact of investments

15 September 2022

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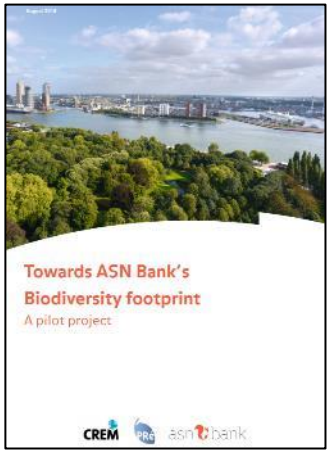
PRé

How it started



Started with ASN, CREM, PRé

International cooperation
Paris, Edinburgh, London, Rome, Madrid, Luxembourg, Maputo, Sharm el Sheikh, Beijing

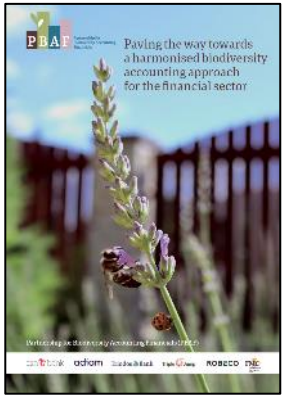
2015 - 2018

Explore opportunities for quantifying positive impact

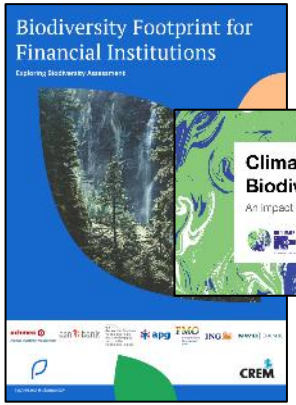
2019

PBAF for broader common ground and action

Now over 35 FI's have joined!



2020



Learning by doing

Including Dependencies on Ecosystem Services

2021

2022

Quantifying Biodiversity is not easy

Climate change

- Relatively clear what needs to be measured
- Limited number of substances are assessed (even though many factors also influence)
- Emissions have global impact
- Data can be found in many corporate reports and statistics or databases

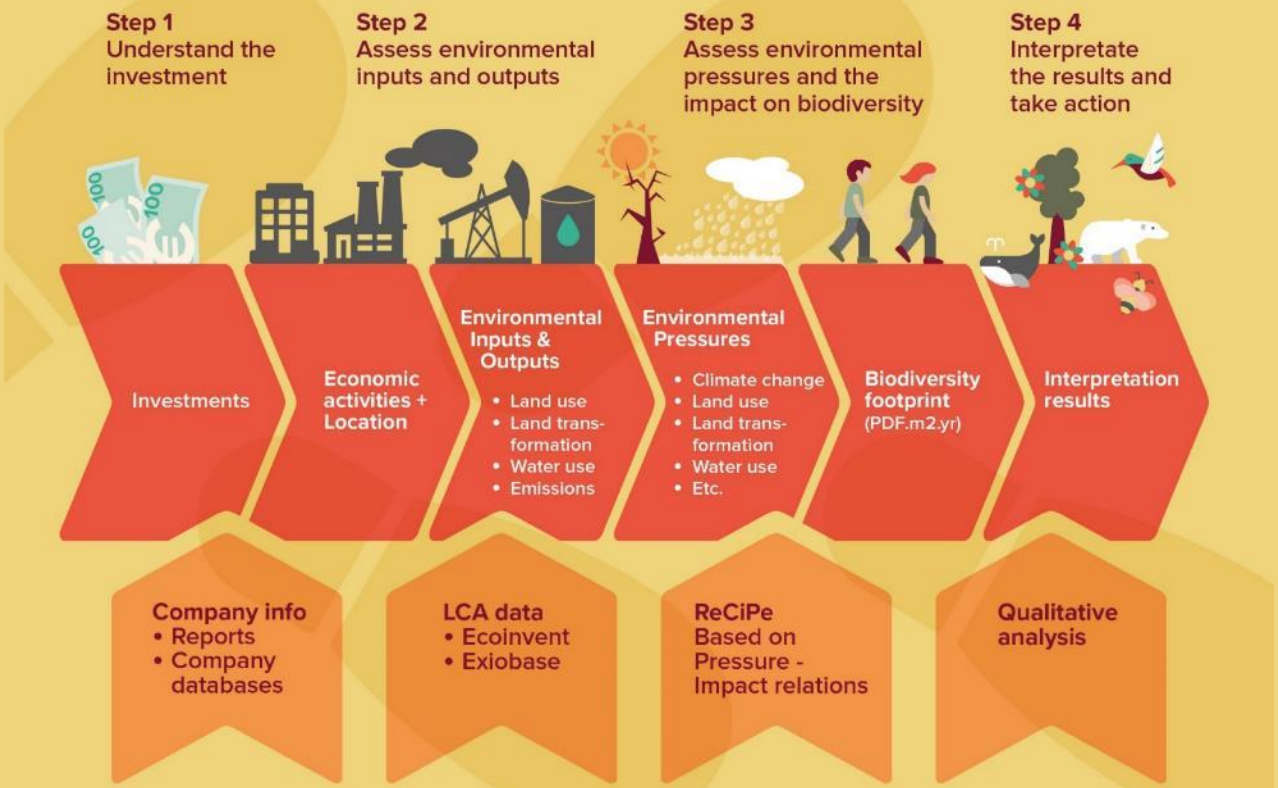
Biodiversity

- No consensus on the metric we want to assess
- Many drivers have impact on biodiversity; big differences per region, multiple time scales
- Data scattered over many sources
- Important divers may be difficult to quantify

Therefore, results are uncertain

- Models and data include a level of uncertainty:
  - We do not always know where impacts take place, while this is very relevant
  - We use scientific models that are hard to verify; we use the best available science
  - We simplify things to make the approach business feasible
- Transparency about limitations is key
- We offer a compass which shows the direction
- Precision can be improved when more data become available, but it will never be perfect (but perfect can be the enemy of good)

How the BFFI works: 4 steps



Step 1: Goal and Scope – Understanding the investment

Use of revenue data to identify economic activities of the companies financed in order to link these activities to environmental inputs and outputs (step 2)

This step is similar to a carbon footprint. However, the scope is not limited to climate change. It also includes land use, water scarcity, acidification, eutrophication and other environmental issues leading to biodiversity loss.

Investing in a company implies partial ownership and partial responsibility for the impacts that company causes

Impacts of scope 1, 2 and 3 are included

The next step is to make an overview of all emissions and resources used in the supply chain of the company or project

Including downstream activities is a challenge

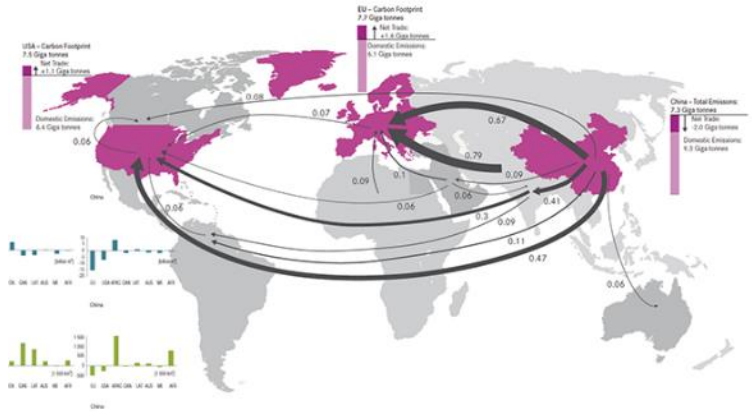
Step 2: Inventory data – Model the supply chain and map out environmental inputs and outputs

For this, we use the [EXIOBASE: Global environmentally extended multiregional input-output database]

43 countries (28 EU member plus 16 major economies)
5 rest of the world regions
164 sectors for all included countries/regions

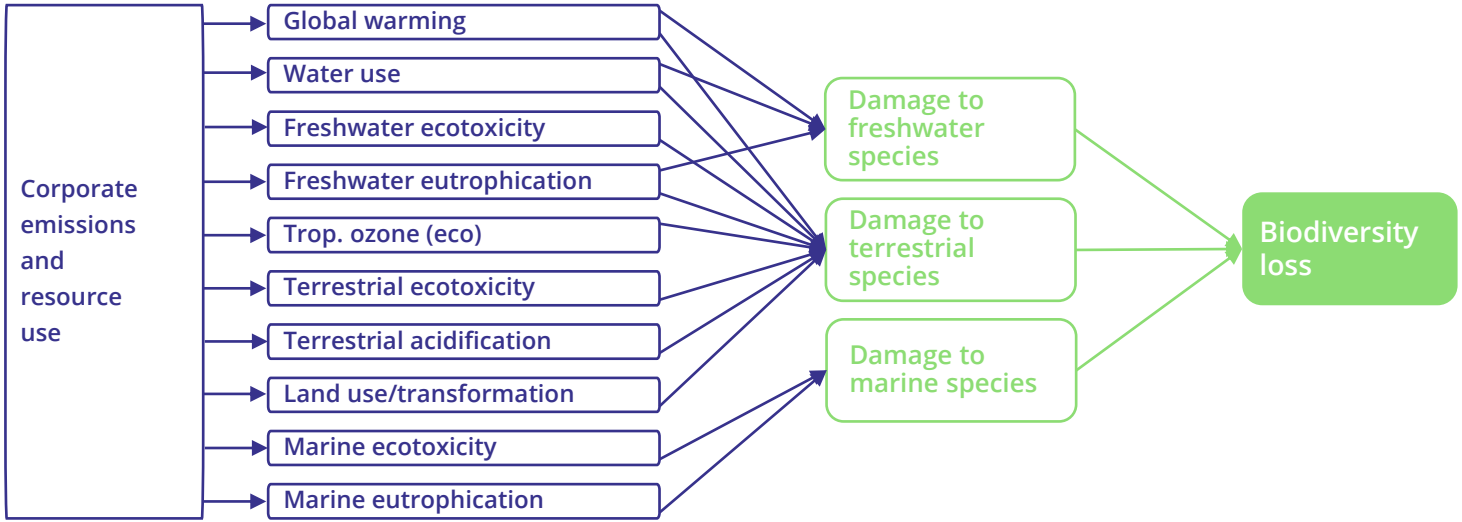
Environmental extensions:

- Energy: 60 primary and secondary energy products
- Emissions: 66 emissions
  - from combustion processes
  - non-combustion processes
  - from waste flows
  - from agriculture
- Land accounts: 15 types
- Water accounts: Blue and Green
- Material Accounts:
  - Energy Products
  - Resource Extraction



NTNU – Trondheim Norwegian University of Science and Technology
TNO innovation for life
SERI
Universiteit Leiden The Netherlands
WU Wirtschaftsuniversität Wien Vienna University of Economics and Business
2.0 LCA consultants

Step 3: Impact Assessment – Calculate the footprint



PDF.m².year = The unit for overall biodiversity impact using ecosystem quality and species density to describe biodiversity loss

ReCiPe2016 developers: Radboud University; NTNU – Trondheim Norwegian University of Science and Technology; PRé; National Institute for Public Health and the Environment, Ministry of Health, Welfare and Sport

What does PDF.m².yr mean?

PDF = Potentially Disappeared Fraction of species

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

We only know the combined effect
We use the first interpretation to calculate the footprint:

The number of m² (or ha)
that has lost all biodiversity (PDF = 100%)
during (an investment of) one year

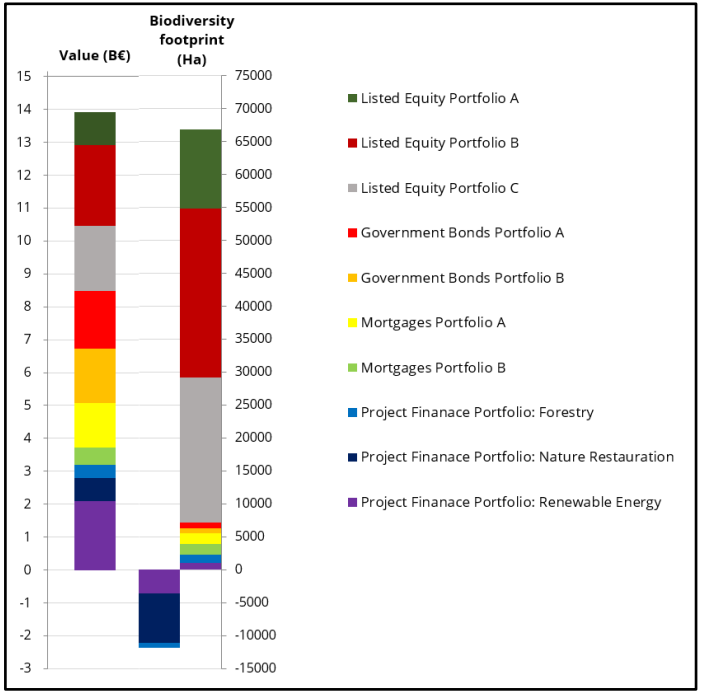
PDF = 1

PDF = 0

Step 4: Interpret and take action

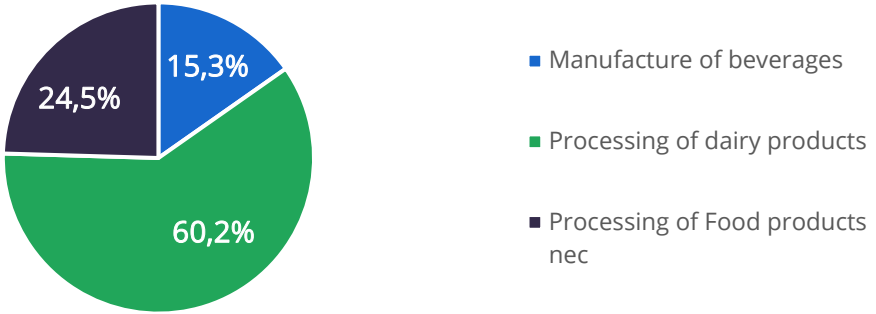
- Interpret with care and understand the footprint limitations
- Use the complementing qualitative assessment
- Look for more specific data for the hotspots

- Incorporate biodiversity in your ESG policy, monitoring, engagement, investment criteria, reporting

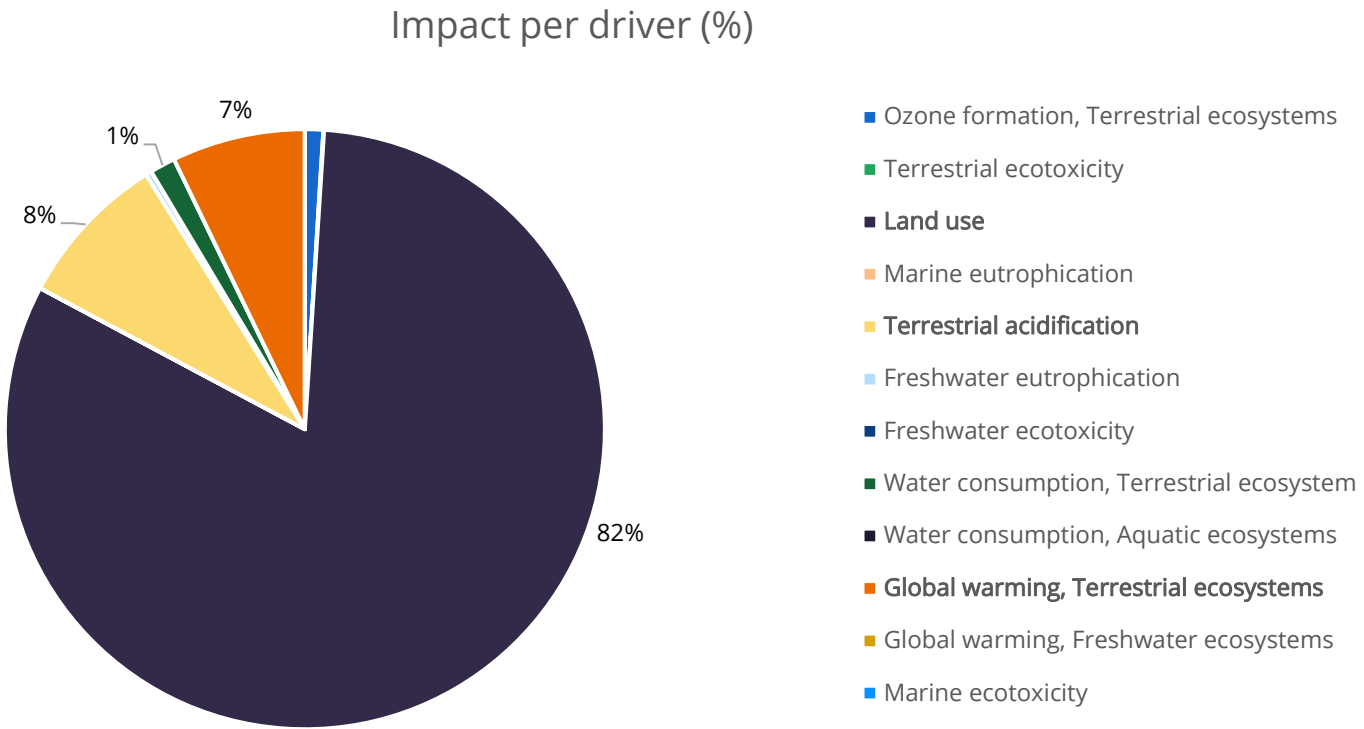


Example company 1 – Dairy Company

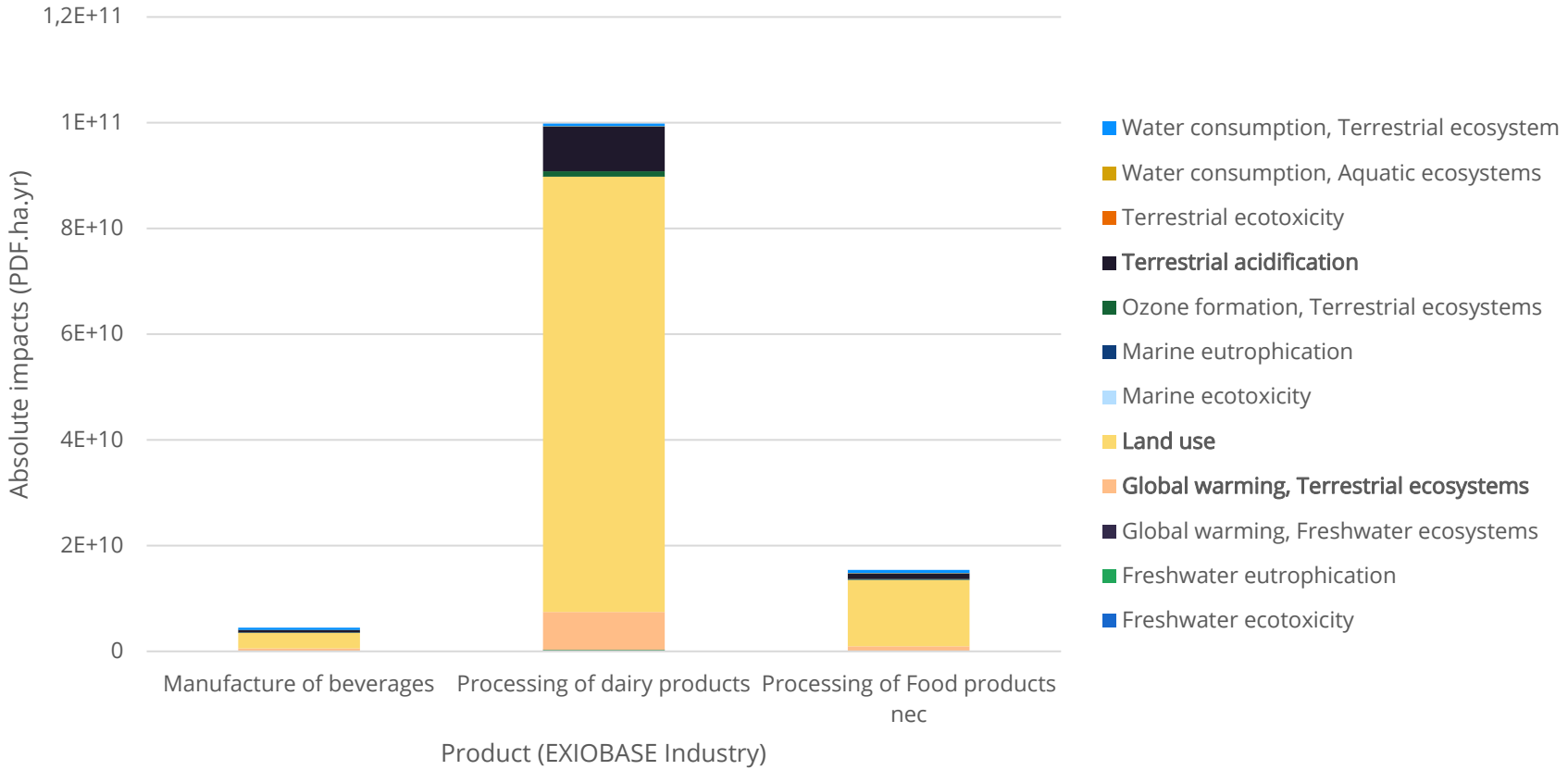
- Food company, focused on dairy and nutritional products
- Industries of activity mapped to: ‘Processing of dairy products’, ‘Processing of food products not elsewhere classified’, and ‘Manufacture of beverages’
- Revenue data – 23 620 MEUR



Impact per driver



Impact per product

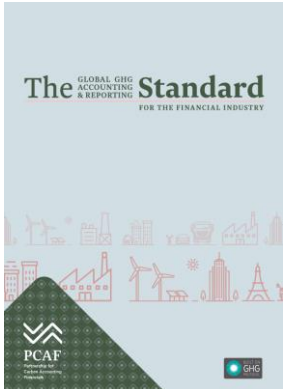


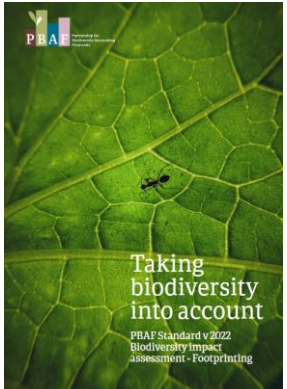
How to calculate the financed biodiversity impact?

$$Attribution\ factor = \frac{Outstanding\ amount}{Enterprise\ Value\ Including\ cash}$$

$$Financed\ impact = \sum_{c} \frac{Outstanding\ amount}{Enterprise\ Value\ including\ cash} \times Company\ footprint$$

(With c = borrower or investee company)





Do you have any questions?

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