AWARENESS AND TRANSPARENCY

ISAP Packaging introduces the first EPD according the PCR for Packaging n° 2019:13

Marco Omboni,
Direttore Marketing e Relazioni Esterne

September 30th 2020

ISAP PACKAGING S.P.A.

ISAP Packaging S.p.A. is the modern evolution of a historical activity born in 1963 in Verona to produce **tableware and rigid packaging** for the **agri-food industry**.

Nowadays, ISAP is equipped with the most **advanced technologies** for providing products with **high quality standards** and **high specialization levels.**

- Revenue: € + 85,8 million
- Employees: 254
- Customers: 1683, in the world
- Suppliers: 187
- Investments: € +21,9 milion in 5 years

THE PATH TO SUSTAINABILITY

"Our goal is to act coherently as single company and as part of larger institutional entities"

2007

Foundation of Pro.Mo

2011

RI-EVENTO dacosanascecosa

2015

ISAP 1st Sustainability Report

LCA comparative study for tableware

2016

2 new LCA experts

2018

Ecodesign Project

Foundation of Pro Food

2019

1 new dedicated LCA expert

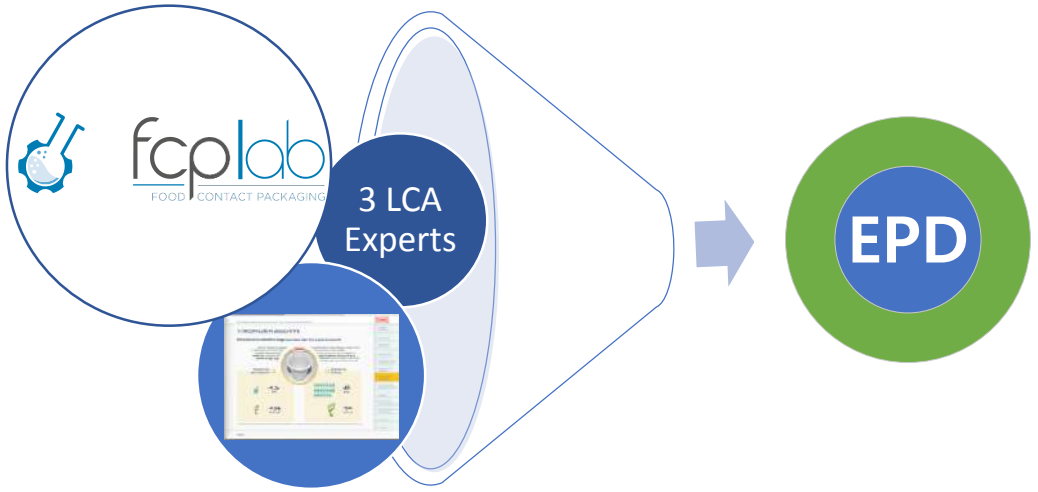
2020

EPD

Sector EPD for fresh food packaging containers

WHY DID ISAP NEED AN EPD?

- "Another brick in the wall"
- Deep know-how already available
- Tools already available



"Our goal is to act coherently as single company and as part of larger institutional entities...
...in a more and more favourable environment"

Products Environmental Footprint (PEF) is one part of the "Single market for Green products" recommendation by the European Commission released in April 2013, which shares much of the same vision as the International EPD® System: enabling verified, transparent and comparable information about the life-cycle environmental impact of products."

Let's take stock!

LCA

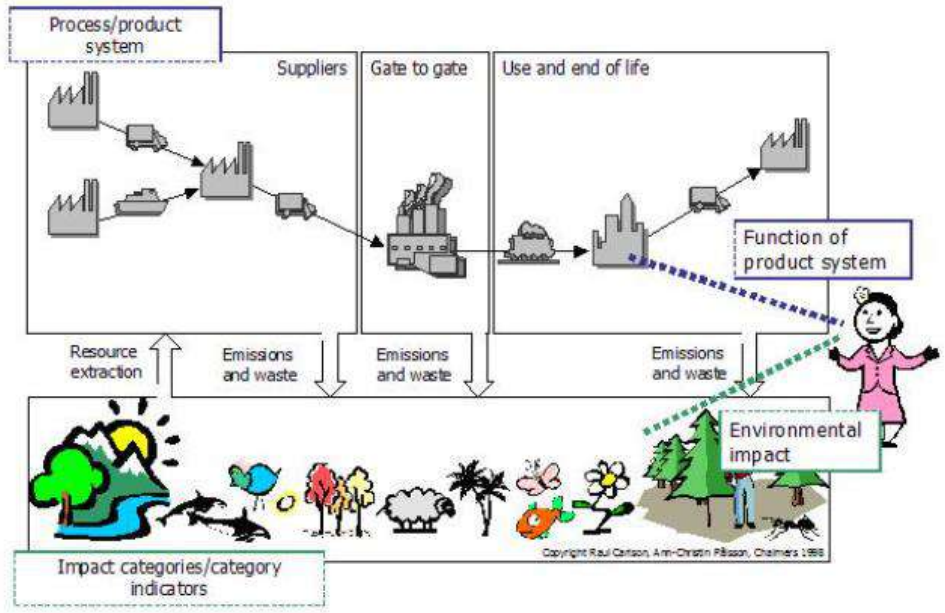
EPD

PCR

GPI

LIFE CYCLE ASSESSMENT

"a study of the environmental aspects throughout a products life cycle"



- An LCA study defines and evaluates the environmental impacts of all these stages using **impact categories**, that describe the effects on the environment of products and services.
- The effect on the environment in each category is quantified via **category indicators**.
- To evaluate the environmental performance as impact/function the function of a product is quantified in a **functional unit.**

LIFE CYCLE ASSESSMENT

"a study of the environmental aspects throughout a products life cycle"

ISO 14040:2006

ISO 14044:2006

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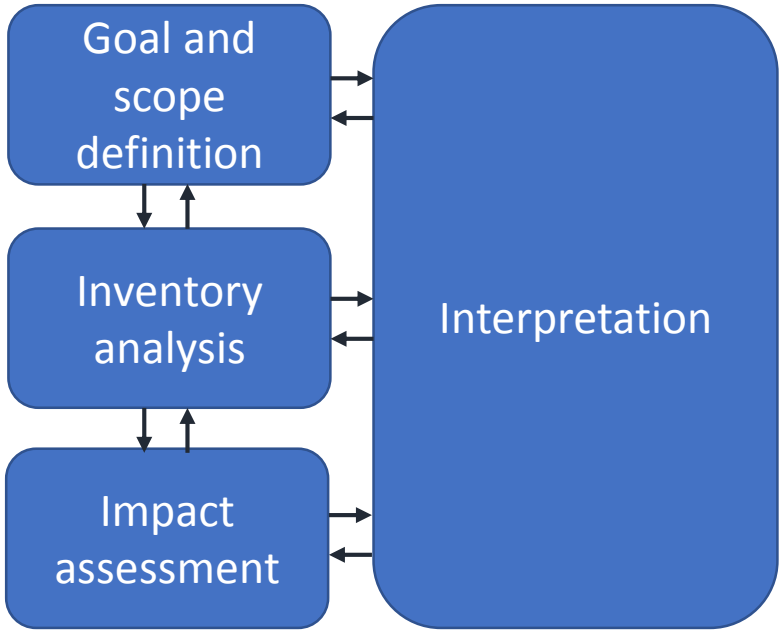
COUNTLESS WAYS TO DO IT!

LIFE CYCLE ASSESSMENT

"a study of the environmental aspects throughout a products life cycle"

ISO 14040:2006

ISO 14044:2006



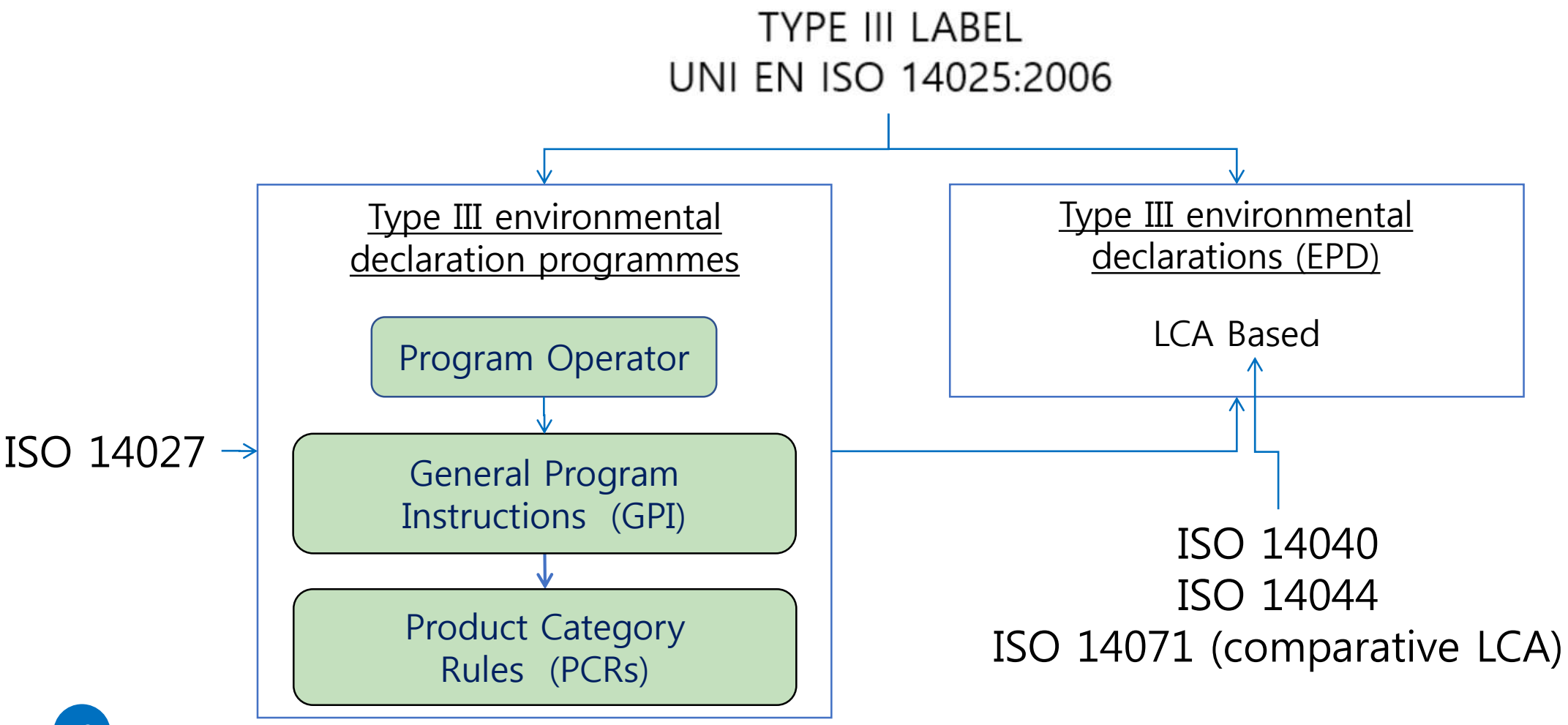
LCA and ENVIRONMENTAL LABELS

You can use LCA for:

- Describing the overall environmental impact of a product;
- Comparing the environmental impacts of different products that have the same function;
- Identifying the most dominant or damaging environmental impact(s) in a product life cycle;
- Helping the design of new products or services;
- Driving the strategic direction of development;
- Communication and marketing → environmental labes

TYPE I LABEL UNI EN ISO 14024:2018	TYPE II LABEL UNI EN ISO 14021:2016	TYPE III LABEL UNI EN ISO 14025:2006
Eco-Labels, voluntary third party certification program that uses multiple criteria	Environmental self-declarations by manufacturers	Voluntary third party verification program that uses quantifiable environmental data - PCR: Products Category Rules - GPI: General Programme Instructions

LCA and EPDs

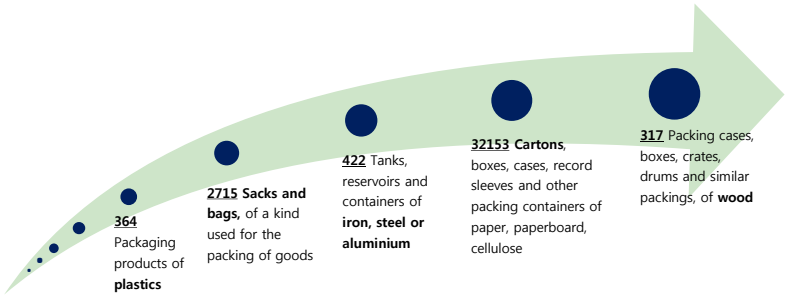

TYPE III LABEL
UNI EN ISO 14025:2006
Type III environmental declaration programmes
Program Operator
General Program Instructions (GPI)
Product Category Rules (PCRs)
ISO 14027
Type III environmental declarations (EPD)
LCA Based
ISO 14040
ISO 14044
ISO 14071 (comparative LCA)

The first EPD with PCR 13:2019 Packaging

“the 1st first EPD according to PCR 13:2019”

The first EPD with PCR 13:2019 Packaging

"A framework PCR which includes all the functions and all types of packaging"



The first EPD with PCR 13:2019 Packaging

"A framework PCR which includes all the functions and all types of packaging"

*"**Packaging**": product to be used for containment protection, handling, delivery, storage, transport and presentation of goods from raw materials to processed goods, from the producer to the user or consumer, including processor, assembler or other intermediary.*

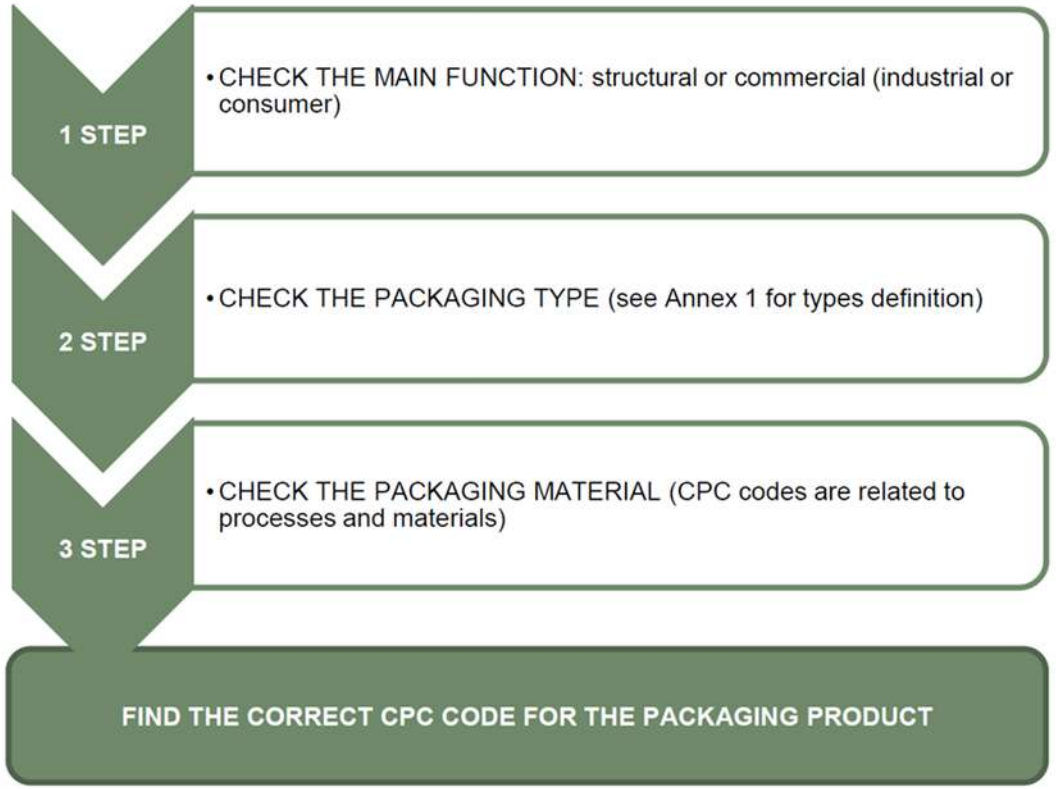


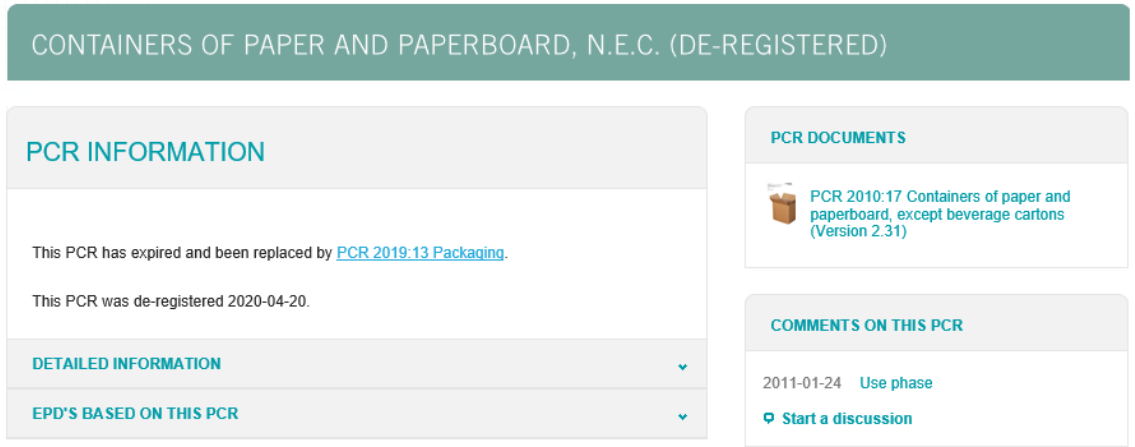
Figure 3 "3-step diagram" of the procedure for finding the correct CPC code.

PCR 13:2019

"It aims to be the main way to develop and register EPDs in the International System and it refers to the International ISO standard developed for packaging"

Other already issued PCRs on the packaging sector can potentially remain valid as stand-alone PCRs and they can be gradually made compliant with this PCR. Some of the PCRs that will be made compliant with PCR 13:2019 are

- Closable flexible plastic packaging
- Crates for food
- Beverage cartons (de-registered since last april and replaced by PCR)
- Containers of paper and paperboard, not elsewhere classified (de-registered since last april)



PCR 13:2019

"Developed with the modular approach regarding the life cycle stages and the system boundaries definition"

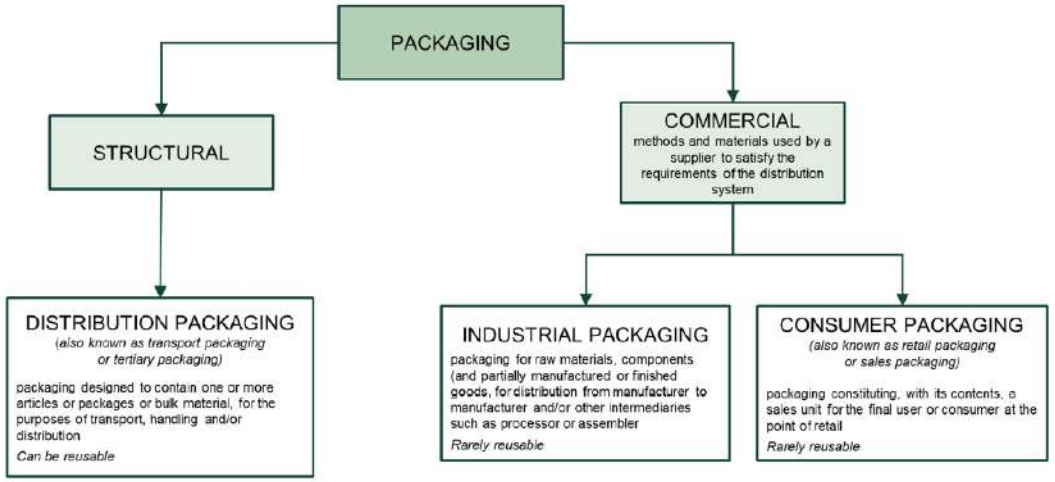


Figure 2 Main functions of packaging.

Life cycle stage	Life cycle module	Life cycle module group	EPD type	
			Declared unit: Cradle-Gate, Cradle-Gate with options	Functional unit: Cradle-Grave
Upstream	A1) Raw material supply			

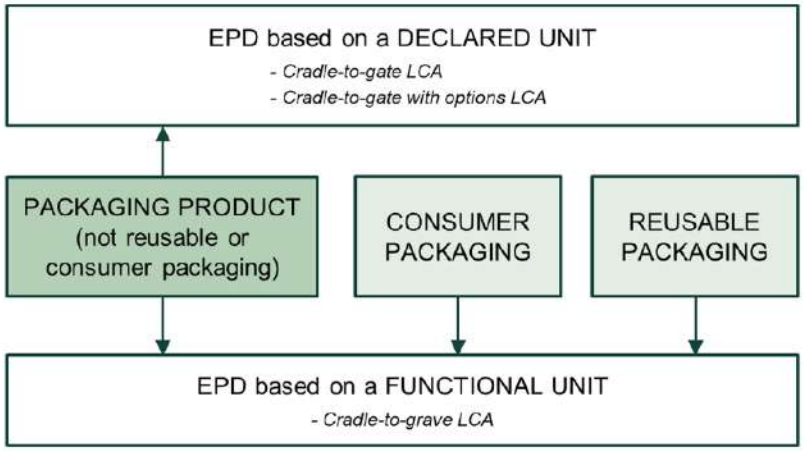
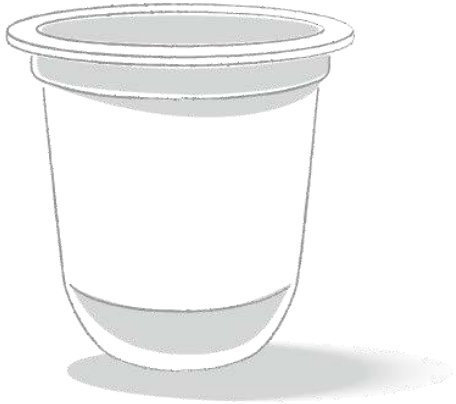


Figure 4 Choice of functional/declared unit and system boundaries based on the packaging product covered by an EPD.

OUR EPD: white PS Pots for 125 g of yoghurt

THE PRODUCT

The products covered by the EPD are white polystyrene pots suitable for containing 125 g of yoghurt, weighing between 5,0 g and 5,3 g. The pots are sold to dairy companies located in Italy.



CODE	DESCRIPTION	CAPACITY (g)	WEIGHT (g)
180130	VASETTO YOGURT PS TRONCO CONICO EMBOSSING CLIENTE G	125	5,3
180133	VASETTO YOGURT PS CAMICIA LISCIA T	125	5
180138	VASETTO YOGURT PS TRONCO CONICO G	125	5,3
180200	VASETTO YOGURT CAMICIA LISCIA COLLARE CON TACCHE M	125	5
180230	VASETTO YOGURT COLLARE CON TACCHE EMBOSSING CLIENTE M	125	5
180234	VASETTO YOGURT COLLARE CON TACCHE EMBOSSING CLIENTE A	125	5
180260	VASETTO YOGURT EMBOSSING CLIENTE Y	125	5,3
180262	VASETTO YOGURT CAMICIA LISCIA Y	125	5,3

WHY the POT?

- ISAP best seller
- Clients sensitive to environmental themes
- Critical Product (PS + single use)
- Too many unknow elements about the future

OUR EPD: Functional Unit

MODE OF USE

Predictable operating temperature from 0 to 70 °C

PRODUCT FUNCTION

The pot may contain and store a product which has a prolonged storage at a temperature between 2 and 5 °C.

CHARACTERISTICS

The pot is suitable:

- for automatic filling systems;
- to be treated with hydrogen peroxide (35%);
- to sterilization with UV rays;
- for hot filling (2h at 70°C, 15 min. up to 100°C);
- to be heat-sealed with lid;
- to be identified with expiry date;
- to be automatically clustered.

On the bottom of the objects, in agreement with the customer, the following indications may appear:

- identification of the manufacturer;
- indication "for food" or relative symbol;
- type of material with the indication whether it is recyclable;
- invitation not to disperse in the environment.

PRODUCTS TECHNICAL DATA

MATERIALS

Polystirene (98%)

Additives (2%)

DIMENSIONS

Ø=72÷73 mm

H=62÷70 mm

CAPACITY

125 g yoghurt

WEIGHT

5÷5,3 g

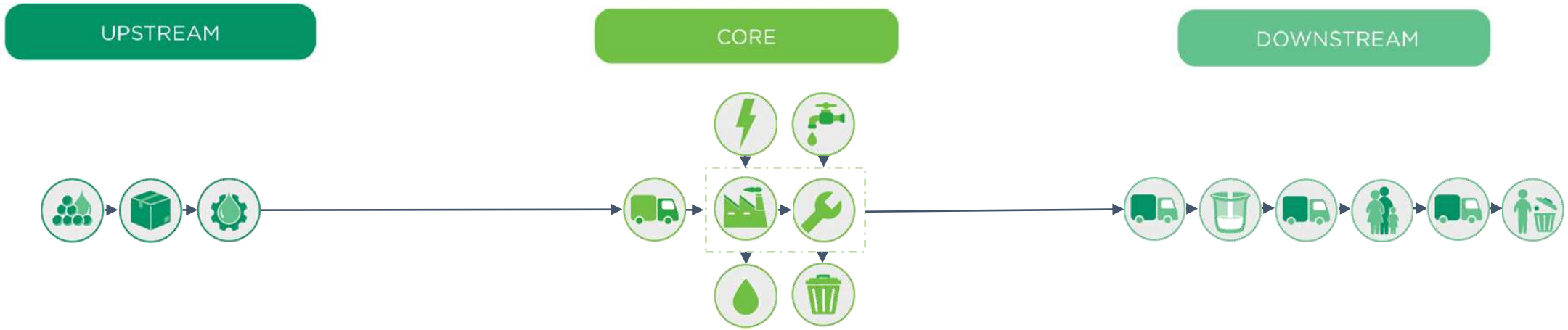
CRUSH RESISTANCE

Maximum load (kg), Compression values and Stacking values
minimum 20 kg

Compression test based on **accredited internal methods** performed by **FCPLab**.

Determination of compression properties (Fy, L) ((0-5000 N; 0-200 mm))

OUR EPD: System Boundaries



UPSTREAM
PRODUCTION OF RAW MATERIALS AND ADDITIVES
PRODUCTION OF PRIMARY AND SECONDARY PACKAGING
PRODUCTION OF SPARE PARTS AND LUBRICANTS
PRODUCTION OF DETERGENTS AND SOLVENTS

CORE
TRANSPORT: RAW MATERIAL, PRIMARY AND SECONDARY PRODUCT PACKAGING
INTERNAL TRANSPORT
ENERGY CONSUMPTION (ELECTRICITY AND GAS) FOR RPDUCTION
EXTRUSION AND THERMOFORMING PROCESSES
WATER CONSUMPTION AND AIR EMISSIONS
MAINTENANCE
PRODUCTION OF PRODUCTS FOR THE TREATMENT OF
TREATMENT OF WASTE AND GENERATED WASTE

DOWNSTREAM
TRANSPORT TO THE FILLING SITE
FILLING
LID PRODUCTION, POTS UNSTACKING AND LID WELDING)
TRANSPORT TO DISTRIBUTION PLATFORMS BY REFRIGERATED VEHICLES
SEPARATION
TRANSPORT TO DISPOSAL

Material	Sources	Recycling	Recovery	Disposal
Plastics	COREPLA	44,5%	43%	12,5%
Legno	Rilegno	63,4%	2,4%	34,2%
Cartone	Comieco	80,0%	8,0%	12,0%
Alluminio	ciAl	80,2%	0%	19,8%

OUR EPD: Methodology and Data collection

SOFTWARE USED: SimaPro v. 9.0.0.48

DATABASE: Ecoinvent v. 3.5

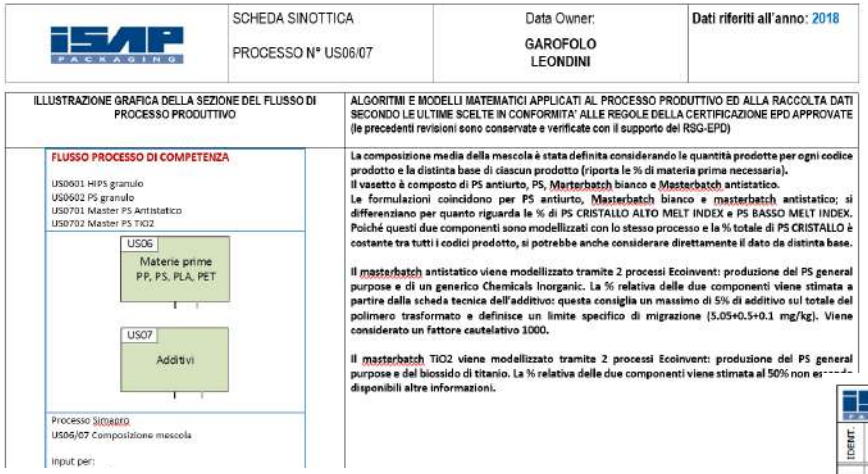
REFERENCE YEAR: 2018

REFERENCE STANDARDS:

ISO 14025:2006,
ISO 14040:2006,
ISO 14044:2006 + AMD 2017,
GPI v. 3.01, PCR 13:2019

DATA QUALITY:

- Primary data → Collected by internal Data Owners through synoptic cards
- Selected generic data → Selected from Ecoinvent
- Proxy data → According to quality rules defined in PCR.



SCHEDA SINOTTICA

PROCESSO N° US06/07

Data Owner: GAROFOLO LEONDINI

Dati riferiti all'anno: 2018

ILLUSTRAZIONE GRAFICA DELLA SEZIONE DEL FLUSSO DI PROCESSO PRODUTTIVO

FLUSSO PROCESSO DI COMPETENZA

US0601 HIPS granulo
US0602 PS granulo
US0701 Master PS Antistatico
US0702 Master PS TIO2

US06 Materie prime PP, PS, PLA, PET

US07 Additivi

Processo Sinoptico
US06/07 Composizione mescola
Input per:

ALGORITMI E MODELLI MATEMATICI APPLICATI AL PROCESSO PRODUTTIVO ED ALLA RACCOLTA DATI SECONDO LE ULTIME SCELTE IN CONFORMITA' ALLE REGOLE DELLA CERTIFICAZIONE EPD APPROVATE (le precedenti revisioni sono conservate e verificate con il supporto del RSG-EPD)

La composizione media della mescola è stata definita considerando le quantità prodotte per ogni codice prodotto e la distinta base di ciascun prodotto (riporta le % di materia prima necessaria).
Il vasetto è composto di PS antiurto, PS, Marterbatch bianco e Masterbatch antistatico.
Le formulazioni coincidono per PS antiurto, Masterbatch bianco e masterbatch antistatico; si differenziano per quanto riguarda le % di PS CRISTALLO ALTO MELT INDEX e PS BASSO MELT INDEX. Poiché questi due componenti sono modellizzati con lo stesso processo e la % totale di PS CRISTALLO è costante tra tutti i codici prodotto, si potrebbe anche considerare direttamente il dato da distinta base.

Il masterbatch antistatico viene modellizzato tramite 2 processi Ecoinvent: produzione del PS general purpose e di un generico Chemicals Inorganic. La % relativa delle due componenti viene stimata a partire dalla scheda tecnica dell'additivo: questa consiglia un massimo di 5% di additivo sul totale del polimero trasformato e definisce un limite specifico di migrazione (5.05+0.5+0.1 mg/kg). Viene considerato un fattore cautelativo 1000.

Il masterbatch TIO2 viene modellizzato tramite 2 processi Ecoinvent: produzione del PS general purpose e del biossido di titanio. La % relativa delle due componenti viene stimata al 50% non es... disponibili altre informazioni.

RICHIAMO AL / AI FOGLI DI DATI GREZZI
(DOCUMENTAZIONE AZIENDALE COSI' COME È UTILIZZATA ABITUALMENTE)

\\DCISAP01\EPDDataOwner_EPD VASETTI 125 NEUTRI\GAROFOLO\CalcoloMescolaMedia.xlsx

Dati delle distinte basi

180130 VASETTO YOG. PS 5,3GR 1950PZ
180133 VAS.YOGURT 125G PS 5GR 2400PZ .
180138 VAS.YOG.PS 5,3G 125G 1950PZ NO EMB
180200 VAS. YOGURT 125G PS 2580PZ NEUTRO
180230 VAS. YOG.125G PS 2580PZ EMBOSS.NEW
180234 VAS.YOGURT 125G PS 2580PZ RIL
180260 VASETTO YOG. PS 5,3GR 1950PZ CS.RIL.
180262 VAS.YOG. LISCIO PS 5,3G 125G 1950PZ

Per i masterbatch

\\DCISAP01\EPDDataOwner_EPD VASETTI 125 NEUTRI\LEONDINI_ Dati Relativi a distinte Yogurt\US04_07\ValutazionePercentualiSostanzeAttiveMaster.xlsx

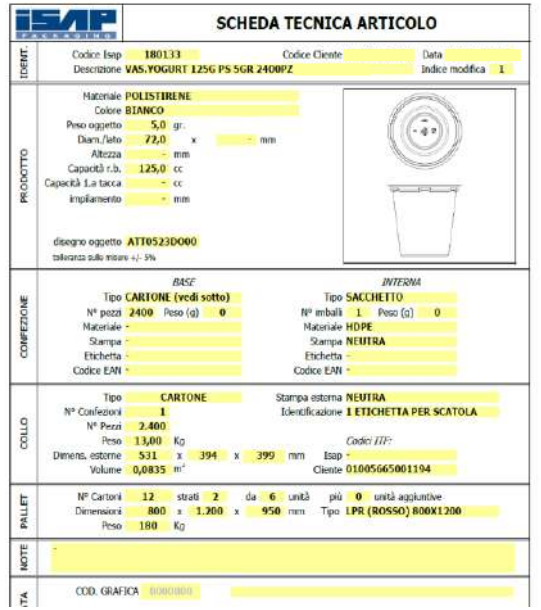
C:\Users\FMattioli\Desktop\US06_materie prime\SA_5103982_V3.0a_2011-05-01_00.pdf

C:\Users\FMattioli\Desktop\US06_materie prime\ST_5103982_V2.0_2010-08-30_00.pdf

C:\Users\FMattioli\Desktop\US06_materie prime\01655 R2.pdf

DATI RISULTANTI DALL'APPLICAZIONE DEGLI ALGORITMI E DEI MODELLI
(DA INSERIRE DIRETTAMENTE IN SIMAPRO)

Materiale, prodotto	Processo SimaPro	Descrizione	Quantità [kg/kg di compound]
P_HIPS	US0601 HIPS granulo *Polystyrene, high impact (RER)| production | Cut-off, U - Feedstock*	Dato da distinta base	0.588
P_PS	US0602 PS granulo *Polystyrene, general purpose (RER)| production | Cut-off, U - FeedStock*	Dato da distinta base	0.392
P_A_PS	US0701 Master PS Antistatico *Polystyrene, general purpose (GLO)| market for | Cut-off, U – Feedstock* *Chemical, inorganic (GLO)| market for chemicals, inorganic | Cut-off, U*	Dato da distinta base Scheda tecnica per la % PS-chemicals	0.002
P_TI_PS	US0702 Master PS TIO2 *Polystyrene, general purpose (GLO)| market for | Cut-off, U – Feedstock* *Titanium dioxide (RER)| market for | Cut-off, U*	Dato da distinta base	0.018



SCHEDA TECNICA ARTICOLO

IDENT: Codice Isap 180133 — Codice Cliente — Data — Descrizione VAS.YOGURT 125G PS 5GR 2400PZ — Indice modifica 1

PRODOTTO: Materiale POLISTIRENE; Colore BIANCO; Peso oggetto 5,0 gr; Diam./lato 72,0 x - mm; Altezza - mm; Capacità r.b. 125,0 cc; Capacità La tacca - cc; Impilamento - mm; disegno oggetto ATTO523D000; tolleranza sulle misure +/- 5%

CONFEZIONE: BASE — Tipo CARTONE (vedi sotto); N° pezzi 2400 Peso (g) 0; Materiale -; Stampa -; Etichetta -; Codice EAN -. INTERNA — Tipo SACCHETTO; N° imballi 1 Peso (g) 0; Materiale HDPE; Stampa NEUTRA; Etichetta -; Codice EAN -

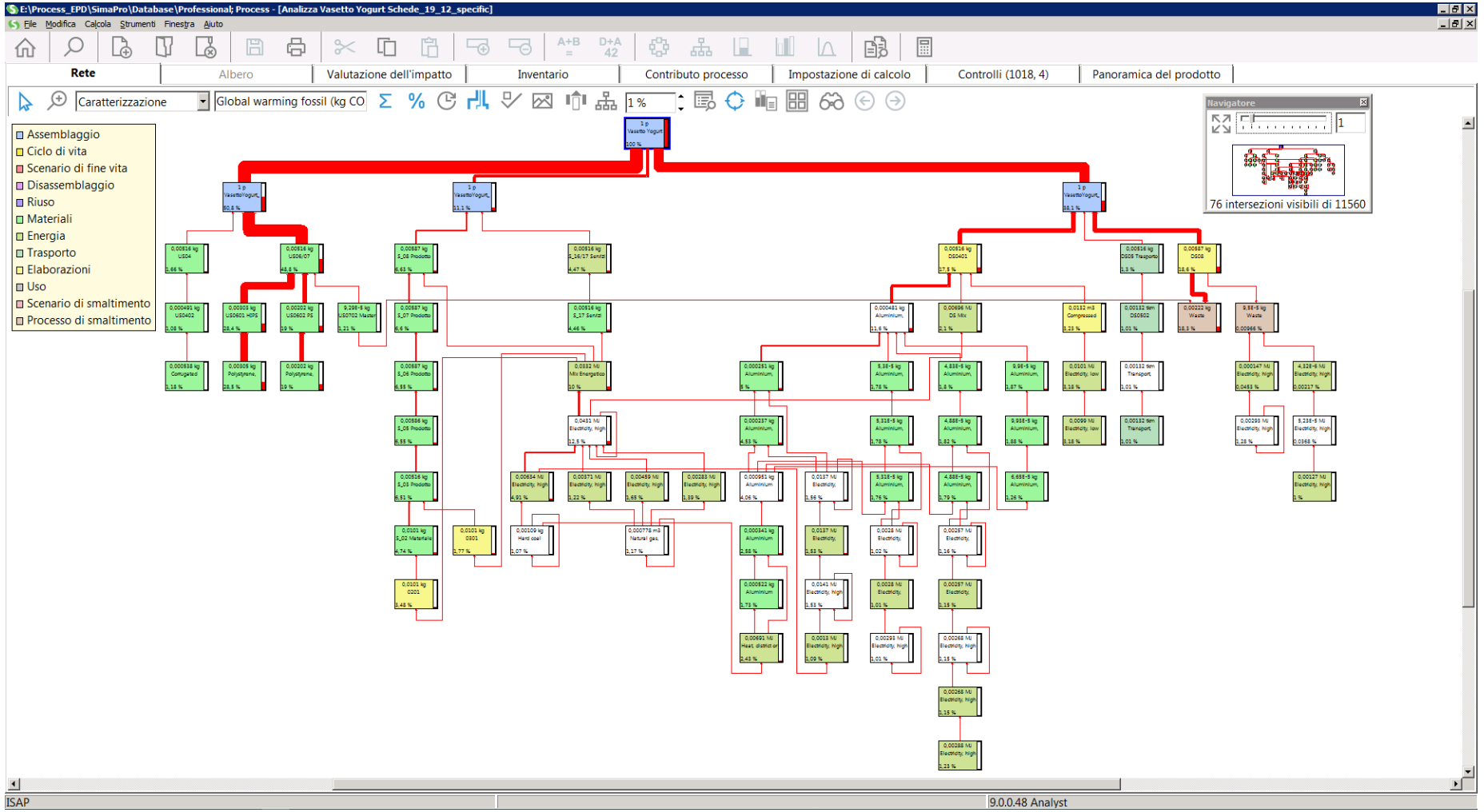
COLLO: Tipo CARTONE; N° Confezioni 1; N° Pezzi 2.400; Peso 13,00 Kg; Dimens. esterne 531 x 394 x 399 mm; Volume 0,0835 m³; Stampa esterna NEUTRA; Identificazione 1 ETICHETTA PER SCATOLA; Codici ITF: Isap -; Cliente 01005665001194

PALLET: N° Cartoni 12 strati 2 da 6 unità più 0 unità aggiuntive; Dimensioni 800 x 1.200 x 950 mm Tipo LPR (ROSSO) 800X1200; Peso 180 Kg

NOTE: -

COD. GRAFICA

OUR EPD: The results



https://www.environdec.com/Detail/?Epd=17302

OUR EPD: The results

IMPACT CATEGORIES			UPSTREAM	CORE	CRADLE-to-GATE	DOWNSTREAM	CRADLE-to-GRAVE
Global Warming Potential (GWP)	Fossil	kg CO_2 eq.	0,02	0,00	0,02	0,01	0,04
	Biogenic	kg CO_2 eq.	$2,3*10^{-5}$	$5,9*10^{-5}$	$8,2*10^{-5}$	$13,9*10^{-5}$	$22,1*10^{-5}$
	Land use and land transformation	kg CO_2 eq.	$0,4*10^{-5}$	$0,1*10^{-5}$	$0,5*10^{-5}$	$8,6*10^{-5}$	$9,0*10^{-5}$
	TOTAL	kg CO_2 eq.	0,02	0,00	0,02	0,01	0,04
Acidification potential (AP)		kg SO_2 eq.	$6,8*10^{-5}$	$3,3*10^{-5}$	$10,1*10^{-5}$	$5,0*10^{-5}$	$15,1*10^{-5}$
Eutrophication potential (EP)		kg PO_4^{3-} eq.	$7,1*10^{-6}$	$7,9*10^{-6}$	$15,0*10^{-6}$	$21,2*10^{-6}$	$36,2*10^{-6}$
Formation potential of tropospheric ozone (POCP)		kg C_2H_4 eq.	$5,6*10^{-5}$	$1,1*10^{-5}$	$6,8*10^{-5}$	$2,7*10^{-5}$	$9,4*10^{-5}$
Abiotic depletion potential – Elements		kg Sb eq.	$4,2*10^{-9}$	$1,5*10^{-9}$	$5,7*10^{-9}$	$29,6*10^{-9}$	$35,3*10^{-9}$
Abiotic depletion potential – Fossil fuels		MJ, net calorific value	0,35	0,05	0,41	0,08	0,49
Water scarcity potential		m^3 eq.	0,01	0,00	0,01	0,00	0,02

OTHER PARAMETERS

Use of resources:

- Primary energy resources – Renewable: Use as energy carrier, Use as energy raw materials, Total
- Primary energy resources – Non-Renewable: Use as energy carrier, Use as energy raw materials, Total
- Secondary material
- Renewable secondary fuels
- Non-Renewable secondary fuels
- Net use of fresh water

Waste production:

- Hazardous waste disposed
- Non-hazardous waste disposed
- Radioactive waste disposed

Output flows:

- Components for reuse
- Material for recycling,
- Materials for energy recovery
- Exported energy, electricity
- Exported energy, thermal

https://www.environdec.com/Detail/?Epd=17302

OUR EPD: Alternatives End of Life Scenarios

"the lack of information on the correct recycling, energy recovery and disposal rates for the different polymers represents a strong limitation for the correct definition of the disposal scenario"

RIVENDING

- *Rivending** project, by Flo S.p.A. with Confida, Corepla, Unionplast
- Total recycling in closed-loop of PS cups and teaspoons supplied by vending machines

Material	Sources	Recycling	Recovery	Disposal
Plastics PS	*Rivending*	100%	0%	0%
Plastics PE	Corepla	44,5%	43%	12,5%
Legno	Rilegno	63,4%	2,4%	34,2%
Cartone	Comieco	80,0%	8,0%	12,0%
Alluminio	ciAl	80,2%	0%	19,8%

EUROPEAN TARGET

- Directive (EU) 2018/852 of 30 May 2018 on packaging and packaging waste and Directive (EU) 2018/850 of 30 May 2018 on the landfill of waste
- Energy recovery rates obtained by difference

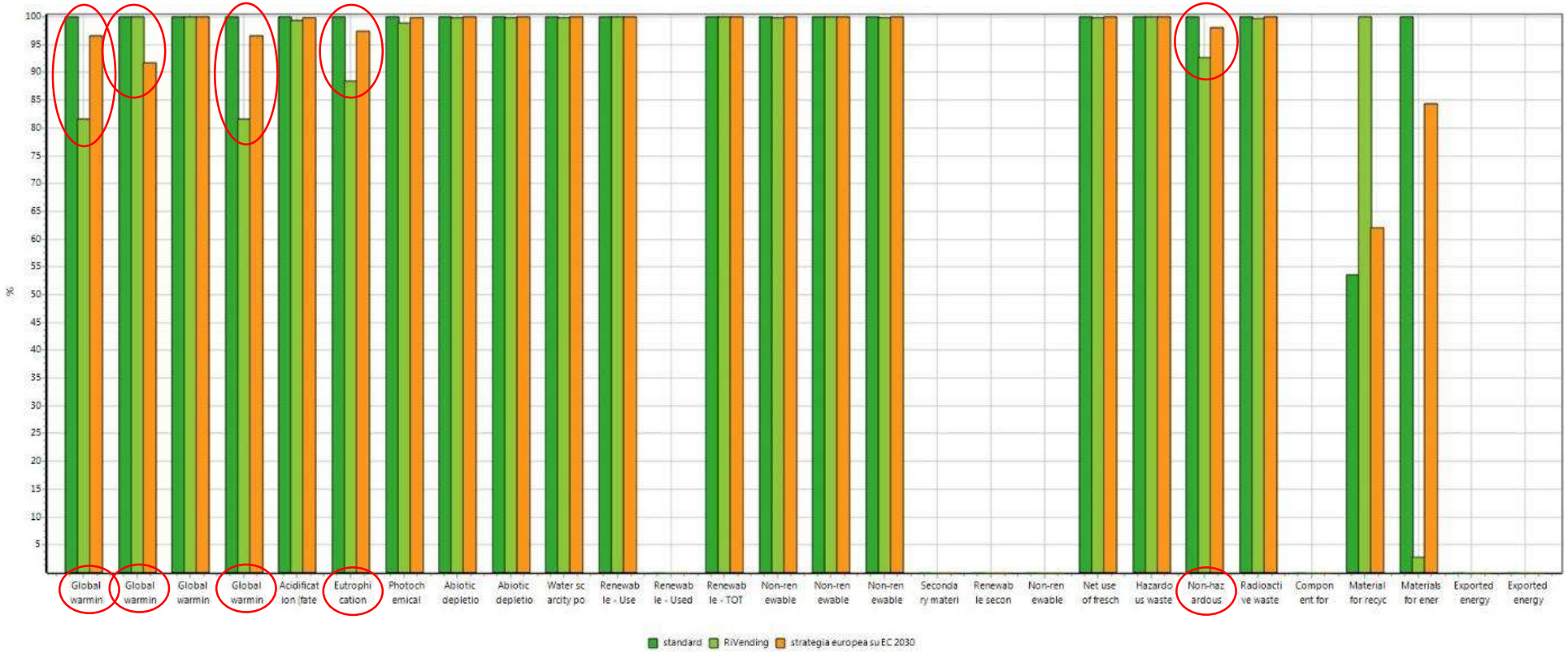
Material	Sources	Recycling	Recovery	Disposal
Plastics PS	Directive (UE) 2018/852	55%	35%	10%
Plastics PE		55%	35%	10%
Legno	Directive (UE) 2018/850	30%	60%	10%
Cartone		85%	5%	10%
Alluminio		90%	N.A.	10%

*source: https://rivending.eu/programma/

OUR EPD: Alternatives End of Life Scenarios

"the potential environmental impacts of the pot are decreasing as the recycling rate of plastics increases"

By acting in a targeted way on the **correct management of plastic waste**, improving the **separation by polymer** and increasing the **recycling rate**, it is possible to obtain a much greater decrease in the environmental impacts of the pot compared to the one obtained by applying the European targets by 2030



*source: https://rivending.eu/programma/

OUR EPD and MARKETING STRATEGY

"Strategy? Which strategy?"

Our strategy is over-conditioned by external elements:

- Confusion at European and Italian level,
- Enmities,
- Rapidly changing,
- Lack of knowledge at each level.

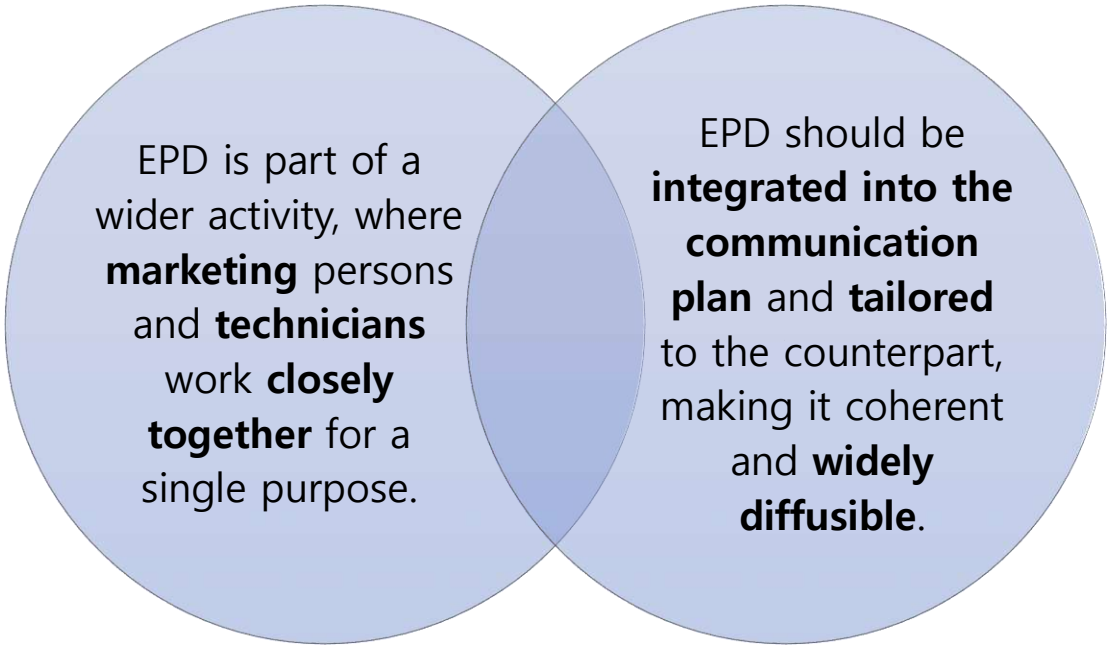
- Flexible approach
- Multimaterial approach (no good/bad products just right/wrong behaviors)
- Attention to sustainability at a global level
- Action based on information as objective as possible
- Information disclosure: adapt communication to the public
- Comparison with other sector companies (and association)

OUR EPD and MARKETING STRATEGY

"EPD is a **NEW, HIGH-IMPACT** and **TECHNICAL** marketing instrument,

….subject to very specifically stated conditions for communication"

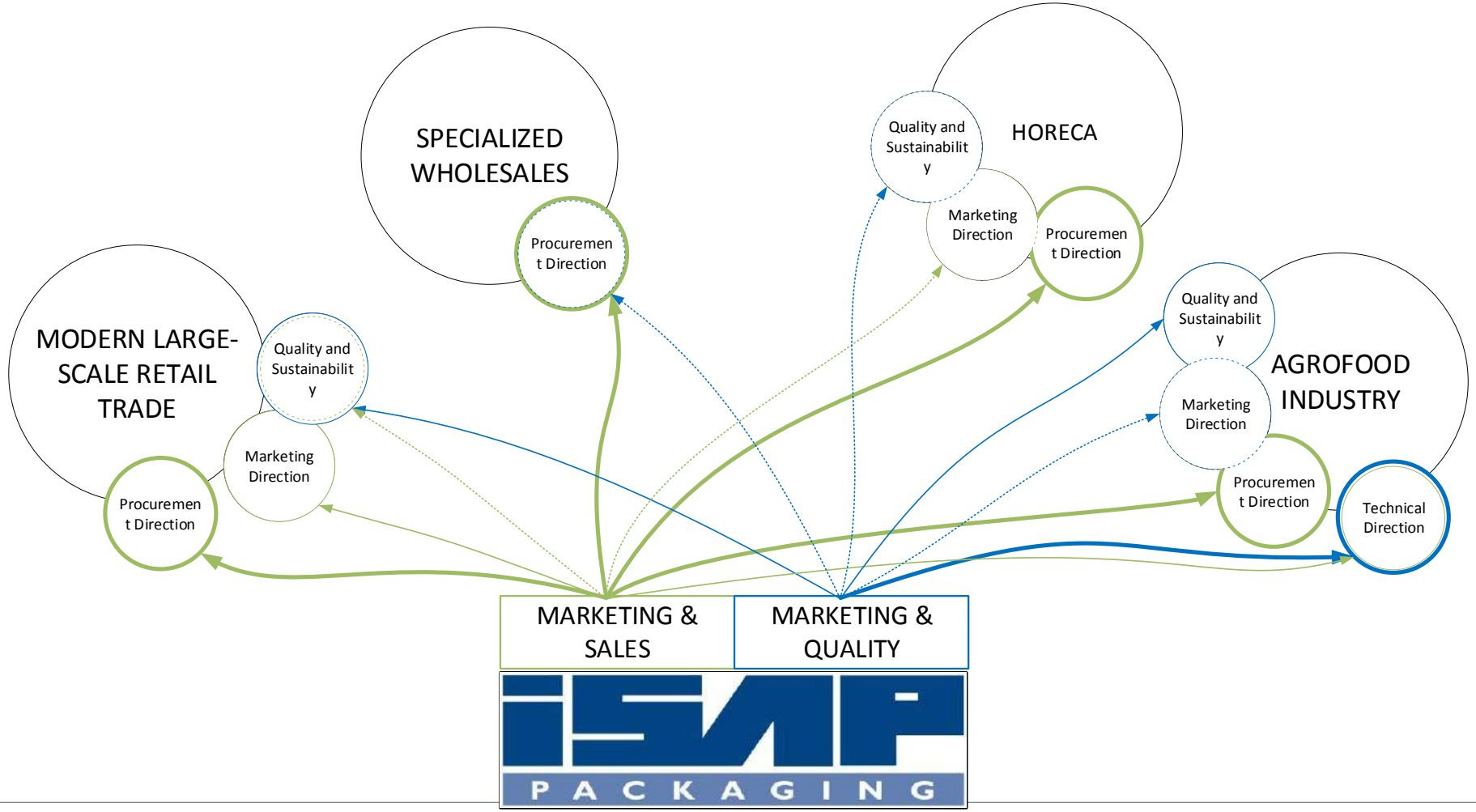
TIME
(fast change)



EFFECTIVENESS
(vs.clarity)

OUR EPD and MARKETING STRATEGY

"An intricate **NETOWRK** of **RELATIONSHIPS**: who talks to whom?"



CONCLUSION: ties and opportunities

EPD is a marketing tool

- Easily understandable in the dialogue with the "technical" counterpart of the client company (subject to exceptions);
- Effective for a wider audience (top management, commercial management, marketing management) if integrated in wider actions and with concrete effects on the increase of sustainability of the customer's offer;
- Delicate and tricky because of restrictions on the use;
- Sensitive respect to the time factor: long work behind a single LCA study and EPD redaction, an "instant" for the scenario to change in an unsettling way;
- Carrier of a potential, significant competitive advantage if the (growing) relevance of these issues will be really flanked by a "LCA/Environmental label-oriented" approach by the public decision-maker (compared to which, however, the refrain "it's technical stuff"...).

CONCLUSION: ties and opportunities

"By communicating the EPD we communicate much more"

AWARNESS AND TRANSPARENCY

The attitude for working rigorously, seriously and honestly seeking increasingly **awareness** on our products and production and ensuring **transparency** across our communication activities

FORWARD-LOOKING ATTITUDE

The ability to **look at the future**, using cues and comparisons to simulate scenarios, thanks to of the LCA tools characteristics and the competences of our experts

CUSTOMER-ORIENTED APPROACH

The willingness to **work closely with the customer** for gaining new inputs for improvement, according to the principles of Eco-design of packaging

EXPERTISE AND POTENTIALITY

The capability to convert these evaluation into innovative packaging projects - thanks to the experties of our R&D, and precise measurements - thanks to the contiguity with an **accredited laboratory**

fcplab
FOOD CONTACT PACKAGING

Francesca Mattioli,
Environmental and LCA Specialist

Marco Omboni,
Direttore Marketing e Relazioni Esterne

ISAP Packaging S.p.A.
Lungadige Attiraglio 67
37124 VERONA

T. +39 045 8394444
F. +39 045 8394446

isap@isap-packaging.com www.isap-packaging.com

THANK YOU
for your
ATTENTION!