SIEVED TOMATOES "LA RUSTICA"

CAN
3x2,5Kg

Environmental Product Declaration

An EPD should provide current information, and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.
This EPD is compliant with ISO 14025.

Programme: The International EPD® System, www.environdec.com

Programme operator: EPD International AB

Conserve Italia

EPD®

CPC CODE
2139 - Other prepared and preserved vegetables, pulses and potatoes

GEOGRAPHICAL SCOPE
Europe

PUBLICATION DATE
21-03-2022
VALID UNTIL: 16-03-2027

REV.
0.0

N° REG.
S-P-05165

VALIDATED
Environmental Product Declaration

1. THE ENVIRONMENTAL PRODUCT DECLARATION

WHAT IS EPD (ENVIRONMENTAL PRODUCT DECLARATION)

The EPD (Environmental Product Declaration) is a document verified and registered that communicates transparent and comparable information about the environmental performance of a product evaluated along its life cycle.
The Environmental Product Declarations take advantage of new market opportunities to inform consumers and stakeholders about the environmental performance of products and services. The peculiarities of the EPD translate into a series of advantages both for organizations that process declarations and for those who use the information contained in them.

The **International EPD® System** is the program for environmental declarations based on the ISO Standard 14025.

More information on **www.environdec.com**

WHAT ARE ITS CHARACTERISTICS

- ***OBJECTIVE.*** Environmental performance is calculated using the life cycle analysis methodology (Life Cycle Assessement, LCA), following the ISO 14040 series.
- ***CREDIBLE.*** The EPD is verified by a third-party body.
- ***COMPARABLE.*** *EPDs belonging to the same product category are comparable since they are developed according to the same rules and requirements (PCR, Product Category Rules).*

THE CERTIFICATION OF THE EPD PROCESS OF CONSERVE ITALIA

Conserve Italia has decided to certify the own internal elaboration process of the Environmental Declarations using a reliable and consolidated model of collection, management and processing of data necessary for the realization of the LCA studies of the products subject to certification.

The Control System implemented by Conserve Italia has been verified by a third-party body, in order to certify that all the Environmental Declarations are performed in accordance with the requirements of the International EPD® System. Conserve Italia, having obtained a certification of the process EPD, can independently draw up the Environmental Product Declarations of its products.

2. SIEVED TOMATOES "LA RUSTICA"

Cirio Sieved tomatoes "La Rustica" is obtained only from selected tomatoes, using only tomatoes come from certified integrated production, harvested and processed on the same day.

THE INGREDIENTS

Acidity regulator: citric acid

Tomato

NUTRITIONAL VALUES
Average values per 100g of product

Energy	135 kJ - 32 kcal
Protein	1,2 g
Carbohydrates	5,3 g
of which sugar	4,2 g
Fat	0,1 g
of which saturated	0,1 g
Fibre	1,7 g
Salt	0,02 g

CONTENT DECLARATION	Sieved tomatoes (kg)	Salt (kg)	Citric Acid (kg)	Water (kg)	Primary Packaging (kg)	Secondary Packaging (kg)	Tertiary Packaging (kg)
REFERRED TO 1 CAN	4,950	-	0,002	-	0,243	0,010	0,088
REFERRED TO 1 KG	1,980	-	0,001	-	0,097	0,004	0,035

PACKAGING	Container size	Sell unit	Cluster	Pack format
TINPLATED STEEL CAN AND LID	3Kg	3	-	3

3. SIEVED TOMATOES

With regard to the production process of sieved tomato, the fresh tomatoes are finely cut and the product is immediately blanched to inactivate the enzymes and thus avoid the degradation of the product while preserving its flavour and colour characteristics. Once this operation is completed, the shredded tomato passes into the purifying machines which eliminate seeds and skins and the product thus takes on a characteristic velvety appearance. Part of the water is allowed to evaporate in special concentrators (so much so that the puree can be defined as a partially concentrated tomato juice), with a minimal reduction of some nutritional properties, but with an increase in others (e.g. lycopene). The product is then bottled and pasteurized at a temperature above 85°C for a few tens of seconds. In this way, the product is stable and can be preserved over time without losing its original characteristics.

4. THE PRODUCT

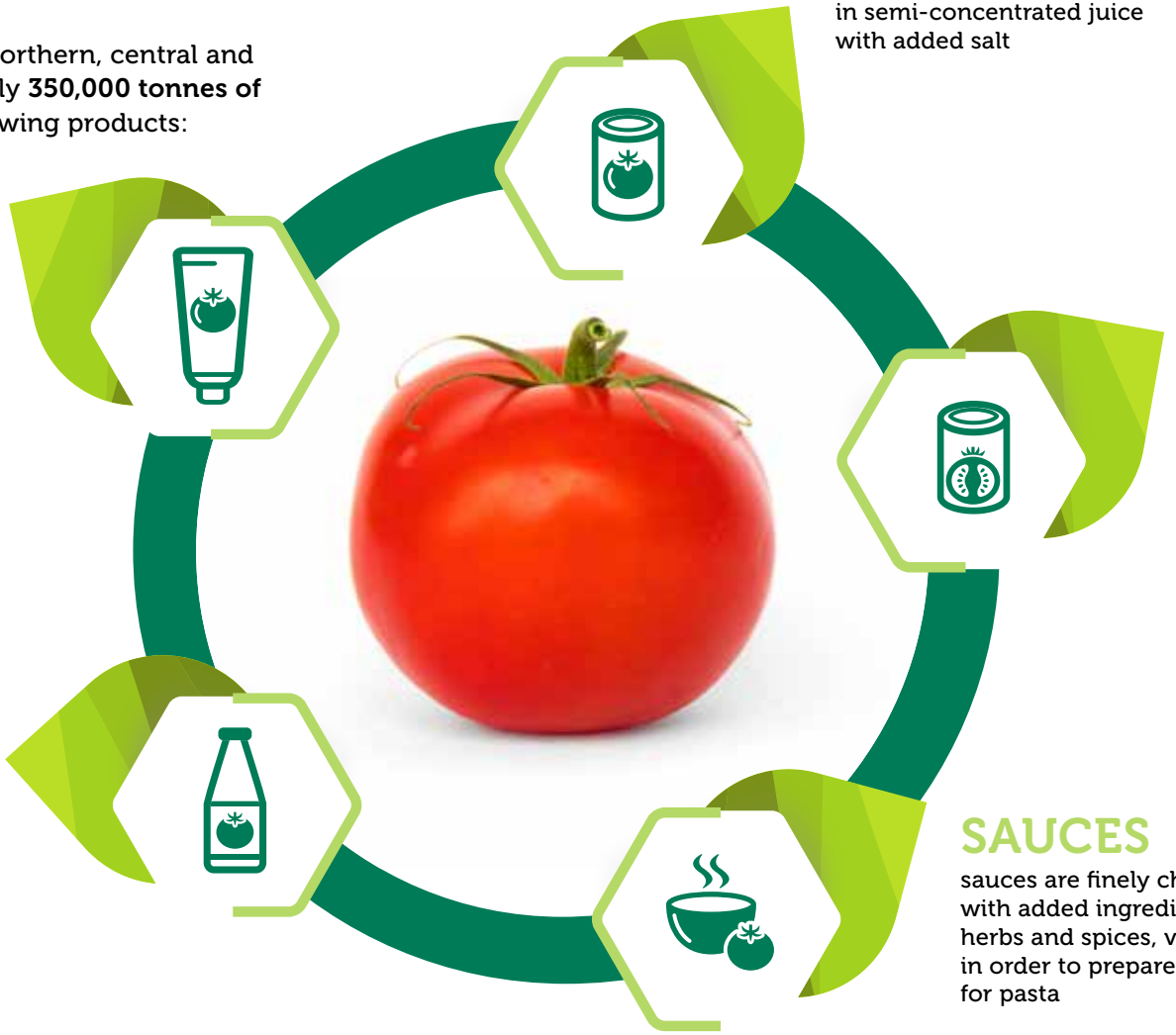
Italy is the World's second biggest producer of tomatoes after the United States and the biggest exporting country of tomato based products.
Conserve Italia's plants, located in northern, central and southern Italy, process approximately **350,000 tonnes of tomatoes** a year, obtaining the following products:

PEELED TOMATOES

preserved tomatoes produced using plum shaped tomatoes in semi-concentrated juice with added salt

CONCENTRATED TOMATOES

product obtained starting from tomato juice thermally processed and concentrated to reach different levels of concentration to obtain single, double or triple concentrate



CHOPPED TOMATOES

preserved tomatoes produced using fresh round variety tomatoes – peeled and chopped into pieces

SIEVED TOMATOES

fresh tomatoes, sieved and slightly cooked to reduce the water content

SAUCES

sauces are finely chopped tomato pulp with added ingredients, such as olive oil, herbs and spices, vegetables, meat, etc, in order to prepare ready dressings for pasta

5. THE GROUP

Conserve Italia's legal personality is that of an agricultural co-operative and is the mother company to other subsidiary companies in Italy and in Europe.

6. THE MISSION

Conserve Italia

The mission statement of Conserve Italia is "to be a leader company in Europe in the sector of preserved foods to achieve the highest value on fruit and vegetables supplied by associated farmers and give to consumers, thanks to food chain control and own brands reliability, guarantees on quality and food safety".

Conserve Italia represents the leader industry in the Italian field and it is ranked among the leader European companies (Source: Iri Audit incl. discount A.T. June 2013).

The Group processes approximately

650.000

tonnes of raw materials every year; fruit, vegetables and tomatoes, grown over a surface area of over

20.000

hectares, which are processed in 12 production plants; 8 in Italy, 3 in France and 1 in Spain.

Valfrutta · Yoga · Derby blue · CIRIO 1856 · Jolly Colombani · Juver

Conserve Italia Group's brand policy has always constituted one of the strategic guidelines and today the branded sales (Valfrutta, Yoga, Derby Blue, Cirio, Juver, St Mamet, Jolly Colombani) represent about 69% of the total turnover; the remaining business being made up of sales for modern retail commercial brands and products for industry. Conserve Italia has developed a consolidated relationship with all the major retail chains; representing approximately 65% of its turnover. The Ho.Re.Ca. channel (Hotel, Restaurants and Cafés) is also an important channel, especially for beverages as well as for the Foodservice and Vending lines.

7. THE BRAND CIRIO

ABOUT US

Cirio has been the tomato specialist since 1856: an experience of 160 years that has made it one of the symbolic brands of Italian cuisine. Cirio, since 2004, has been part of the Conserve Italia Group, an Agricultural Cooperative Society whose social base is made up of over

14.000
ASSOCIATED FARMERS

who cultivate in open fields with integrated certified production systems. All the cultivation fields are near the factories where they are processed, packaged and distributed to guarantee their freshness.

OUR CHARACTERISTICS

Cirio uses tomatoes **100% Italian origin**

and controls the entire supply chain; the quality is verified and certified at every stage of sowing, cultivation, processing, production in order to preserve the natural freshness of the harvest.

THE PLANTS

Conserve Italia directly manages seven plants in Italy, in Emilia-Romagna, in Tuscany and in Apulia. The plant at Pomposa in Ferrara, which was built between 2002-2004 has an overall surface area of 440,000 sq.m., of which approximately 120,000 covered, and a production capacity for the processing of over 350,000 tonnes of raw materials including tomatoes, vegetables and fruit. The plant is specialized in processing of sieved, chopped and concentrated tomatoes, fruit in syrup and vegetables in cans and glass jars.

The plants of **Barbiano di Cotignola and Massa Lombarda (RA)** are for processing fruit juices, nectars and fruit based drinks.
The **Alseno (PC)** plant is specialized in vegetables and sweet corn processing.
The plants in **Ravarino (MO)**, **Albinia (GR)** - EMAS - registered site (Reg.n. IT - 000826) - and **Mesagne (BR)** are dedicated to the production of tomato based products (sieved, chopped, concentrates and sauces).

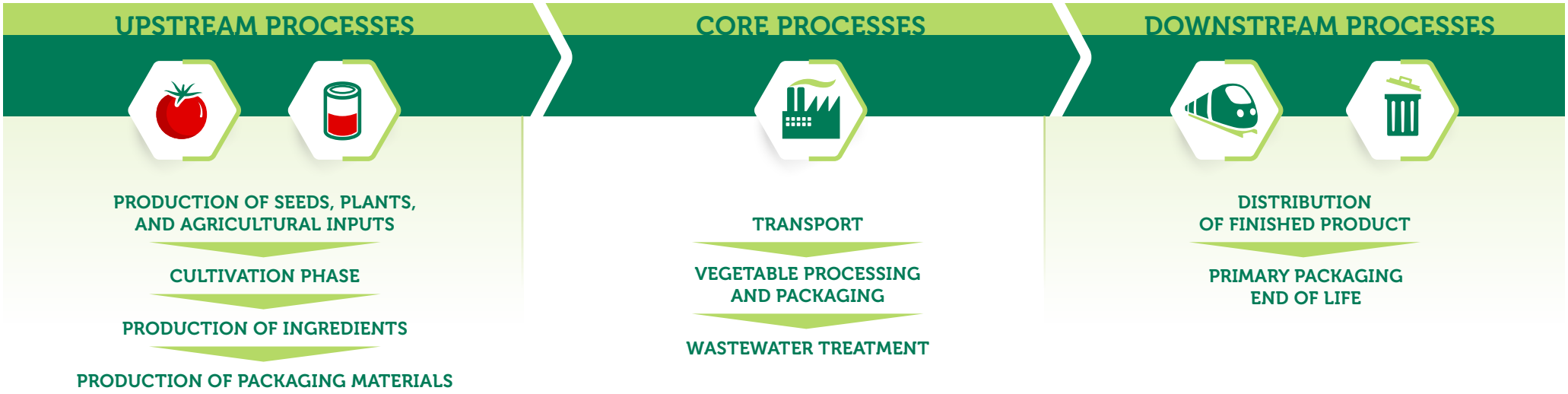
Sieved tomatoes "La Rustica" – can 3x2,5Kg, object of the study, is produced in the plant at Pomposa (FE).

8. ENVIRONMENTAL PERFORMANCE DECLARATION

The declared unit is 1 kg of packaged product.

Specific data were collected on the plant for the year 2019.

SYSTEM BOUNDARIES



METHODOLOGY

The methodology used in order to evaluate the environmental performance of the product is the Life Cycle Assessment (LCA), according to the ISO 14040-14044 standards. The goal of the LCA study is to evaluate the potential environmental impact associated to the production of sieved tomatoes "La Rustica" Cirio – can 2,5Kg.

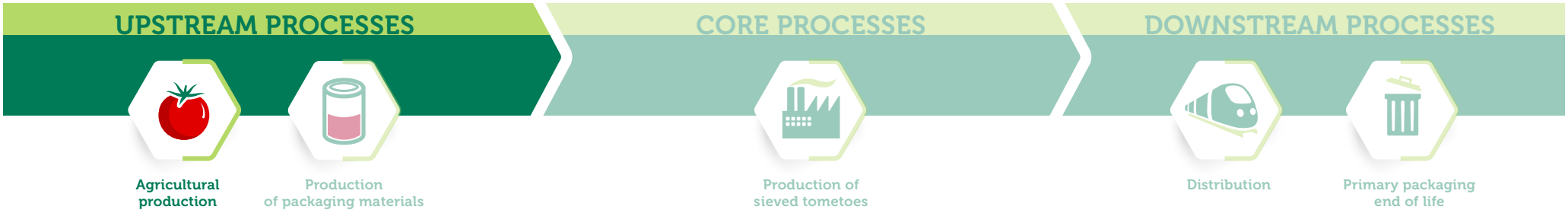
The **Water Footprint Profile** is calculated in accordance to ISO 14046 standard, through a Water Footprint Assessment integrated in the LCA study.

Air and water emissions caused by the use of nitrogen- and phosphorous-based fertilizers utilized by the system plant and for the cultivating operations have been calculated in accordance with § 4.8 of the PCR 2019:10 Prepared and preserved vegetable and fruit products, including juice.

For the modeling of the electricity used in the processes, the supplier's specific residual mix for the reference year has been used.

All life cycle phases were analyzed and accounted for in the study. This EPD and further information about it are available on the website of the International EPD® System: www.environdec.com

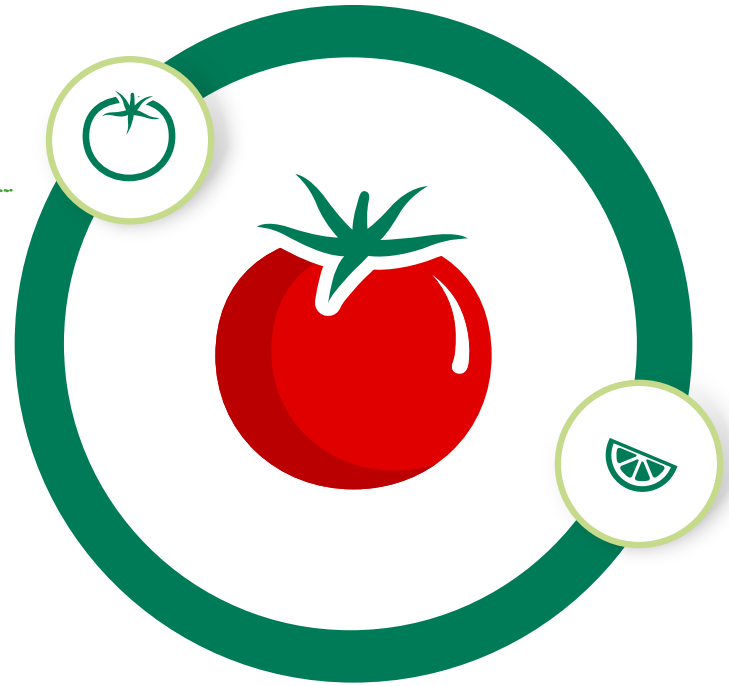
9. AGRICULTURAL PRODUCTION



TOMATOES

Data collection relating to the cultivation phase is been included in a larger project called "Precision sustainable agriculture". Data on the yield of the cultivated product, on fertilizers, on the consumption of water and diesel for the processing of the land have been collected at representative companies for the various crops and for the geographical areas of membership of the agricultural cooperatives.

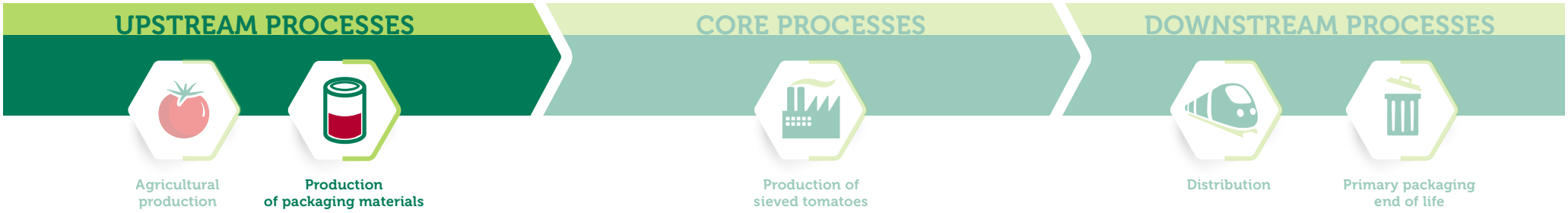
Conserve Italia, in collaboration with the University of Genoa, has carried out a project that led to the development of a new indicator, the Water-Energy-Food (WEF) Nexus, which considers the synergies between Water - Food and Energy for the agricultural phase



OTHER INGREDIENTS

In the LCA study, all the ingredients present in the product and materials used in the cultivation phase have been modeled using data deriving from internationally recognized databases.

10. PRODUCTION OF PACKAGING



PRIMARY PACKAGING

The primary packaging of the products, otherwise the packaging conceived to establish a sales unit at the point of sale for the end user or the consumer, is essentially made up from tinplate, glass, polylaminated or plastic. In the LCA study, the packaging materials were modeled using data from internationally recognized databases.

Conscious of the contribution of the food industry to production of packaging, Conserve Italia is constantly committed to minimize the weight and volume of packaging, by the limits necessary to guarantee the levels of safety, quality and acceptability of the product by the consumer.

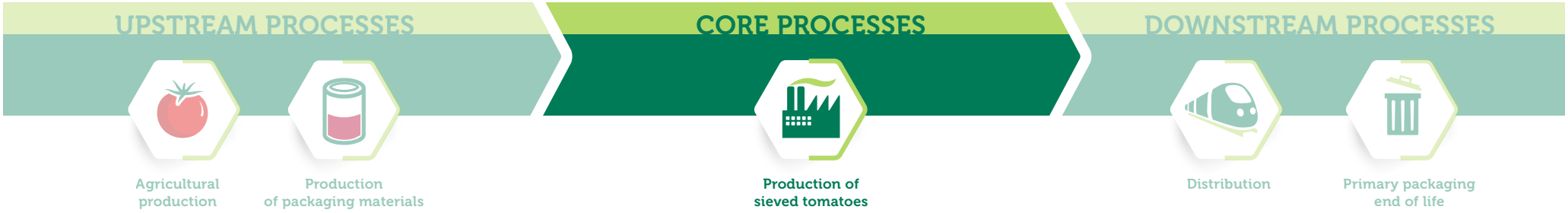
Useful link
http://www.ilfattoalimentare.it/sostenibilit.html

Conserve Italia has been working for years on the reductions of the weights of primary packaging to reduce its impact environmental with a view to continuous improvement

TERTIARY PACKAGING

Tertiary packaging, otherwise the packaging conceived in order to facilitate manipulation and transport of the finished product, is chosen by Conserve Italy with sustainability criteria, such as durability, lightness and use of environmentally friendly materials. In particular, the pallets used by Conserve Italia are all multi-use and reusable packaging. Once the reuse is over, these pallets are 100% recyclable.

11. PRODUCTION OF SIEVED TOMATOES



PLANTS

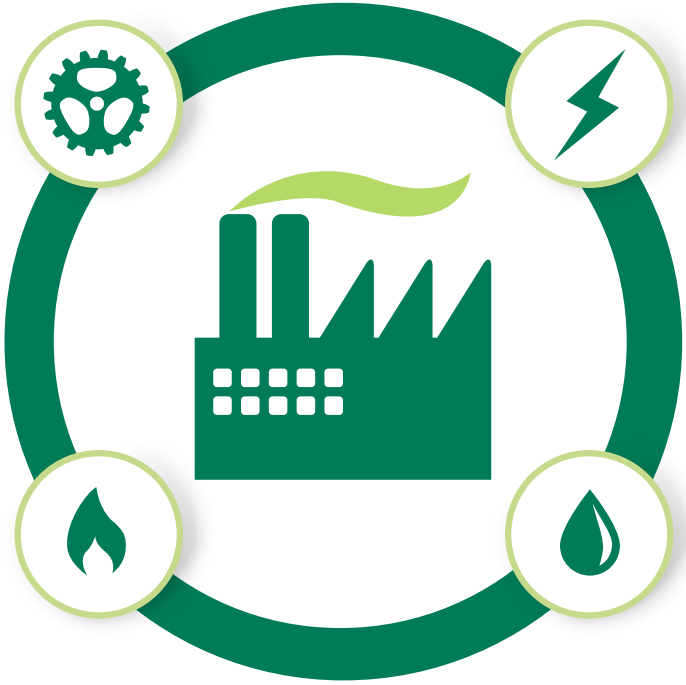
The production of the products of the Conserve Italia plants includes the following life cycle stages:

1. Preparation of the finished product (e.g. washing, mixing, heat treatments, ...) from fresh or semifinished product.
2. Packaging process.
3. Refrigerated storage (where applicable).
4. Water purification.

Management data related to the reference year are collected annually at the plants involved and subsequently reported to the processing of the product. Below, the main data collected on the plants involved in the production of products are reported.

GREENHOUSE GASES

All Conserve Italia plants fall within the scope of application of the "Emissions Trading" Directive (Directive 2003/87/EC), that is they are subject to the monitoring and communication of the greenhouse gas emissions. The data on CO_2 emissions are annually calculated and verified by a body accredited by the Competent National Authority.



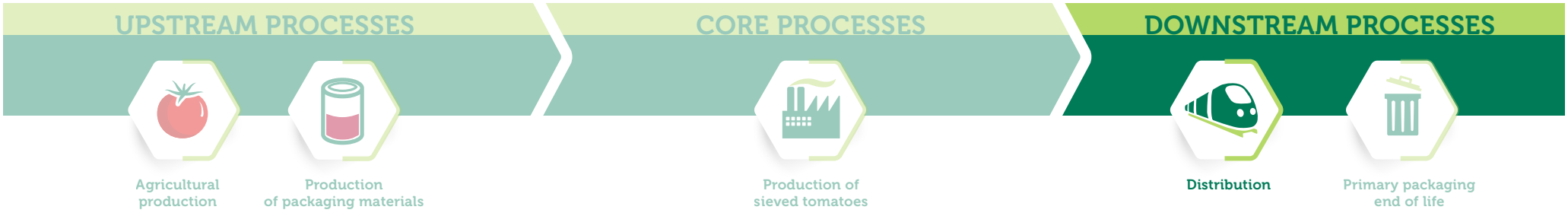
ELECTRICITY

The electrical consumption of the plants is one of the significant environmental aspects on which Conserve Italia has decided to act with energy efficiency measures and choosing suppliers that favour certain sources from renewable sources. In particular, all Valfrutta products on the market - fruit preserves (juices and nectars, fruit in syrup and jams), tomato preserves (pureed, pulp, peeled) and vegetable preserves (corn and legumes) - come from plants that for these processing lines use only certified electricity from renewable sources.

WATER

In the Conserve Italia plants, the water resource is considered a primary resource to be protected and preserved. For this reason in all the plants actions and processes for the recovery of water and its purification are implemented. The percentage of water recovered in the production cycle guarantees on average a recovery rate> 33%, including the water resource which is used for the transport of fresh raw material up to the washing and cooking phase.

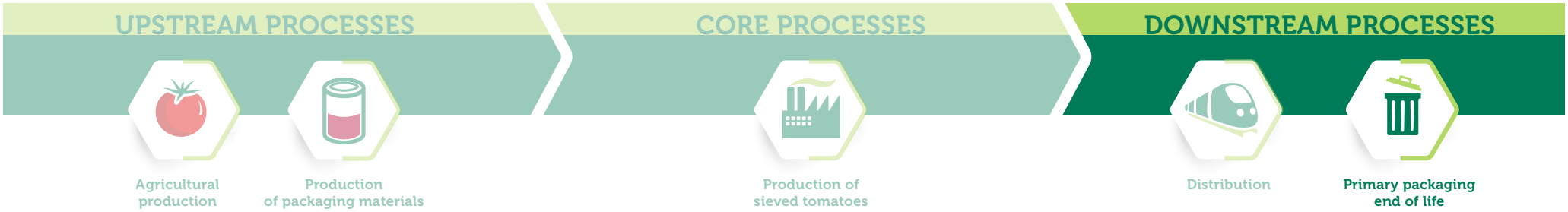
12. DISTRIBUTION



Conserve Italia has created a network of logistic centres dedicated to storage and shipment of finished products, able to ensure quick and cost-saving transfers for the products up to the Distribution Centers of the modern distribution chains or to the distributors of the traditional channels operating in retail and in the Ho.re.ca.. The most important storage and shipping warehouses are highly automated and are placed near the processing plants or in strategic areas for sorting goods at European level.

In addition to traditional road transport, multimodal transport has been developed, with the preparation of 5 special weekly trains, for transport on the lines north-south, which today covers about 20% of shipments, outdoing the national average for rail transport.

13. PACKAGING END OF LIFE



Conserve Italia uses as primary packaging for its products essentially tinplate, glass, polylaminated or plastic. All packaging used for Conserve Italia product, using materials that fall into the categories treated by CONAI (National Packaging Consortium), are 100% recyclable. CONAI in fact directs the activity and guarantees the results recovery of 6 Consortia of materials: steel (Ricrea), aluminum (Cial), paper/cardboard (Comieco), wood (Rilegno), plastic (Corepla), glass (Coreve).

According to the final data for 2019 published in the General Program for the prevention and management of packaging and packaging waste, the figure relating to packaging amounts to 80.6% of the amount relased for consumpion, for a total of 399,006 tons (Source RICREA).

14. RESOURCES USE

PARAMETER Data referred to 1 kg of product		UNIT	UPSTREAM Agriculture[1]	UPSTREAM Packaging	CORE	DOWNSTREAM Distribution	DOWNSTREAM End of life[2]	TOTAL
Primary energy resources renewable	Use as energy carrier	MJ. net calorific value	0,049	1,584	0,069	0,010	<0,001	1,713
	Use as raw materials	MJ. net calorific value	0,007	0,281	0,008	0,002	<0,001	0,298
	TOTAL	**MJ. net calorific value**	**0,056**	**1,865**	**0,077**	**0,012**	**<0,001**	**2,011**
Primary energy resources not renewable	Use as energy carrier	MJ. net calorific value	0,825	6,595	6,284	0,533	0,001	14,238
	Use as raw materials	MJ. net calorific value	0,160	0,093	<0,001	<0,001	<0,001	0,253
	TOTAL	**MJ. net calorific value**	**0,984**	**6,688**	**6,284**	**0,533**	**0,001**	**14,491**
Secondary material[3]		kg	-	0,063	-	-	-	0,063
Renewable secondary fuels		MJ	-	-	-	-	-	-
Non renewable secondary fuels		MJ	-	-	-	-	-	-
Net use of fresh water		m^3	0,066	0,005	<0,002	<0,001	<0,001	0,073

[1] All phases relating to the Upstream are included, with the exception of the production of packaging (production of seeds, plants and agricultural inputs, cultivation phase and production of ingredients).
[2] Primary packaging end of life.
[3] Data refer to the use of recycled cardboard in secondary and tertiary packaging, the use of 58% recycled tin-plated steel.

15. ENVIRONMENTAL IMPACTS

PARAMETERS Data refer to 1 Kg of product		UNIT	UPSTREAM Agriculture[1]	UPSTREAM Packaging	CORE	DOWNSTREAM Distribution	DOWNSTREAM End of life[2]	TOTAL
Global warming potential (GWP)	Fossil	Kg CO_2 eq	0,071	0,538	0,384	0,033	<0,001	**1,027**
	Biogenic	Kg CO_2 eq	<0,001	0,001	<0,001	<0,001	<0,001	**0,001**
	Land use	Kg CO_2 eq	<0,001	<0,001	<0,001	<0,001	<0,001	**0,001**
	TOTAL	**Kg CO_2 eq**	**0,071**	**0,539**	**0,385**	**0,033**	**<0,001**	**1,028**
Acidification potential (AP)		Kg SO_2 eq	0,001	0,003	0,001	<0,001	<0,001	**0,004**
Eutrophication potential (EP)		Kg PO_4^3 eq	0,001	<0,001	<0,001	<0,001	<0,001	**0,001**
Formation potential of tropospheric ozone (POCP)		Kg C_2H_4 eq	<0,001	<0,001	<0,001	<0,001	<0,001	**<0,001**
Abiotic depletion potential Elements		Kg Sb eq	<0,001	<0,001	<0,001	<0,001	<0,001	**<0,001**
Abiotic depletion potential Fossil fuels		MJ. net calorific value	0,842	5,461	5,574	0,473	0,001	**12,352**
Water scarcity potential		m^3 eq	2,967	0,147	0,084	0,002	<0,001	**3,199**

[1] All phases relating to the Upstream are included, with the exception of the production of packaging (production of seeds, plants and agricultural inputs, cultivation phase and production of ingredients).
[2] Primary packaging end of life.

16. WASTE PRODUCTION AND OTHER INDICATORS

PARAMETERS Data refer to 1 Kg of product	UNIT	UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Agriculture[1]	Packaging		Distribution	End of life[2]	
Hazardous waste disposed	Kg	<0,001	<0,001	<0,001	<0,001	<0,001	**<0,001**
Non hazardous waste disposed	Kg	0,004	0,540	0,006	<0,001	0,018	**0,568**
Radioactive waste disposed	Kg	<0,001	<0,001	<0,001	<0,001	<0,001	**<0,001**

PARAMETERS Data refer to 1 Kg of product	UNIT	UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Agriculture[1]	Packaging		Distribution	End of life[2]	
Components for reuse[4]	Kg	-	-	0,022	-	-	**0,022**
Material for recycling	Kg	-	-	-	-	-	**-**
Materials for energy recovery[4]	Kg	-	-	0,029	-	-	**0,029**
Exported energy, electricity	MJ	-	-	-	-	-	**-**
Exported energy, thermal	MJ	-	-	-	-	-	**-**

[1] All phases relating to the Upstream are included, with the exception of the production of packaging (production of seeds, plants and agricultural inputs, cultivation phase and production of ingredients).
[2] Primary packaging end of life.
[4] Data refers to by-products used as soil improver and sent to biodigester.

OTHER INDICATORS	UNIT	UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Agriculture[1]	Packaging		Distribution	End of life[2]	
Land use (occupation)	m2a	9,544	-	-	-	-	**9,544**
Ecological footprint	m2a	0,151	1,522	0,985	0,093	<0,001	**2,753**

WATER FOOTPRINT PROFILE	UNIT	UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Agriculture[1]	Packaging		Distribution	End of life[2]	
Human toxicity	Kg 1,4-DB eq	0,017	7,396	0,014	0,008	<0,001	**7,434**
Fresh water aquatic ecotoxicity	Kg 1,4-DB eq	0,001	0,008	0,005	<0,001	<0,001	**0,015**
Marine aquatic ecotoxicity	Kg 1,4-DB eq	13,80	271,36	26,39	3,40	<0,01	**314,95**
Terrestrial ecotoxicity	Kg 1,4-DB eq	<0,001	0,011	<0,001	<0,001	<0,001	**0,011**
Acidification potential (AP)	Kg SO_2 eq	0,001	0,003	0,001	<0,001	<0,001	**0,004**
Eutrophication potential (EP)	Kg PO_4^{3-} eq	0,001	<0,001	<0,001	<0,001	<0,001	**0,001**
Water use	m^3	0,066	0,005	0,002	<0,001	<0,001	**0,073**
Water scarcity potential	m^3 eq	2,967	0,147	0,084	0,002	<0,001	**3,199**

[1] All phases relating to the Upstream are included, with the exception of the production of packaging (production of seeds, plants and agricultural inputs, cultivation phase and production of ingredients).
[2] Primary packaging end of life.

Sieved tomatoes "La Rustica"

	UNIT	UPSTREAM		CORE	DOWNSTREAM		TOTAL
		Agriculture[1]	Packaging		Distribution	End of life[2]	
ECOLOGICAL FOOTPRINT	m2a	0,151	1,522	0,985	0,093	<0,001	**2,753**
CARBON FOOTPRINT	Kg CO_2 eq	0,071	0,539	0,385	0,033	<0,001	**1,028**
WATER FOOTPRINT[5]	m^3	0,066	0,005	0,002	<0,001	<0,001	**0,073**

[1] All phases relating to the Upstream are included, with the exception of the production of packaging (production of seeds, plants and agricultural inputs, cultivation phase and production of ingredients).
[2] Primary packaging end of life.
[5] Water footprint profile - Water use

17. INFORMATION

RECYCLING OF PRIMARY PACKAGING

The primary packaging is a 100% recyclable material and it has to be directed to the waste separation procedures according to the rules of the pertaining municipalities.

ETHICAL CODE

Conserve Italia, within its activities, adopt the Ethical Code that outlines the basic principles of behavior of the company: pillars that lie on solid foundation of respect of law, honesty, transparency of information, quality and safety of products, responsibility towards community and environment.

PRODUCT CERTIFICATIONS

The product object of the study is in compliance with **BRC (British Retail Consortium) and IFS (International Food Standard)** standards for safety, legality and quality of products.

Certified and guaranteed by CESI (Centro Elettrotecnico Sperimentale Italiano) for renewable origin, the energy used by Valfrutta processing is **100% renewable energy** as stated by the label present in the packaging of all the products.

18. CERTIFICATION BODY

EPD International AB, Box 210 60, SE-100 31 Stockholm, Sweden,
E-mail: info@environdec.com

EPDs developed within the same product category but according to different programs may not be comparable.
Conserve Italia has the ownership and responsibility of this EPD.

Product category rules (PCR): Prepared and preserved vegetable and fruit products, including Juice; 2019:10 version 1.01; UN CPC 213, 214
PCR review was conducted by: The Technical Committee of the International EPD® System. **Chair: Adriana Del Borghi Contact via info@environdec.com.**
Independent third-party verification of the declaration and data, according to ISO 14025:2006: **X EPD process certification O EPD verification**
Third party verifier: DNV GL Business Assurance **Signature of the third-party verifier** **Accredited by: ACCREDIA** **ACCREDIA Accreditation n.: 008H**
Procedure for follow-up of data during EPD validity involves third party verifier: **O Yes O No**

19. REFERENCES

General Programme instructions for the International EPD® System, v.3.01 PCR 2019:10 v.1.01 UN CPC 213, 214 Prepared and preserved vegetable and fruit products, including juice

ISO 14046:2014 Environmental management – Water Footprint – Principles, requirements and guidelines
Database Ecoinvent v.3.4 (www.ecoinvent.org)

Life Cycle Analysis "EPD PROCESS LIFE CYCLE ASSESSMENT CONSERVE ITALIA PRODUCTS", Tetis Institute Srl, 2021, Rev.15

COREVE 2019. Glass recycling data 2019

RICREA 2019

COMIECO 2019 (National Consortium for Recovery and Recycling of Cellulose-Based Packaging) "25th Annual Comieco Report on the separate collection of paper and cardboard in Italy"

COREPLA 2019

IRI - Information Resources Srl. Iri Audit including discount A.T. June 2013

WATER PROCESS Technical Report "Creation of a model for quantifying the impact on the water sector determined by the cultivation of plant products", Project Measure 16.2, CENS - University of Genoa, 2021, Vers. 1

For the environmental impacts, the characterisation methods indicated on the website EPD® International System were used (https://www.environdec.com/resources/indicators); for the Consumption of energy resources the Cumulative Energy Demand (CED) method; for the categories relating to toxicity and ecotoxicity present in the Water Footprint Profile the CML-IA baseline method and for the Ecological Footprint the Ecological footprint method.

20. GLOSSARY

ACIDIFICATION POTENTIAL (AP)
drop in pH of soils, lakes, forests, due to air emissions of acidifying compounds, with harmful effects on living organisms, e.g. "acid rains".

ECOLOGICAL FOOTPRINT
the Ecological Footprint is a complex indicator that measures the biologically productive area of the sea and of land necessary to regenerate the resources consumed
by a human population and to absorb the waste produced from the consumption of fossil and nuclear fuels. It is expressed in soil use over time (m2a)

GLOBAL WARMING POTENTIAL (GWP100)
years, due to emissions and absorptions attributable to humans, such as carbon dioxide (CO_2),
methane (CH_4), nitrous oxide (N_2O), etc.

EUTROPHICATION POTENTIAL (EP)
reduction in dissolved oxygen levels in water media with collapse of fish and other aquatic species due to excess addition of large quantities of mineral nutrients such as nitrogen and phosphorous and subsequent dramatic increase in flora that feed on these nutrients.

PHOTOCHEMICAL OZONE CREATION POTENTIAL (POCP)
formation of ozone at ground level due to air emissions of unburnt hydrocarbons and nitrogen oxides in presence of solar radiation. This phenomenon is harmful for living organisms and often present in large urban centres.

LAND USE
land use represents an impact on biodiversity. Biodiversity depends on the type of use of soil and dimensions of area. In this impact category both regional and local impacts are taken into consideration and the damage related to land use results from both conversion and occupation of soil. This damage is consequently expressed in m2a: "Land occupation recorded as. m2 times year per unit output".

LIFE CYCLE ASSESSMENT (LCA)
it is a technique - regulated by ISO 14040 standard - to quantify the energetic and environmental load of the life cycle of a product system, through the quantification of energy and material input and air, liquid, solid emissions released into the environment, from raw material extraction to disposal of final waste.

TOXICITY
the toxicity can be expressed as human toxicity, fresh water aquatic toxicity, marine aquatic toxicity, terrestrial toxicity. The ETP (Eco-Toxicity Potential) is expressed with reference to a compound, i.e. 1,4-diclorobenzene (1,4 DCB). Therefore the unit is kg 1,4-DB eq.

FUNCTIONAL UNITY
it is a measure of the function of the studied system and it provides a reference to all the results presented in the EPD. This enables comparison of data presented in two or more EPD related to products within the same category, i.e. pertaining to the same PCR.

WATER FOOTPRINT (WF)
it is an indicator to quantify the potential impact related to water, calculated - in accordance to ISO 14046 standard – through a water footprint assessment based on a LCA study. The results of the water footprint assessment are represented by an impact indicators profile (water footprint profile).

WATER SCARCITY (AWARE)
Indicator that represents the equivalent volume of water consumed proportionate to the water availability of the individual countries.

WATER ENERGY FOOD (WEF) NEXUS
Dimensionless single score indicator that takes into account the Global Warming Potential (in kg CO_2 eq.), The Water Scarcity (in m^3 eq.), The Consumption of energy resources (in MJ) and the Field Yield (in tons / ha). The weighing methodology of the individual indicators defines a weighting of 50% on the agricultural yield (economic-like indicator) and a distribution based on the PEF (Product Environmental Footprint) weighting for the remaining environmental indicators. The indicator is analyzed for the agricultural phase only (1 kg of agricultural product).

ABIOTIC DEPLETION POTENTIAL - ELEMENTS
Indicator that measures the impacts associated with the consumption of abiotic (non-living) resources, related to the extraction of minerals and other non-renewable materials, which can lead to the exhaustion of natural resources. It is expressed in kilograms of Antimony (kg Sb eq) equivalent.

ABIOTIC DEPLETION POTENTIAL – FOSSIL FUELS
Indicator that measures the impacts associated with the consumption of fossil fuels and therefore non-renewable resources. For this reason it is quantified in energy terms, in particular in MJ (mega joules).

USE OF RENEWABLE AND NON-RENEWABLE PRIMARY ENERGY RESOURCES
it is a measure of the environmental impacts related to the consumption of primary energy renewable resources (solar, wind, water, geothermal, biomass) and non-renewable (oil, natural gas, coal and fissile materials), used both as an energy carrier and as a raw material.

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