Organisation Environmental Footprint (OEF)

2019

Canali S.p.A.

Summary

Canali S.p.A.
Via Lombardia, 17, 20845 Sovico MB

References

Organisation:	Canali S.p.A.
Registered Office	Via Lombardia, 17, 20845 Sovico MB
Business Code (ATECO)	14.1 - Manufacture of wearing apparel, except fur apparel
Geographical validity	The OEF study is developed in the Italian context. The market for the organisation's products is international.
Technical Support	ICA - Società di Ingegneria Chimica per l'Ambiente S.r.l. – Bergamo, Italy
Audit Procedure	Independent external auditor, Certiquality S.r.l.
Certificate number	CERTIFICATE NO. OEF017/22

This study was conducted in accordance with the OEF method defined by Recommendation 2279/2021/EU.

Contents

2 OBJECTIVES OF THE STUDY

A leading manufacturer of luxury tailored garments and proponent of typically Italian masculine elegance, since 1934 Canali S.p.A. has been promoting traditional craftsmanship and Made in Italy, focusing on fabric quality, attention to detail and constant innovation and creativity in its sartorial tradition.
Today, the Canali Group, led by the third generation, relies on 5 production centres in Italy, more than 1500 employees worldwide and 190 boutiques and is present in more than 1000 points of sale in over 100 countries.

The primary values pursued by Canali S.p.A., as declared in its Code of Ethics, include protection of the environment and the safeguarding of the ecosystem through sustainable business decisions based on a conscious balance between economic initiative and environmental concerns.
Respect for the environment and the ecosystem is a primary value for the Company. Therefore, business decisions and operating activities must respond to the principles of balance between economic initiatives and environmental concerns, in full compliance with current environmental and ecosystem protection regulations.
The Company is also committed to making sustainable business decisions that have a negligible impact on the environment; this is achieved through investments in energy efficiency, the quality of the resources used, the low environmental impact of production and the reduction of waste.
Considering environmental protection to be a primary objective to be pursued with a view to continuous improvement, the Company has decided to adopt the LCA (Life Cycle Assessment) approach in order to determine the impacts associated with its activities and the level of significance of its environmental aspects from a *life cycle perspective*.
In particular, it has selected the OEF/PEF method described by European Recommendation No. 2279/2021 to quantify the impact of its production activities on the broad spectrum of environmental sectors, monitored according to the 16 different indicators established by the scheme.
To this end, the impact of the entire organisation (Organisation Environmental Footprint) was quantified.
The results of the study are intended to be an internal tool within the company to investigate the contributions of the various phases of the life cycle of its activities, so that they can be oriented by adopting technologies and operating procedures and using plant and machinery that involve minimal environmental impact and a conscious and ethically oriented use of all resources, including energy.
The results of the study can be used to enhance the company's performance with respect to its (B2C) customers as well.
The study is not intended to directly corroborate comparisons or comparative statements to be disclosed to the public, as there is no sector rule in place relating to the organisation environmental footprint.
The study was audited by an independent third party.

3 DEFINITION OF THE SCOPE OF THE STUDY

3.1 Definition of the organisation (Unit of analysis)

Organisation:	Canali S.p.A.
Registered Office	Via Lombardia, 17, 20845 Sovico MB
Production sector	Manufacture of wearing apparel, except fur apparel
ATECO Code	14.1

The Canali Group includes several production centres in Italy, which are included in the study and listed below.

Sovico	Sovico Logistics, Via Lombardia 17 (MB)
Sovico V.Le Monza	Sovico Logistics, Viale Monza 24 (MB)
Ancon	ANCON Filottrano Via Schiavoni 9
Dalmas	DALMAS S.M. New Pradellona Ind Zone
Pantalonificio Marche	Filottrano Via Dell'Industria 162
Gissi	GISSI Industrial Zone
Triuggio	Via Pellico 2 - Triuggio

For some processes and production, it makes use of contract manufacturers, which are involved in data collection and included in the study.

3.1.1 Product Portfolio

The following table summarises the company's production during the reference year adopted for the study.

Aspect	**Detail**
Product name	Garments
Description	Luxury tailored garments for men
How Long	The possible use and end-of-life scenarios for the products manufactured by the organisation were the result of assumptions and theories, not corroborated by experimental data. Given the lack of robustness of these assumptions, the quantification of the impacts associated with these stages has been preliminarily excluded from the OEF study and will be further investigated in the PEF studies of certain selected garments.
Year	2019
Reference period	One year

Table 3.1 Description of Canali S.p.A. Production

3.2 Definition of system boundaries

As stated in the reference guidelines (European Recommendation No. 2279 of 16/12/2021), two levels of system boundary definition are required for the OEF study:

- organisational boundary (relating to the defined organisation);
- OEF boundary (specifying the upstream and downstream processes included in the analysis).

3.2.1 Organisational boundary

The organisational boundary is defined so as to encompass all facilities and associated processes that are fully or partially owned and/or operated by the organisation and that directly contribute to the provision of the product portfolio. The activities and impacts linked to processes within the defined organisational boundaries are considered "direct" activities and impacts.

In the context of this study, the organisational boundary includes all production sites controlled by Canali S.p.A. and its owned points of sale, as well as some of the logistics processes controlled by the organisation.

3.2.2 OEF boundary

The OEF boundary is broader than the organisational boundary and includes all indirect activities and their impacts. Indirect activities are those that occur upstream or downstream along the supply chains linked to organisational activities.

The OEF boundaries include the activities carried out directly by the organisation (site-level processes) and all upstream activities, encompassing all processes linked to the product supply chain relating to the unit of analysis. Upstream processes include all impacts associated with the production of material and energy flows entering the organisation subject to analysis.

The transport of these flows from the production site to the company was also considered.

All emissions and waste generated by the activities were included. The system boundaries considered in the study are outlined in Figure 3.1. As can be seen in the figure, the transport of finished products to customers/points of sale during the reference year was included, however, the use and end-of-life stages were not considered.

The study is therefore defined as cradle-to-customer-gate. The core processes represented in the Sankey diagram are the direct aspects controlled by the company. The OEF system boundaries also include indirect impacts correlated to upstream processes.

The possible use and end-of-life scenarios for the products manufactured by the organisation were the result of assumptions and theories, not corroborated by experimental data. Given the lack of robustness of these assumptions, the quantification of the impacts associated with these stages has been preliminarily excluded from the OEF study and will be further investigated in the PEF studies of certain selected garments.

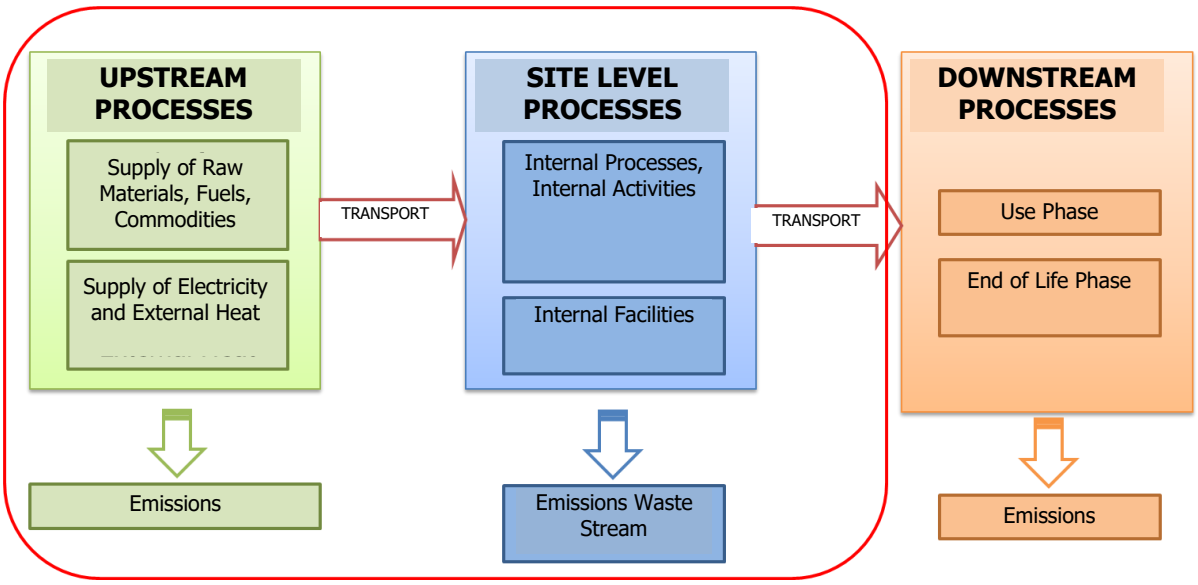


Figure 3.1: General outline of the system boundaries adopted in the study

Having generally outlined the system boundaries adopted in the study, we proceed below by analysing the site in detail, in particular by analysing the process stages, in order to specify which of the processes included in the system boundaries are to be considered foreground processes (those processes in the product life cycle for which direct access to information is available) and background processes (those processes in the product life cycle for which no direct access to information is possible).

Details are given in the table below.

In Figure 3.3 the system boundaries included in the study are graphically illustrated by means of a Sankey diagram.

Processes	Brief description
Wool Fabric Production	Primary data were collected (involving the main supplier) on the main raw materials for the production of the garments, in particular Wool fabrics, which account for about 51%, including: - Energy and water consumption and emissions and waste treatment for the farming phase; - Energy and water consumption and emissions and waste treatment for the yarn production phase; - Energy and water consumption and emissions and waste treatment for the fabric production phase; - Transport between the different stages of the supply chain.
Cotton Fabric Production	Primary data were collected (involving the main supplier) on the main raw materials for the production of the garments, in particular cotton fabrics, which account for about 24%, including: - Resource consumption (fertilisers/pesticides), energy consumption, water consumption and emissions and waste treatment for the cultivation phase; - Energy and water consumption and emissions and waste treatment for the yarn production phase; - Energy and water consumption and emissions and waste treatment for the fabric production phase; - Transport between the different stages of the supply chain.
Cupro Fabric Production	Primary data were collected (involving the main supplier) on the main raw materials for the production of the garments, in particular Cupro fabrics, which account for about 10%, calculated in the LCA study performed by the supplier.
Production of Accessories and Packaging	Production of accessories (buttons) and packaging (cardboard boxes, hangers, film): - Extraction and transport of main raw materials for accessory and packaging production; - Energy consumption (electricity and heat) for accessory and packaging production - Water consumption for accessory and packaging production - Emissions (into air, water and soil) for accessory and packaging production - end-of-life treatment of waste leaving plants for the production of production auxiliaries (additives)
Fuel production	Fuel production including: - Extraction of fuels (natural gas/diesel) - transport of fuels (natural gas/diesel)
Power generation	Electricity production based on the sources indicated by the supplier EON and including impacts related to its transport and transformation.
Transport of Raw Materials, Accessories and Packaging between supplier and Canali	Transport of raw materials, accessories and packaging based on specific distances between suppliers and the Canali plant in Sovico.

Processes	Brief description
Internal logistics of Raw materials between Sovico and internal and third-party production sites	Transport of raw materials, accessories and packaging on the basis of specific distances between the Canali plant in Sovico and internal and third-party production sites.
Garment production at Canali internal Production Sites	Consumption of Raw Materials (fabrics) and energy related to the different steps in the process, in particular: - consumption of raw materials and additives - Energy consumption; - Emissions into air, water and soil; - Purchased electricity and thermal energy - Packaging - end-of-life treatment of waste generated; for all activities taking place at Canali S.p.A.'s internal production sites.
External Production (Industrialised)	Consumption of Raw Materials (fabrics) and energy related to the different steps in the process, in particular for the production of externally manufactured garments through the involvement of the main subcontractors (which account for about 77% of activities performed externally) to obtain primary data associated with: - consumption of raw materials and additives - Energy consumption; - Emissions into air, water and soil; - Purchased electricity and thermal energy - Packaging - end-of-life treatment of waste generated;
External Production (Marketed)	Consumption of Raw Materials and energy, particularly for the production of the marketed articles.
Employee transport	Transport to and from the Canali Spa production sites of employees (around 800) was included, taking into account specific origins and actual modes of transport (car/bus/foot).
Business Travel	Travel associated with business trips of Canali Spa employees has been included, taking into account specific destinations and actual modes of transport (air).
Internal logistics Finished Products internal production and third-party sites and Sovico	Transport of finished products including accessories and packaging based on specific distances between internal and third-party production sites and the Canali plant in Sovico
Transport of finished products	Transport of the finished product to customers based on market destinations. Shipments were modelled on the basis of primary data regarding product destinations and on the basis of actual shipping and sales methods (E-commerce/Stores/Company Stores/Retail).
Stores	The consumption of energy and utilities was modelled from the points of sale directly controlled by Canali S.p.A.
	Background Processes
	Foreground Processes

Table 3.2 Background and Foreground Processes

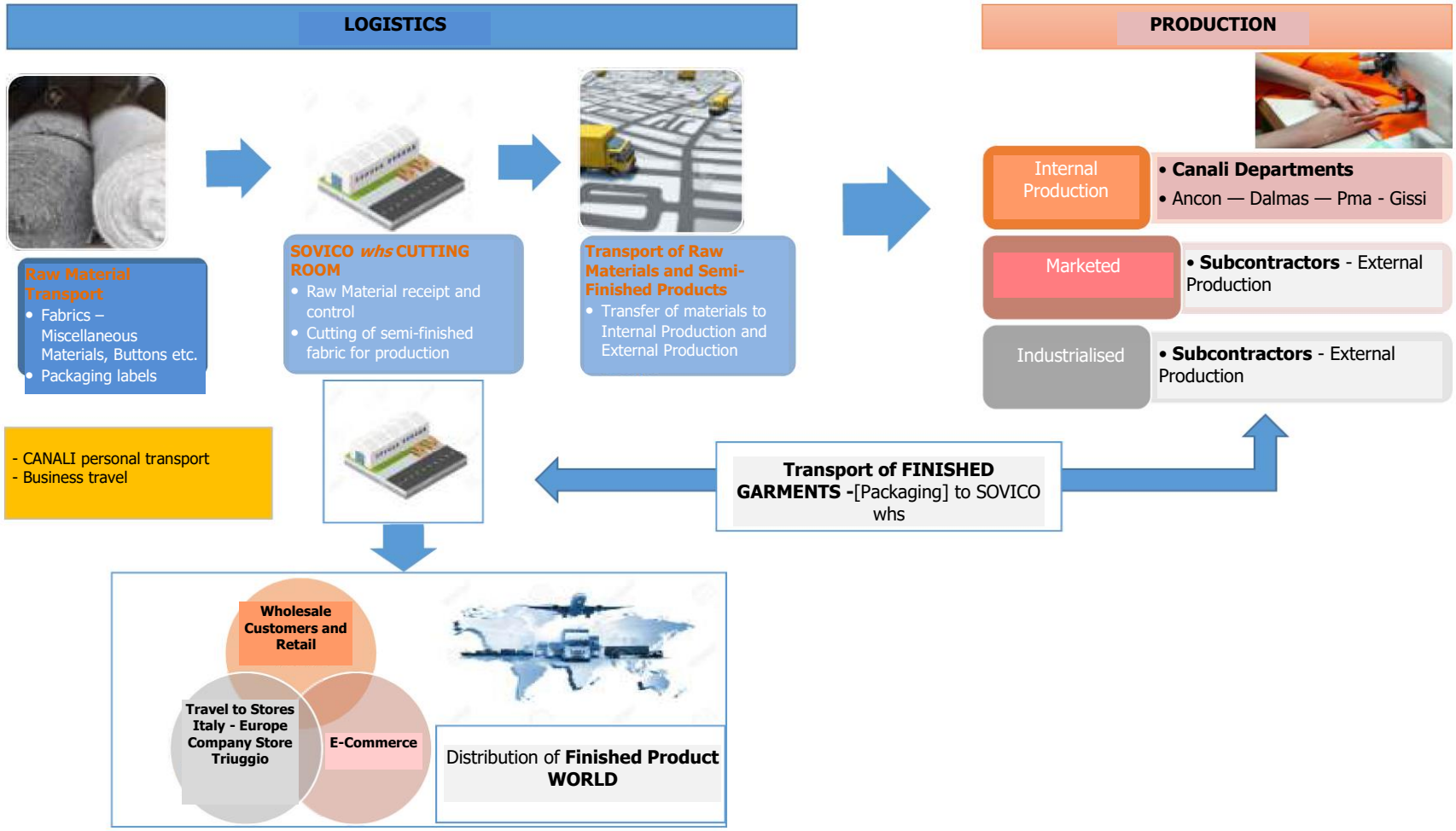


Figure 3.2 Stages of the production process

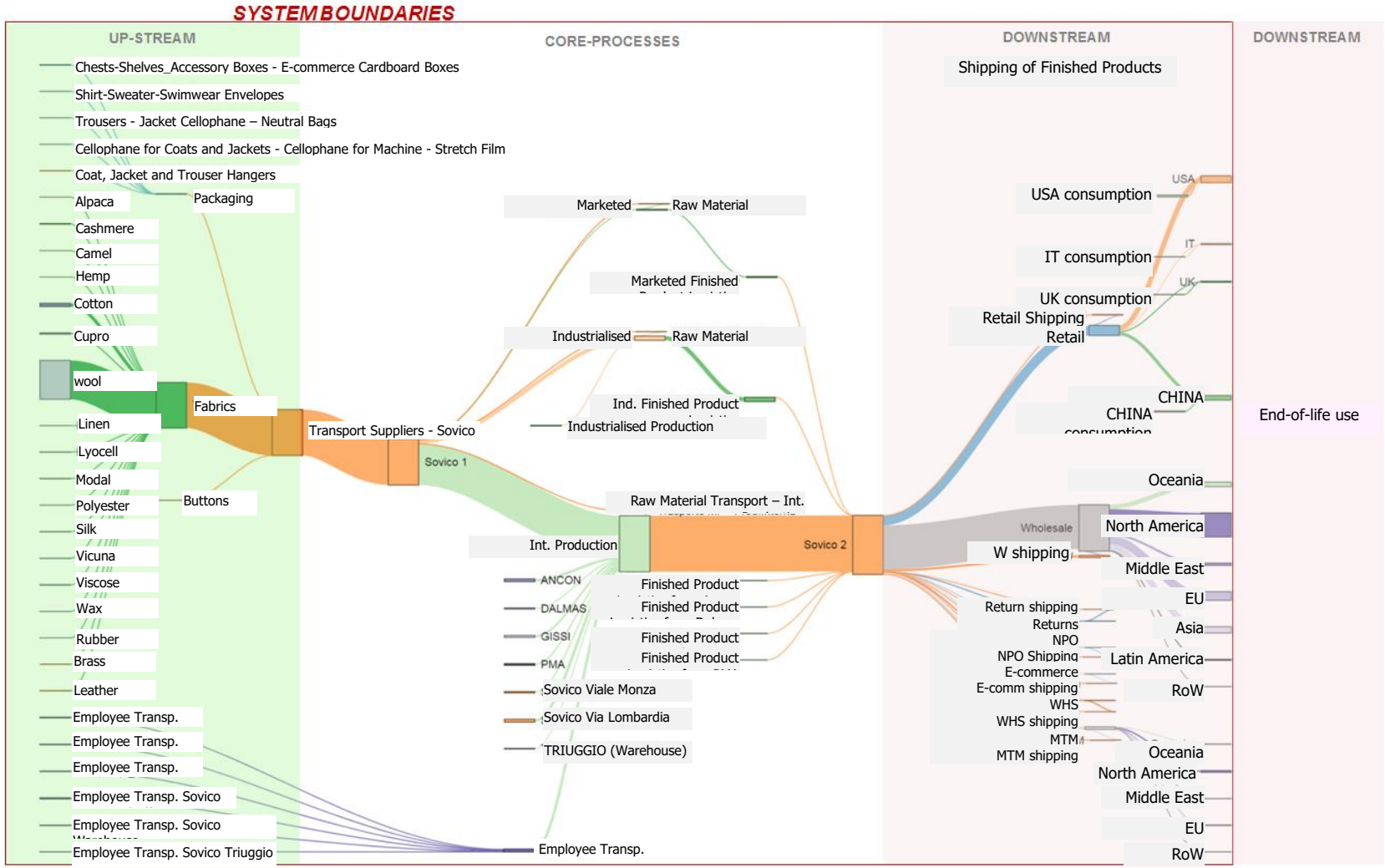


Figure 3.3 System Boundaries (the thickness of the streams is proportional to Climate Change impact category)

3.3 Assumptions, limitations and cut-offs

All data collected during the reporting period (year 2019) were taken into account in the analysis, regardless of their percentage contribution in terms of mass. The exclusion of specific consumption items for which no reliable LCA data could be found in the databases is in no case higher than 1% of the total by mass. For cut-offs of 1%, infrastructure and capital goods were excluded. This includes employee transport by private car or public transport, business travel and packaging transport. The composition of the raw materials noted above was modelled as far as possible by involving the suppliers of the main raw materials, namely Wool, Cotton and Cupro, which account for 82% of the total. The fabrics used in smaller quantities were modelled using available databases, particularly with reference to the Ecoinvent 3.8 database.

Specific data on incoming materials were also collected in terms of suppliers, distances and modes of transport, energy consumption, water discharge and air emissions, waste production and transport.

The electricity purchased by the organisation, and in relation to contract manufacturing, was modelled conservatively as the Italian 2019 Residual Mix[1]. Representativeness, appropriateness and types/sources of data and information

Following what is laid out in the specific management procedure, which defines at company level how input and output data should be collected, the sources and respective responsibilities, the organisation has compiled an inventory of all inputs and outputs for its proprietary processes.

The data collected are organised in Excel sheets for each stage of the production cycle under consideration. In particular, internal production data are broken down in the sheets on raw materials, energy consumption, emissions, waste, transport and maintenance operations. For each piece of data, the reference management source and the person responsible for the data were defined. The data were then critically reviewed by internal audit to validate their comprehensiveness and accuracy.

3.4 Selection of impact categories

In the impact assessment of the product's environmental footprint, all impact categories and relative methods established in Recommendation 2021/2279/EU were applied.

3.4.1 Selection of additional environmental information to be included in the OEF

The predefined set of environmental footprint impact categories and the predefined impact assessment models adequately cover the potential environmental impacts of the organisation under assessment.

3.4.2 Selection of additional technical information to be included in the OEF

No additional technical information is evaluated in this OEF study

[1] *European Residual Mixes - Results of the calculation of Residual Mixes for the calendar year 2019 - Version 1.1, 2020-09-08 (European Residual Mixes 2019 - Association of Issuing Bodies)*

3.5 Multifunctionality

The OEF was calculated using specific data representing resource and waste flows which cross organisational boundaries. The OEF therefore was not calculated by considering the individual products of the organisation. No allocation procedure had to be applied to disaggregate the product level data, taking into account the multifunctionality of the process.

The organisation therefore did not need to deal with multifunctionality problems at product and plant level. Further detailed analyses were developed within the scope of PEF studies on the garments selected by the organisation.

4 COMPILATION AND RECORDING OF RESOURCE UTILISATION AND EMISSION PROFILES

An inventory analysis of all incoming/outgoing material/energy flows and emissions to air, water and soil was carried out for the plant under assessment as the basis for modelling the study, using directly plant-specific data wherever possible.

As far as time aspects are concerned, the specific data refer to the **year 2019**. *Non-elementary* flows were modelled to be transformed into *elementary flows*. For background processes for which primary data could not be obtained, generic data were used deriving from official databases in their most up-to-date version (**Ecoinvent v. 3.8** Database), representative of the Italian and Central European situation, particularly for some of the fabrics used. As previously illustrated for the most widely used fabrics, suppliers were involved to obtain primary data.

5 CALCULATING THE RESULTS OF ORGANISATION ENVIRONMENTAL FOOTPRINT IMPACT ASSESSMENTS

The software used for modelling the environmental impact results is *SimaPro 9.4*.

The method used in the calculation is as follows:

- *EF 3.0 Method (adapted) v.1.03*

5.1 Results

The following table shows the environmental impact results for the entire organisation of Canali S.p.A. during the year 2019. These overall results were analysed in detail at the different stages of the supply chain. In order to identify the most relevant impact categories, the environmental impact results were normalised against the reference data set forth in the most recent reference guidelines for the implementation of OEF studies, compliant with Recommendation 2279/2021/EU1 and subsequently weighted. The impacts that emerged as most relevant from this assessment are shown in the table.

Impact Category	Unit of Measurement	CANALI (entire organisation) 2019
Climate change	kg CO_2 eq	29,848,324
Particulate matter	disease inc.	1.61E+00
Acidification, terrestrial and freshwater	mol H+ eq	223,930
Eutrophication, terrestrial	mol N eq	840,682
Water scarcity	m^3 depriv.	52,725,120
Resource use, energy carriers	MJ	256,679,104
Resource use, minerals and metals	kg Sb eq	169

Table 5.1: Canali 2019 OEF study environmental impact indicator values

6 INTERPRETATION OF ORGANISATION ENVIRONMENTAL FOOTPRINT RESULTS

6.1 Data quality assessment

It is reiterated that all data relating to processes directly controlled by the organisation, and also those relating to the most significant processes located upstream of the gates, are primary data. When the formula given in the guidelines for calculating the overall data quality rating is applied, the data quality rating of the data used is found to be of Excellent quality. The requirements set forth in the reference Guidelines for the study are therefore met.

6.2 Hotspot Analysis

The results obtained for each impact category were then interpreted. In order to highlight the most relevant impact categories, the environmental footprint results were normalised and weighted as described in the previous paragraphs.

In accordance with the Recommendation, impacts associated with the organisation's direct and indirect activities were calculated separately.

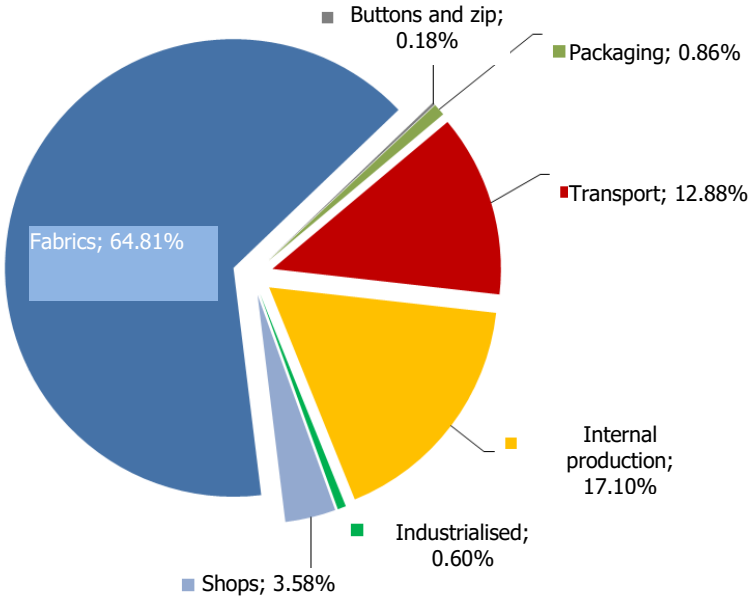
Direct activities are those that occur within the organisational boundaries and are owned and/or managed by the organisation (site-level activities). Indirect activities refer to the use of materials and energy and the release of emissions that are associated with upstream goods/services or that occur downstream of the organisational boundary in support of the production of the product portfolio.
The breakdown between direct and indirect activities for the organisation is shown in the following table.

Impact category	**UoM**	**Direct**	**Indirect**	***Percentage distribution***	
				Direct	***Indirect***
Climate change	*kg CO_2 eq*	6,547,598	23,300,726	*21.94%*	*78.06%*
Particulate matter	*disease inc.*	0.11	1.50	*7.00%*	*93.00%*
Acidification	*mol H+ eq*	20,897	203,033	*9.33%*	*90.67%*
Eutrophication, terrestrial	*mol N eq*	41,453	799,229	*4.93%*	*95.07%*
Water use	*m^3 depriv.*	3,048,949	49,676,171	*5.78%*	*94.22%*
Resource use, fossils	*MJ*	99,396,954	157,282,149	*38.72%*	*61.28%*
Resource use, minerals and metals	*kg Sb eq*	29	140	*17.23%*	*82.77%*

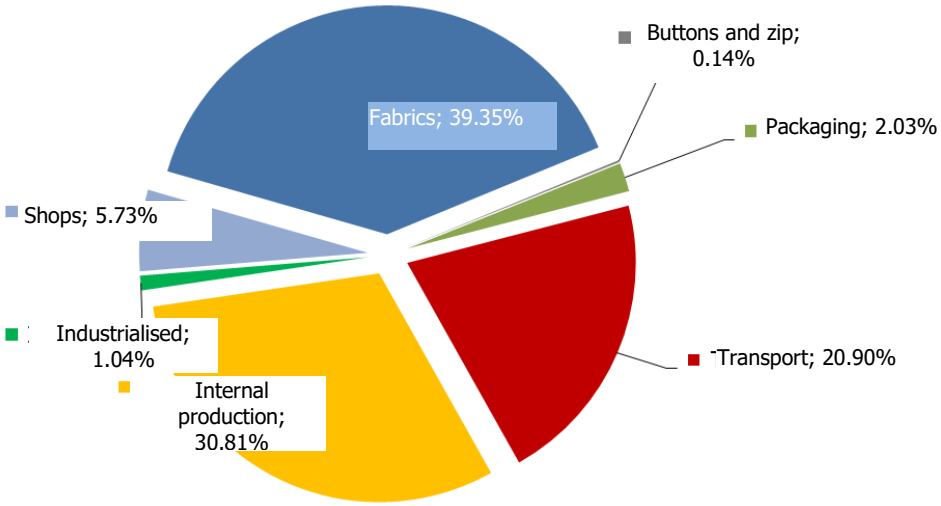
Table 6.1 Breakdown of results between direct and indirect impacts of the organisation

An analysis was then developed to highlight the life cycle stages, processes and elementary flows that have the greatest impact on the different impact categories (Hotspot Analysis). In order to better understand the results of the Hotspot Analysis, the results were represented by means of pie charts showing the distribution of the different impact indicators between the different contributions.
Indeed, the value of each impact indicator has been broken down between the various contributions, highlighting in particular which are attributable to the production processes taking place at the plant and which are instead associated with other stages of the life cycle.
From the analysis, it is possible to highlight the relevance of raw material input production for all impact categories that emerged as relevant from the normalisation analysis and the weighting of the results.

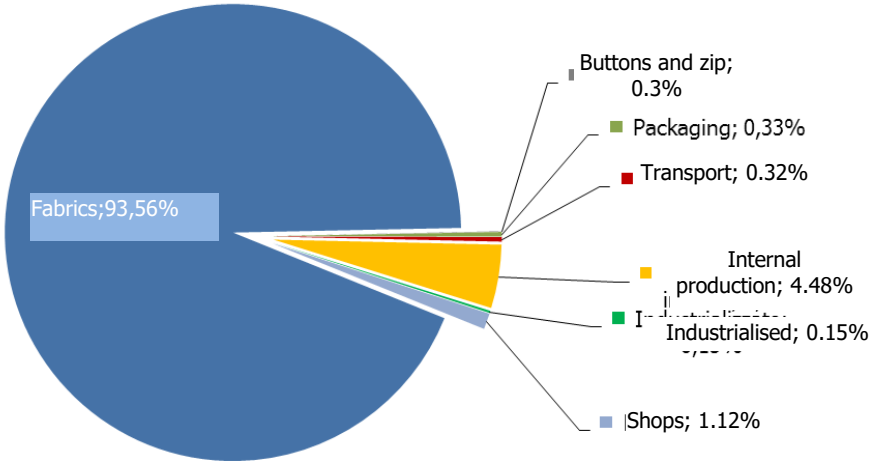
Canali OEF 2019
Climate change - kg CO_2 eq



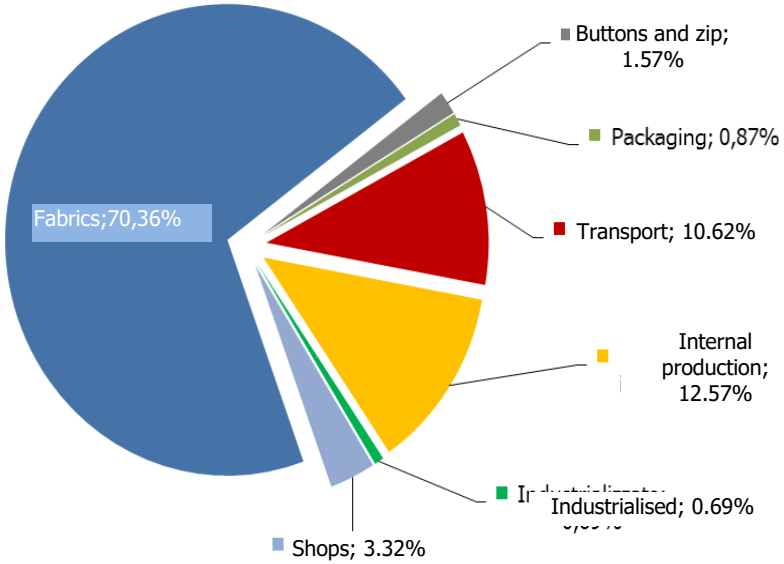
Canali OEF 2019
Resource Use, Energy - Mj



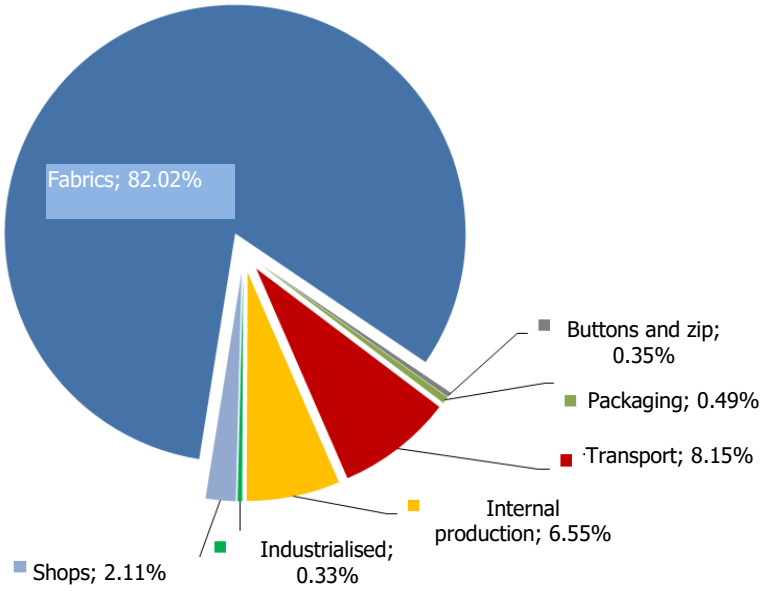
OEF Canali 2019
Water Use - m^3 water eq



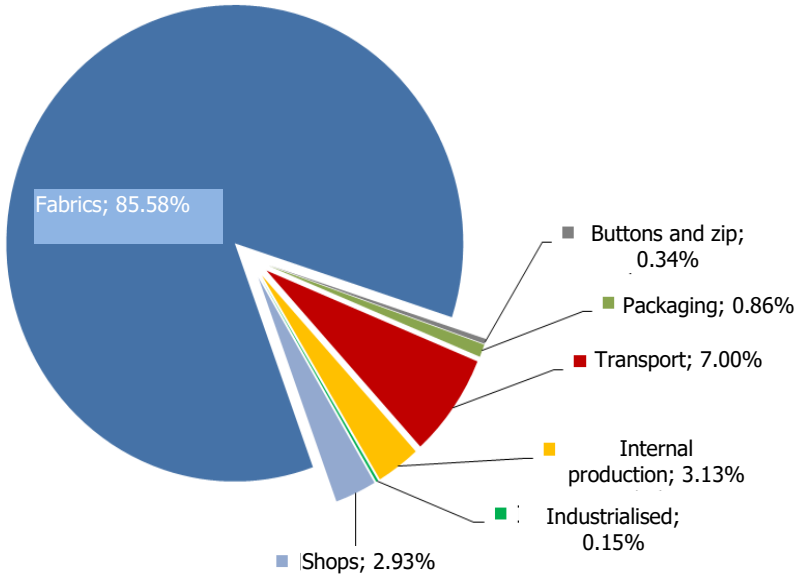
OEF Canali 2019
Resource Use Mineral & Metals - $kgSb_{eq}$



Canali OEF 2019
Acidification – mol $H+_{eq}$



Canali OEF 2019
Particulate Matter – disease inc.



6.3 Uncertainty assessment

The following table shows the results of the uncertainty analysis performed for each of the impact indicators relating to the environmental footprint of the organisation. A Monte Carlo Analysis with a 95% confidence interval was used to assess the uncertainty associated with the results. Analysing the results, it is observed that amongst all impact indicators, those with the lowest standard deviation are GWP_{100}, acidification, and terrestrial eutrophication. Also of note is the high uncertainty associated with the Water Footprint category, associated with high uncertainty values that depend on the characterisation models that are still being developed.

Impact category	Unit	VC%
Acidification	mol H+ eq	
Climate change	kg CO_2 eq	
Eutrophication, terrestrial	mol N eq	
Particulate matter	disease inc.	
Resource use, fossils	MJ	
Resource use, minerals and metals	kg Sb eq	
Water use	m^3 depriv.	

Key	
	VC <10%
	10% < x < 20%
	20% < x < 50%
	>50%

Table 6.2: Indicator uncertainty analysis - 95% confidence interval

7 CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

One of the main purposes of an OEF study is to provide the basis for evaluating, monitoring and attempting to improve the environmental performance of the product/organisation over time. This aspect is also key in determining the environmental aspects, the impacts associated with the company's activities and the level of significance of the aspects from a life cycle perspective (LCP).

The OEF study is a valuable tool that helps to identify opportunities to improve an organisation's environmental performance at different stages of the life cycle, providing information that enables strategic planning, helping to make choices according to objectively developed priorities, to design or redesign products or processes, to choose environmental performance indicators and their measurement techniques, and to develop marketing strategies.

The analysis of the results shows that the most relevant impact categories, i.e. Climate Change and Resource Use (Energy Carriers), show a similar distribution of contributions between the different life cycle stages, mainly related to raw material inputs. It is specified that the uncertainty associated with these categories found to be relevant is low, so the results obtained are considered reliable.

The contribution to these indicators associated with the energy carriers used (Electricity and Natural Gas) at internal production sites is also significant. The identification and implementation of energy efficiency opportunities can certainly provide support in reducing impacts. These interventions, in terms of both management and technological interventions and energy procurement opportunities, would make it possible to reduce this contribution.

Optimising logistics and transport would reduce their significance on the Climate Change indicator, currently at around 10%. A possible impact reduction strategy could be related to the optimisation of employee transport to and from different locations by car, which accounts for 5% of the indicator.

As can be seen from the analysis, another significant contribution associated with the production stage directly controlled by Canali is water consumption, which accounts for about 10% of the "Water Use" category. Interventions aimed at optimising the use of water resources would reduce this contribution. The overall quality of the model input data is very good, as primary data were used for modelling the main raw materials, i.e. wool fabric, cotton fabric and cupro, by involving Successori Reda, Cotonificio Albini S.p.A. and Asahi Kasei Corporation. In order to improve the model, also in view of the relevance of raw materials, equal to about 75% on the different impact categories, a possible development would be the involvement of other suppliers. This would enhance the inherent potential of the OEF-PEF methodology with a view to sustainability and supply chain traceability. Specific PEF studies were developed on the different products, also covering phases downstream of organisational boundaries and in particular garment use and end-of-life. This made it possible to promote the reduction of impacts throughout the production chain related to the intrinsic characteristics of Canali garments, characterised by high durability and repairability.