Case study Summary sheet

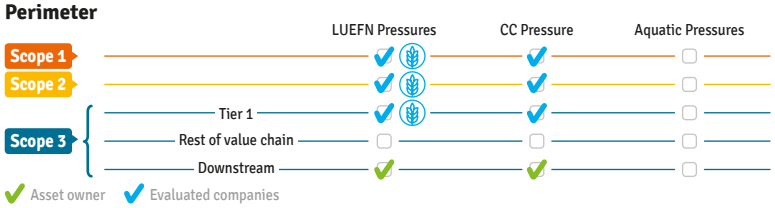
Context

CASE STUDY

Footprint use category: Corporate and portfolio **Assessment time:** 2018

Business application: Assessment / rating by and for third parties with external data

Perimeter



COMPANY'S IDENTITY

BNP PARIBAS

Industry
Financial institution

Asset under management 2018
EUR 416 billion

Why?

ASSESS THE BIODIVERSITY IMPACT OF A PORTFOLIO OF LISTED COMPANIES

When?

THE FOOTPRINT IS COMPUTED BASED ON THE STATE OF THE PORTFOLIO IN 2018

How often?

ONE-OFF FOR THE PILOT BUT THE ASSESSMENT OF PORTFOLIO'S BIODIVERSITY FOOTPRINT COULD BE CONDUCTED YEARLY

What?

TOTAL IMPACT OF THE PORTFOLIO AND BIODIVERSITY INTENSITY OF INVESTMENTS IS EVALUATED

For who?

INTERNAL USE AT THIS STAGE. IN THE FUTURE, COULD BE USED FOR DECISION MAKING, RISK MONITORING AND DISCLOSURE

How detailed?

CORPORATE LEVEL, TAKING INTO ACCOUNT SPECIFICITIES PER REGION AND INDUSTRY

DATA COLLECTED

→ List of the companies in the portfolio with turnover per region and industry of operation, amount of BNPP AM's investments, share of each company owned

KEY FIGURES

→ Portfolio of 10 food and agro-business companies with a total turnover of EUR 467.6 billion

→ Total investment: EUR 20.1 million

Footprint analysis

RESULTS

Results for the whole portfolio and for the five most impacting companies

Total Dynamic footprint

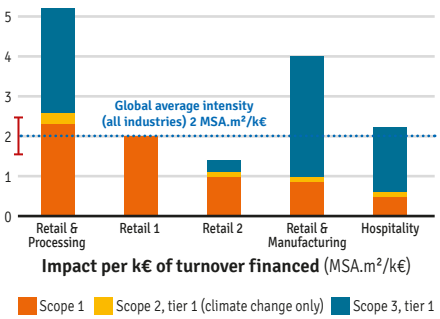
0.057 MSA.km²

or about 8 soccer fields

Total Static footprint

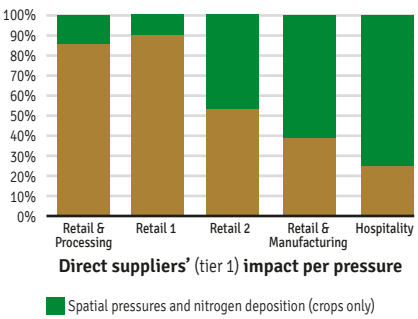
4.8 MSA.km²

or about the first ten "arrondissements" of Paris



Impact per k€ of turnover financed (MSA.m²/k€)

Scope 1 | Scope 2, tier 1 (climate change only) | Scope 3, tier 1



Direct suppliers' (tier 1) **impact per pressure**

Spatial pressures and nitrogen deposition (crops only) | Climate change

(source: GBS calculations, November 2018)

KEY MESSAGES

→ The overall impact of the portfolio is limited, which is consistent with the limited investments involved

→ Considering the impacts due to companies' value chains is key to properly estimate the impact of their activities

→ Climate change makes up the majority of the footprint of the companies due to the fact that spatial pressures are accounted for only for crop commodities. This result is likely to change when the impact of other raw materials is accounted for. The share of spatial pressures in the footprint is already higher for companies most reliant on crop commodities (*e.g.* Hospitality)

IMPROVEMENTS

→ The results could be improved with more specific data on the industrial and regional distribution of companies' turnover

4.3 BNP Paribas Asset Management

A CONTEXT AND OBJECTIVES

CDC Biodiversité worked on a case study with the French financial institution BNP Paribas Asset Management (BNPP AM) to compute the biodiversity footprint of one of their portfolios of listed equities. The portfolio assessed gathers 10 companies operating in the agri-food industry (food processing, retail, catering). This pilot aims at computing the biodiversity footprint of this portfolio. As the GBS is still under development, the assessment of four of the five terrestrial pressures is limited to the impacts caused by crop commodities, while the assessment of the climate change pressure covers all industries. Similarly, only terrestrial pressures are considered at this stage of development of the tool. The evaluation focuses on the **Scope 1, 2 and 3 impacts (both static and dynamic) of the portfolio's companies. The Scope 3 impacts presented here are limited to the upstream part of the value chain for direct suppliers (tier 1)**. These impacts actually belong to the downstream Scope 3 (investment) of the asset owners. For the sake of simplicity, they are described as Scope 1, 2 and 3 (of the portfolio's companies) in the following paragraphs.

B METHODOLOGY

A data collection file (Excel spreadsheets and fill-in instructions) was sent to BNPP AM and completed by its ESG analysts using public (annual reports of companies), private (Bloomberg) and internal data. The collected data were pre-treated and analysed following the method described in **section 3.4.2**.

Pre-treatment was especially important since the nomenclature used was most often the one used by companies in their annual report. Very few observations were provided in the {region; industry} format needed to use the EXIOBASE tables. Turnover data were mainly provided as the total for region and industry groups, and not split by {region; industry} pair (see Figure 23). For instance, while the initial dataset contained 62 lines, the pre-treated dataset contained 989 lines. Each line of the pre-treated dataset corresponds to the turnover financed by BNPP AM's investment for a company in a {region; industry} pair. Each company thus spans on several lines, the number of which depends on the number of regions and industries it operates in.

The portfolio is relatively small and represented EUR 20.1 million of turnover financed (2017 data) in total. The data collected did not allow to determine precisely the countries where turnover was generated for around 66% of the turnover financed. This turnover was thus associated to region groups instead of specific EXIOBASE regions, EU, USA, North America and France being the most important ones. As for the industries, according to the data collected, Retail trade, Hotels and Restaurants (hereafter Hospitality) and Manufacture of food products represented almost 75% of the turnover financed. This is consistent with the agri-food focus of the study.

The biodiversity footprint related to each line was computed using the "direct environmental impacts" (inventory data) and "biodiversity impacts" matrices (cf. section 3.4.2). The main results are presented below.

Figure 23 displays the region mix and industry mix of the portfolio in terms of the turnover financed. The turnover financed is defined as the amount (in euros) that the portfolio's investment finances, *i.e.*

$$\textit{total turnover of the company} \times \textit{share of the enterprise value owned}$$

For instance, if a company has a turnover of EUR 100 million and BNPP AM owns 1% of its shares and debt (*i.e.* of its enterprise value), then the turnover financed is EUR 1 million.

C RESULTS AND DISCUSSION

The main results of the assessment are presented in Table 5. The impact of the portfolio is split between the dynamic impact and the static impact. The latter amounts to 4.8 MSA.km^2, approximately the surface area of the first three "arrondissements" of Paris. As a comparison, the dynamic impact covers an area equivalent to that of 8 soccer fields (0.06 MSA.km^2). Since the case study focuses on agricultural commodities, it is logical that the static impact be much higher than the dynamic impact as the former is caused by the occupation of cultivated land required for the companies' purchases, while the latter only accounts for induced land conversions which apply to much more limited surface areas.

Figure 24 and Figure 25 provide more detailed information on the portfolio's impact per company, notably detailing it along the value chain. The biodiversity impact of the five companies with the highest Scope 1 impact per thousand euros is displayed on Figure 24. The companies operate in Retail, Processing and Hospitality and their Scope 1 impact ranges from 0.5 to 2.2 MSA.m^2 per thousand euros of turnover, close to or below the global average intensity of all industries. This global intensity is computed by simply dividing the total annual biodiversity loss predicted by GLOBIO by the total monetary value of the world production computed on EXIOBASE data in 2011.

Yet, considering value chain impacts changes the results quite dramatically. Scope 3 impacts are indeed equivalent or higher than Scope 1 impacts for three companies out of the five, Scope 3 impacts of the company “Hospitality” is three times higher than its Scope 1. On the contrary, Scope 3 impacts are limited for the two companies operating only in Retail (“Retail 1” and “Retail 2”), and Scope 2 impacts are limited for all companies. Accounting for Scope 3 impacts is thus key to properly assess the biodiversity impacts of an activity, all the more than only Scope 3 impacts of crop cultivation are considered here. Accounting for the Scope 3 impacts of other raw materials (metals, minerals, oil products) and of suppliers further up the supply chain would drive the results up even more.

Figure 25 displays a detailed distribution of the biodiversity impacts of the five companies along 10 compartments of the value chain: raw material production, raw material processing, manufacture, retail, waste management, energy, transport, construction, financial services and non-financial services and other activities (horizontal axis). To each of the company correspond two lines, the upper one being the impact of their own operations (Scope 1) and the lower one their value chain impact (Scopes 2 and 3 of direct suppliers). The size of the "cast iron weight" is proportional to the size of the impact (in MSA.km²). The percentages displayed refer to their respective line, for instance the Scope 1 impacts caused by the "Retail & processing" company are split at 15% in "Raw & secondary material processing" and 85% in "Retail". The Scope 1 impact of the companies lies, logically, in the compartment corresponding to their industries of operation. A significant share of the impact of their direct suppliers lies in upstream compartments of the value chain, especially “raw material production”, energy and transport accounting for the rest of the impacts. Figure 26 presents the split of companies’ direct suppliers’ impact between the two major types of pressures, climate change and spatial pressures. Climate change makes up a very different share of the companies’ direct suppliers’ footprint according to the industry in which they operate. Indeed, spatial pressures account for a higher share of the impact for the companies which suppliers are closer to raw material production (Hospitality). The share of spatial pressures in the footprint may increase as the impacts of other raw materials are taken into account.

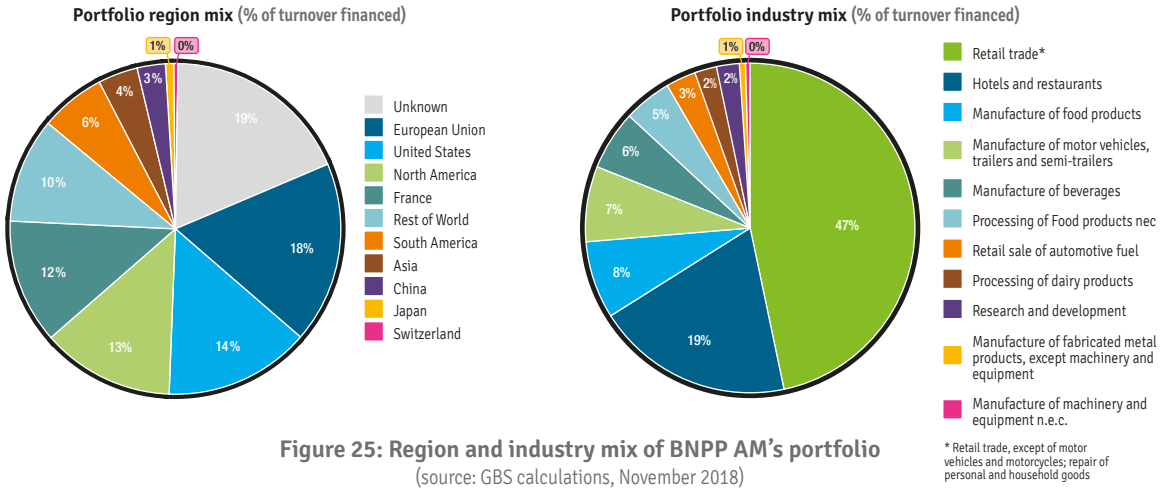


Figure 25: Region and industry mix of BNPP AM’s portfolio
(source: GBS calculations, November 2018)

	Portfolio dynamic footprint (MSA.km²)	Portfolio static footprint (MSA.km²)
Scope 1	0.021	0.008
Scope 2 + Scope 3 tier 1	0.036	4.8
Total	**0.057 MSA.km²**	**4.8 MSA.km²**
Equivalent	8 soccer fields	First three arrondissements of Paris

Table 5: Overall biodiversity footprint of the portfolio (source: GBS calculations, November 2018)

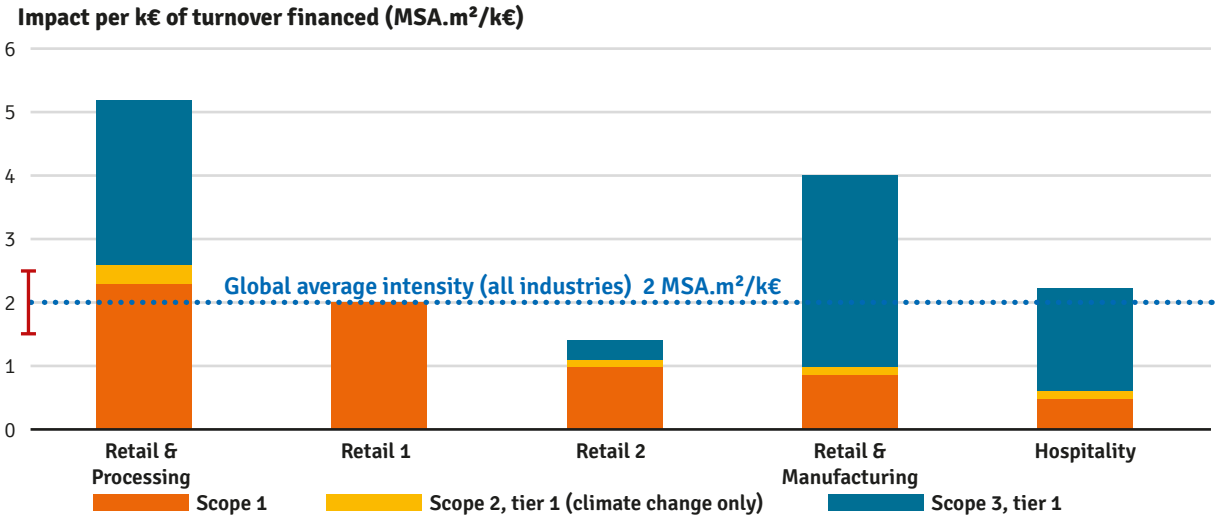


Figure 26: Impact per thousand euros of turnover financed for five companies of the portfolio
(source: GBS calculations, November 2018)

		Raw material production	Raw and secondary material processing	Manufacturing	Retail	Waste and wastewater management	Energy	Transport	Construction	Financial services	Non-financial services and other activities
Retail & Processing	Scope 1		15%		85%						
	Tier 1 of Scope 3	83%					10%				
Retail 1	Scope 1				100%						
	Tier 1 of Scope 3	14%			31%		15%	31%			
Retail 2	Scope 1				100%						
	Tier 1 of Scope 3	56%		5%	6%		21%	5%			
Retail & Manufacturing	Scope 1		8%		87%						
	Tier 1 of Scope 3	89%					5%				
Hospitality	Scope 1										100%
	Tier 1 of Scope 3	89%					5%				

Figure 27: Distribution of companies' impacts along the value chain
(source: GBS calculations, November 2018)

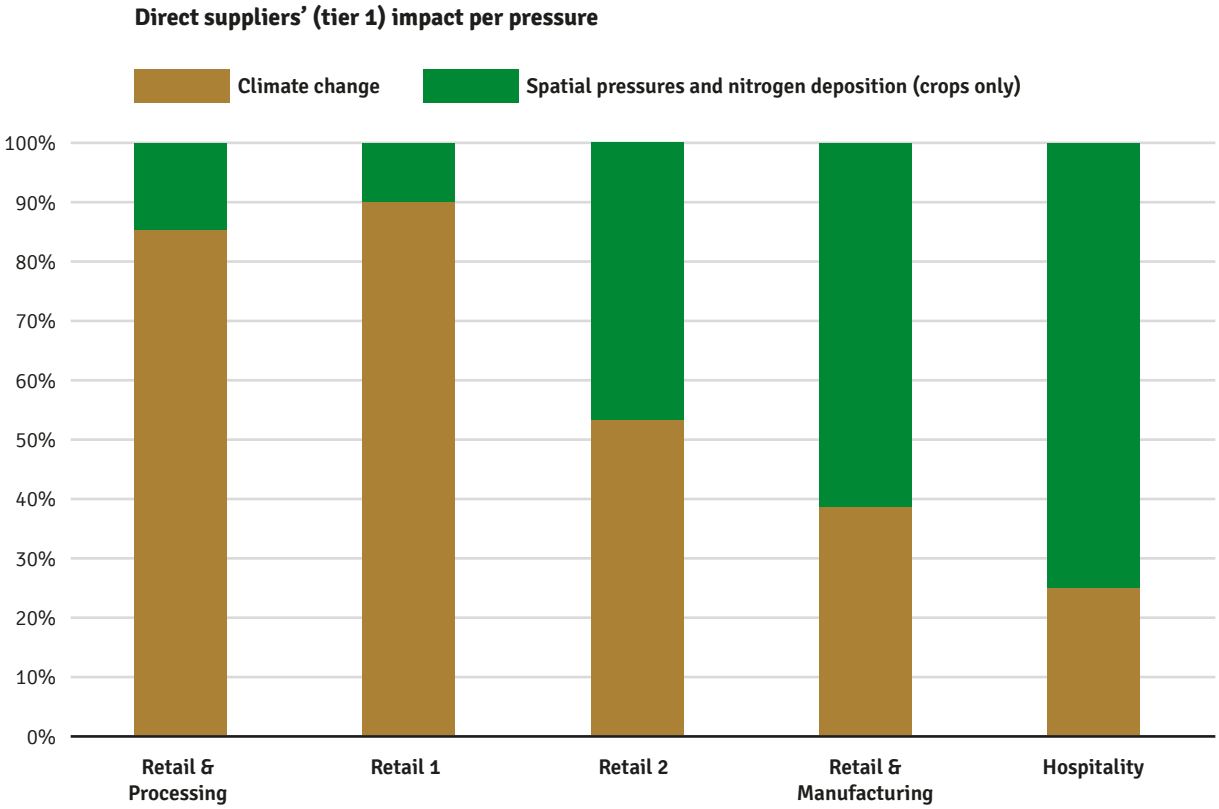


Figure 28: Decomposition of the most intensive companies' direct suppliers' impact per type of pressure (source: GBS calculations, November 2018)

D LESSONS LEARNT

The goal of the case study was to help us develop the GBS methodology by providing the opportunity to road-test the input-output based "default assessment" for listed equity portfolios. Additionally, it enabled to establish and improve the data collection file dedicated to the assessment of financial institutions' funding and investment. It also informed us on the typical data available in companies' annual reports and ESG analysts' private databases like Bloomberg.

In a nutshell, data is most often insufficient (industry and region level of detail) and in varying formats. We thus realised that quite heavy data pre-treatments were needed, which led us to elaborate the guidelines and tools to conduct such pre-treatments.

The case study was also fruitful for BNPP AM which is among the first movers in the field of natural capital. For them, it was the opportunity to better apprehend the biodiversity issue in their activity, to experiment what future biodiversity disclosure processes could be like and to get a head start on the reflection on how biodiversity impact information could be useful to their business in the future.

Concerning the results, the key finding is that the impacts of activities directly under the control of companies (*e.g.* their stores, etc.) often account for only a small fraction of their footprint. It is thus very important to assess their Scope 2 and 3 (upstream) impacts. The GBS allows to do such assessment, as illustrated with the case of these five companies.