

Cosmoproject  
HEALTH & BEAUTY

Water Footprint

# Water Footprint

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## The organisation's water footprint

Integrated measurement that quantifies the potential impacts on the environment related to water resources. A water footprint is complete when the impact indicators are evaluated in a comprehensive and exhaustive way. It is defined as partial when only one of the impact categories is quantified. The indicators that measure the potential load of anthropic activities on the water resource are different and refer to different aspects that can be modified in the natural environment.

In the case of water resource assessments, the focus on the organisation has decisive advantages for communication and decision making. This is particularly true for the non-agricultural sector, where upstream processes such as energy production and waste extraction materials are responsible for the greatest number of potential water-related impacts.

# Water Footprint

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The organisation's water footprint

The organisational water footprint (O-LCA) is based on a series of international standards, which integrate with each other:

- ISO 14040 and ISO 14044 - life cycle analyses
- ISO 14046 requirements for water footprint calculation
- ISO/TS 14072 definition of the steps for life cycle analysis at the organisation level

# Water Footprint

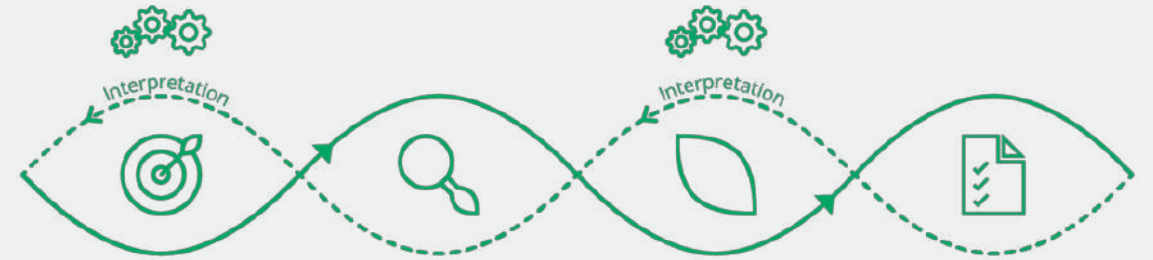
The organisation's water footprint

There are four main phases that characterise an LCA:

1. Definition of the objective of the study, the field of application, the boundaries of the system to be analysed and the functional unit;
2. Inventory analysis, i.e. the quantification of the flows of material and energy over the entire life cycle of the product in question, therefore incoming and outgoing flows;
3. Environmental impact analysis of the life cycle, phase in which the flows of substances and energy identified during the inventory are sorted, classified and aggregated with appropriate weights in different environmental impact categories, also called aggregate impact indicators;
4. Interpretation of the results, carried out on the basis of the methodological assumptions adopted in this phase, the results of the inventory and the environmental impact analysis are evaluated, also through appropriate considerations and additional analyses.

# Water Footprint

## Analysis



**Reporting unit:** Cosmoproject Sp A in its entirety, having its production site located in Italy, in Strada Mazzabue 5 in the municipality of Sorbolo Mezzani (PR).

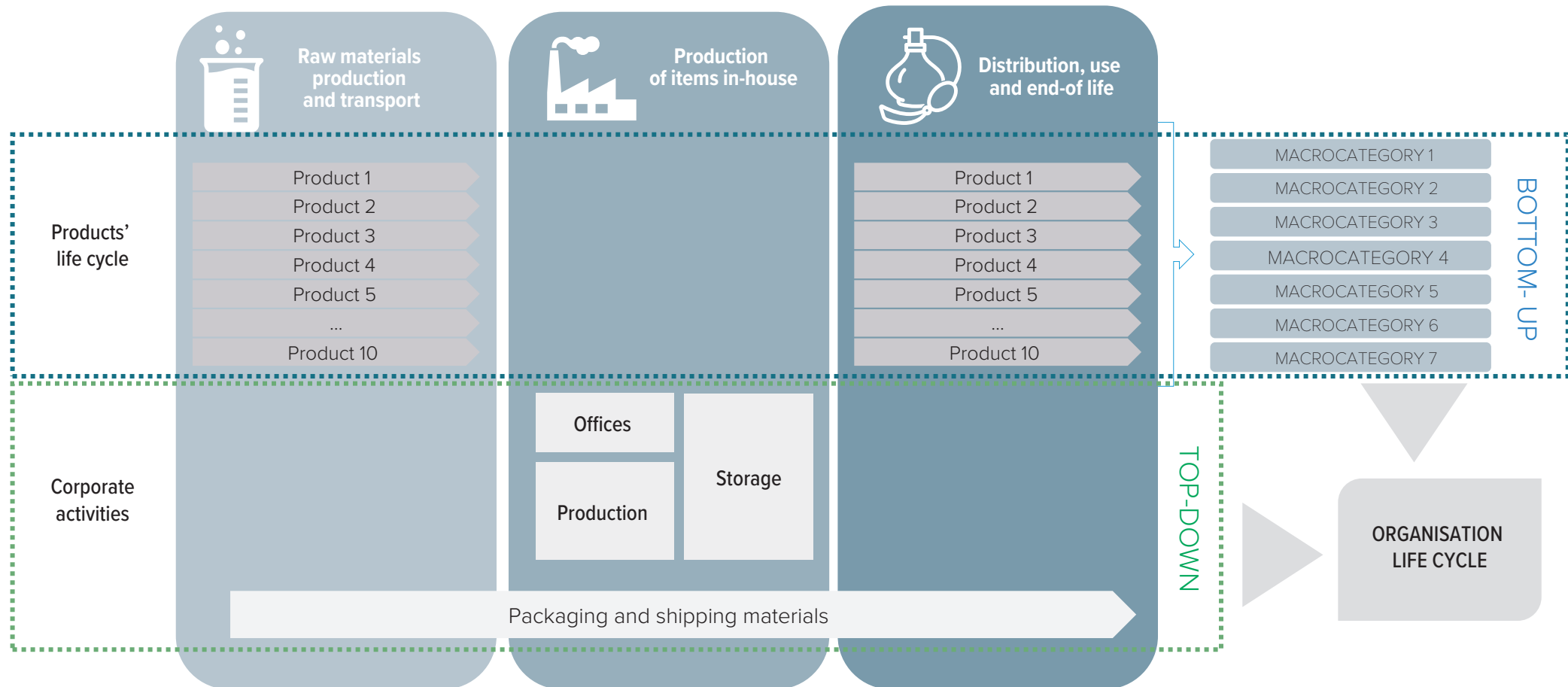
**Reporting period:** 2020

**Reference flow:** All articles created by the Cosmoproject organisation in 2020 divided into product macro categories

The reporting unit is the quantified performance expression of the organisation being studied, used as a reference (ISO/TS 14072)

# Water Footprint

Analysis: “hybrid” approach



# Water Footprint

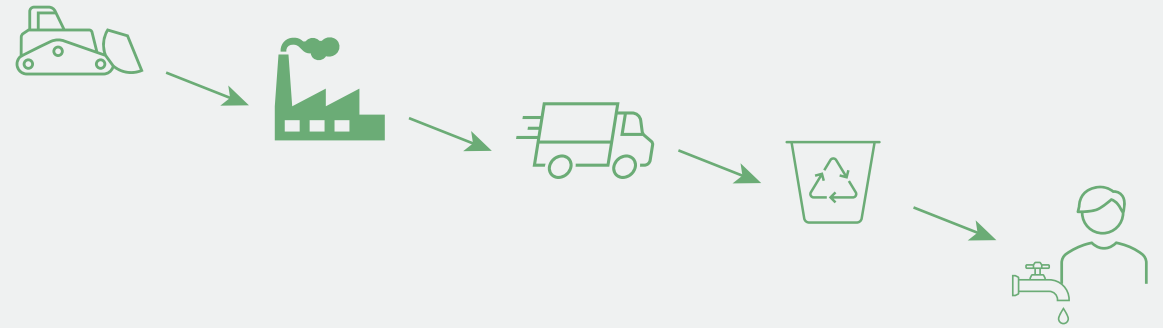
## Analysis

| PRODUCT MACRO-CATEGORY               | BRAND             | BESTSELLER ITEM            |
|--------------------------------------|-------------------|----------------------------|
| OIL-IN-WATER EMULSIONS AND WATER GEL | External branding | Hyaluronic acid face cream |
|                                      | External branding | Tensifier primer           |
|                                      | External branding | Face cream                 |
| TENSILE PASTES WITH CRYSTALS         | External branding | Hair scrub                 |
| TENSILE SYSTEM                       | External branding | Hand soap                  |
|                                      | External branding | Shower gel                 |
| WATER+OILS                           | External branding | Two-phase make-up remover  |
| WATER-IN-OIL EMULSIONS               | External branding | Liquid camouflage          |
| OILS AND ANHYDROWS                   | External branding | Blur Primer                |
| ALCOHOL - PERFUMES                   | External branding | Hand gel                   |

For each bestseller, the consumption of water and raw materials for the formulation was associated with its own product macro category. The association was made on a mass basis.

# Life cycle

## processes



## Upstream

- extraction of raw materials and creation of formulation compounds
- extraction of raw materials and production of packaging materials

## Core

- transport of chemical components and packaging to Cosmoproject
- all flows of material and energy for the creation of final products and their packaging

## Downstream

- shipping of the products
- use by the end customer
- operations of disposal or recovery
- of packaging once the product is finished

EXCLUSIONS: The construction of company factories and machinery for processing products; the production of glues and ink used in packaging; staff business trips and home-work transfers; research and development activities; maintenance of the plant's machinery; the production of labels; the consumption of methane gas for heating, not linked to production.

# Categories

## OF ENVIRONMENTAL IMPACT

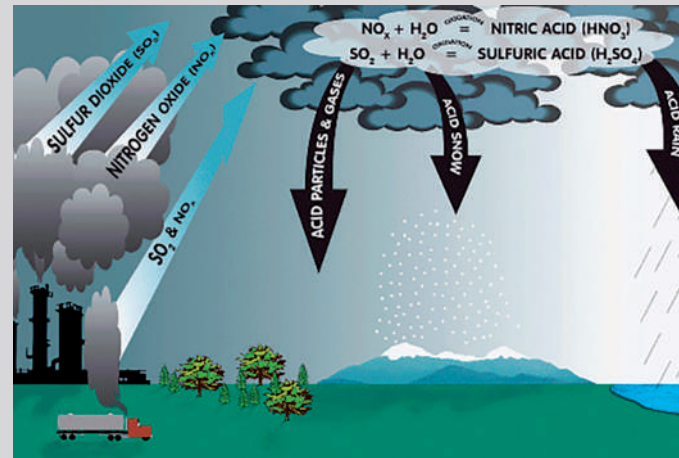
### Water availability footprint



### Water scarcity potential

Indicator connected to specific territorial water scarcity: the resource flows are subtracted from the quantity of water withdrawn, which in the life cycle are reintroduced into water bodies with the same quality as the quantity consumed.

### Water degradation footprint



### Acidification potential

Emissions of acidifying substances that cause the lowering of the pH of lakes, forests and oceans following precipitation that contains them.



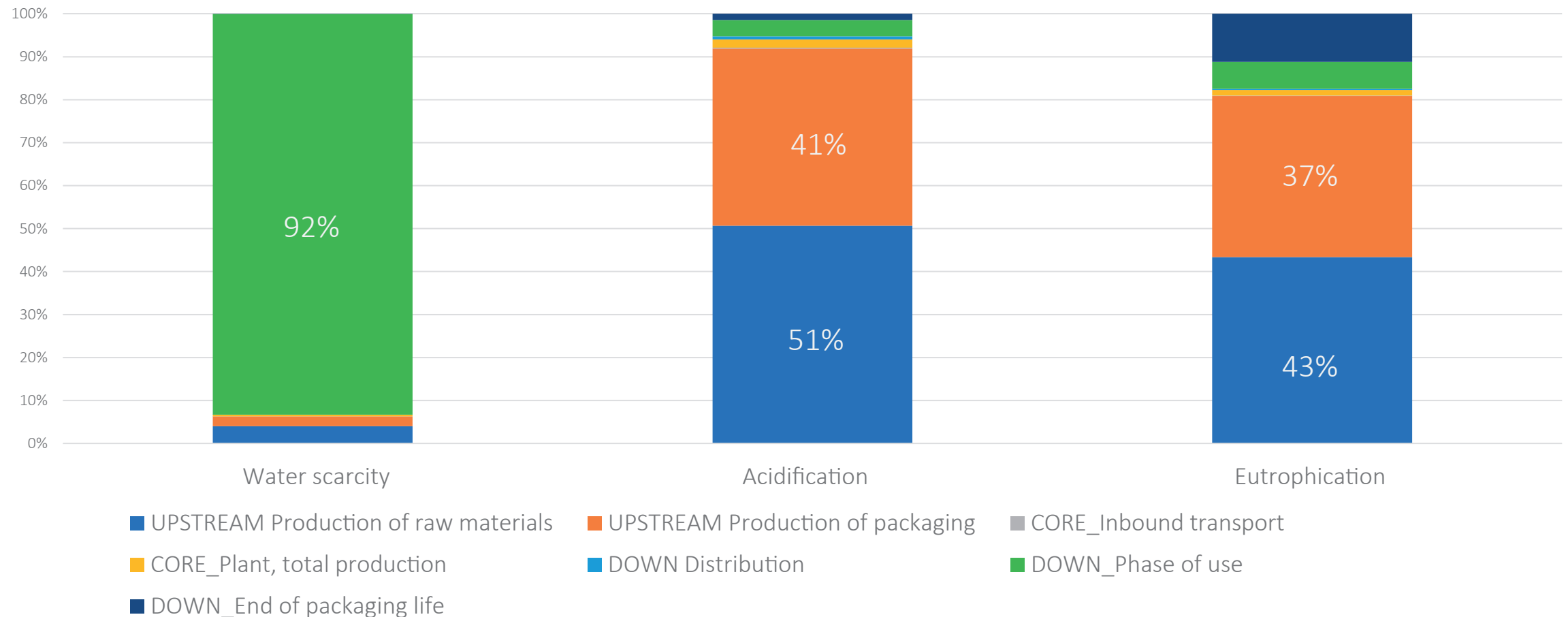
### Eutrophication potential

Emission of substances that generate a condition of proliferation of microscopic algae and, in turn, greater bacterial activity. The consequence is a decrease in oxygen in surface waters (rivers and lakes) and in the soil.

# Water Footprint

## Results

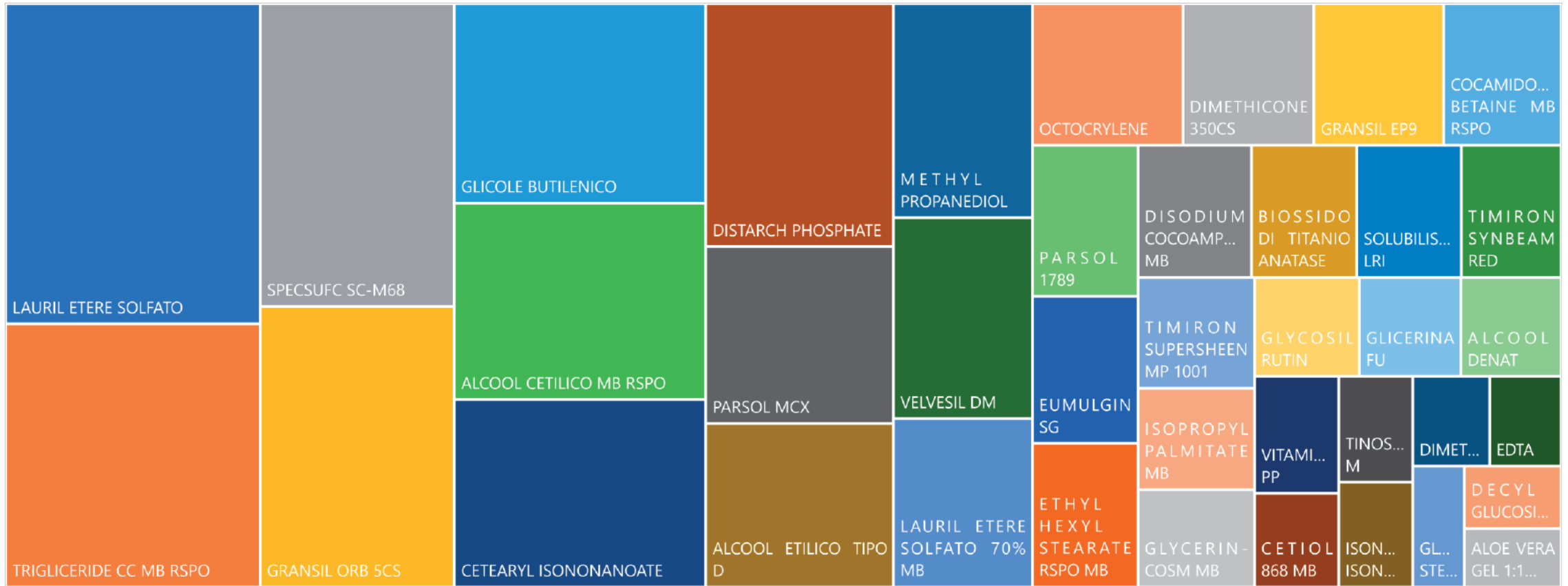
| IMPACT CATEGORY | UNIT OF MEASURE                     | TOTAL VALUE |
|-----------------|-------------------------------------|-------------|
| Water scarcity  | m <sup>3</sup> equivalent           | 3,65E+08    |
| Acidification   | kg SO <sub>2</sub> eq               | 2,26E+05    |
| Eutrophication  | kg PO <sub>4</sub> <sup>3-</sup> eq | 8,98E+04    |



# Water Footprint

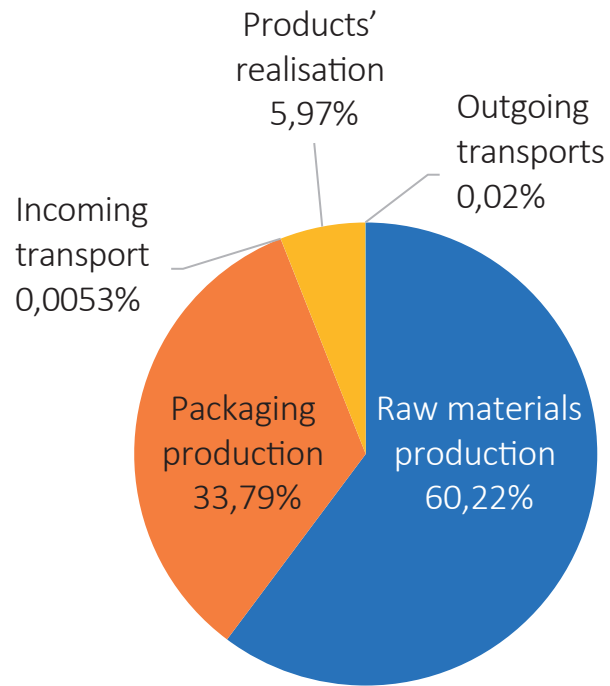
## Results

Incidence of compound production (Water scarcity)

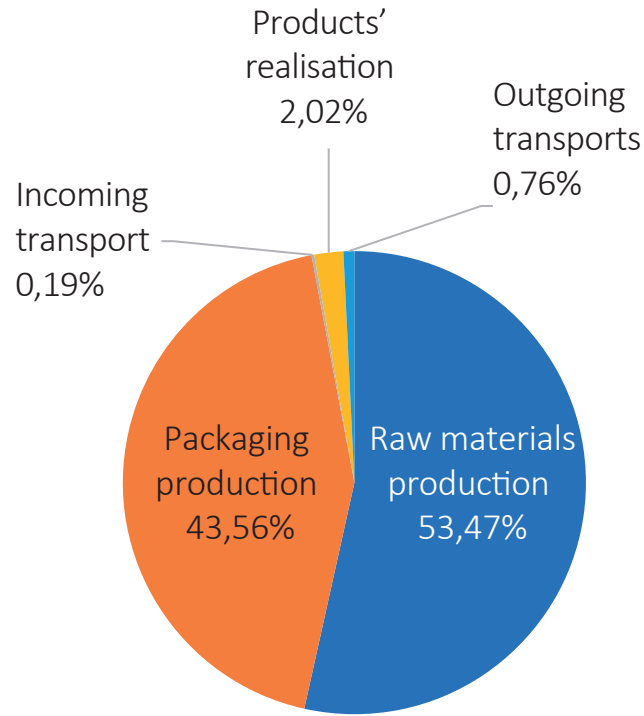


# Water Footprint

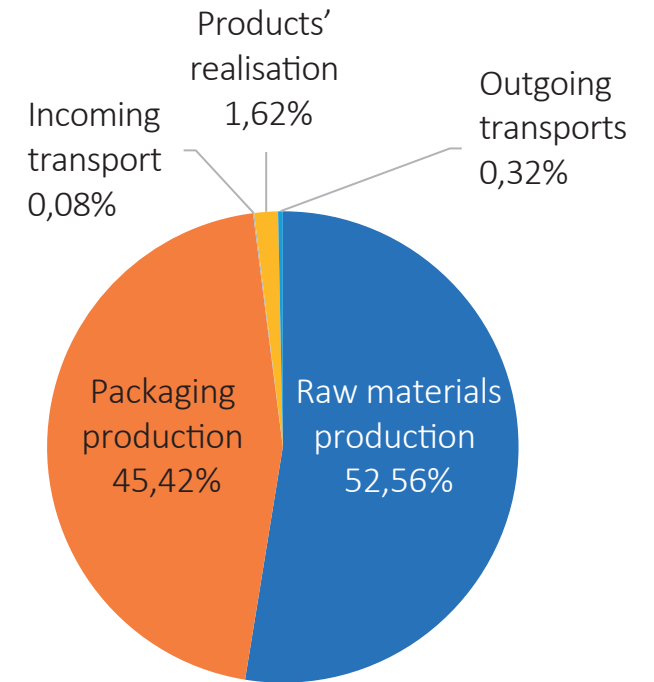
Results, **excluding the usage phase**



Water scarcity



Acidification



Eutrophication

# Water Footprint

## Ideas for improvement

- ◆ **Reduce the water footprint in supply management**

The objective is to account for the environmental impact of the materials with the same technical and economic performance and therefore to proceed with formulation choices (eco design) based on the raw material or packaging materials that guarantee the lowest impact.

- ◆ **Reduce the contribution to eutrophication due to the release of nutrients into factory waste**

Option 1: Treatment of the supernatant of the sludge line with a reactor for the production of “struvite”

Option 2: Post treatment with phytopurification of the purifier discharge and periodic removal and recovery of the biomass

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