

SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

Eco-design of food and beverages packaging: Case studies with EdTool

Presented by:
Nicola Cerantola

SWIM and Horizon 2020 SM
12th December 2018, Barcelona, Spain

This Project is funded by the European Union





Previously on..

Ecodesign..

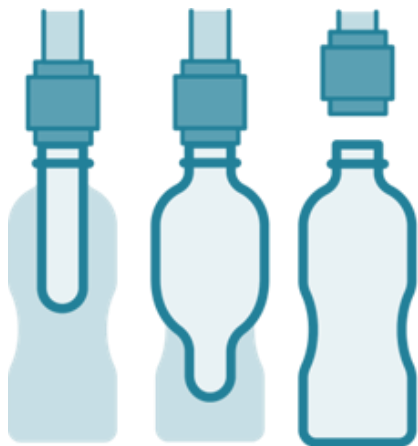
..is a systemic approach

..aims to include environmental (regenerative!) criteria in the design stage of a product / service and business

..must avoid burdens reallocation (example: outsourcing)

.. should be measurable, inclusive (social aspects) and scalable

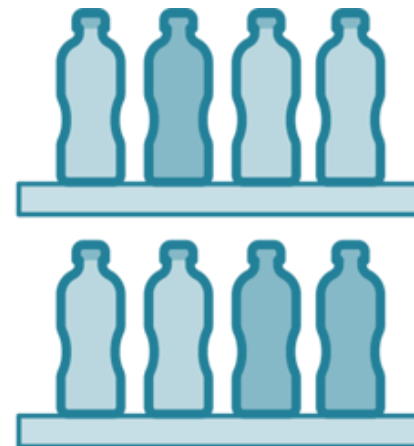
The Packaging Life Cycle



Packaging manufacturer



Packer / Filler



Distributeur

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer



Case study

From perspective of the manufacturer squeezable container tube (Witte y Solá)



Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

1.2. Ecodesign Project Description & Objectives

Please, describe the product/service to be ecodesigned and the objectives that are pursued by using edTOOL.

Edit

Name: Case study WyS · From Manufacturer

Description: Witte y Solá is a family business founded in 1968 specialized in the design and manufacture of aluminum tubes, maintaining a line of action based on service and proximity to the customer. The aluminum tube is a container with an ideal design to protect, contain and accurately dose the formulas of sectors such as pharmacy, cosmetics, food or chemical industry.

Objectives: The packaging object of the ecodesign case is an aluminum container tube, with a conical screw cap, for cosmetic products, specifically for hair dyeing. The main motivation for selecting this container was the request of a client who wanted to optimize the environmental profile of the container; It is also a container representative of the product portfolio of the company, so it is expected that the ecodesign improvements applied can be extrapolated to the rest of the production line.

Report comment: The packaging panel that Witte y Solá has formed for the ecodesign of the container is composed of representatives of the departments of: Purchasing, Engineering, Production, Quality and Commercial.

Company Logo:



Product image:



Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

1.1. Ecodesign Team Manage project members

Please, add the team members participating in the ecodesign project. They may be staff from the company and/or external assessors. Please, make sure that the team includes, as much as possible, professionals with different roles in the company (including direction, design, logistics, marketing, accounting).

Add member

Name	Email	Background	Responsibilities	
<ul style="list-style-type: none">● ecodesign expert● wys team:<ul style="list-style-type: none">○ Purchasing○ Engineering○ Production○ Quality○ Commercial				

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

1.3. Legal requisites Associated with the Ecodesign Project.

[Optional Step] Please, write down the most important legislation and regulations affecting the product/service.

Add requisite

2 records found

Name	Description	Attached file	
UNE-EN 13430:2005	Requirements for ...	(no file)	View Edit Delete
UNE-EN 13428:2005	on the Prevention	(no file)	View Edit Delete

It must be in accordance with the European legislation on the prevention of risks to the consumers' health and on environment protection and particularly relating to waste treatment. Packages in wood or plant material can be subjected to a phytosanitary check.

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

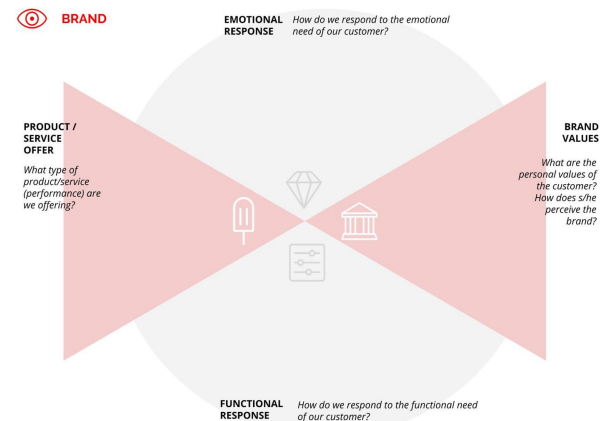
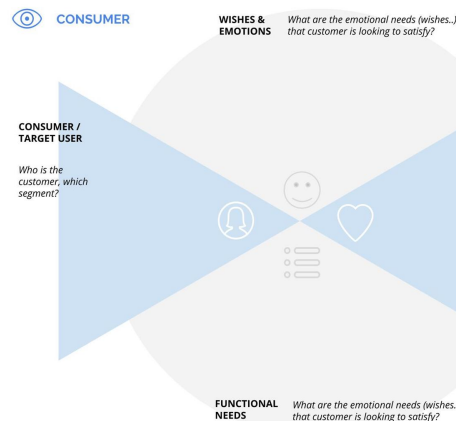
1.4. Market study Information on competing products/services.

[Optional Step] Please, describe the alternatives to your product already existing in the market.

←Back Edit

Description: A market study is useful when defining requirements; preparing budgets; choosing procurement method; planning and scheduling the procurement of goods, services and works; evaluation of bids/proposal, and sometimes to justify contract amendments.

Image:



Source: inédit

Case Study nr. 1 · Perspective of the manufacturer



CONSUMER

WISHES & EMOTIONS

What are the emotional needs (wishes..) that customer is looking to satisfy?

- Easy to apply
- The right dose
- Smooth feeling at touching
- Perception of quantity

CONSUMER / TARGET USER

Who is the customer, which segment?

- Purchase dpt. Packer
- Final User



PERSONAL VALUES

What are the personal values of the customer? How does s/he perceive the brand?

- Cheap purchase
- Good reputation
- Avoiding waste



- Easy to fill / use
- Easy to seal
- Lightness
- Guarantee of the quality
- Avoiding damaging

FUNCTIONAL NEEDS

What are the emotional needs (wishes..) that customer is looking to satisfy?

Case Study nr. 1 · Perspective of the manufacturer



BRAND

PRODUCT / SERVICE OFFER

What type of product/service (performance) are we offering?

- Single use disposable squeezable tube container for food and cosmetics



EMOTIONAL RESPONSE

How do we respond to the emotional need of our customer?

- Good looking finishing
- Quality materials
- Caring for health
- Guilt reduction minimising waste



BRAND VALUES

*What are the personal values of the customer?
How does s/he perceive the brand?*

- Cost efficient
- Good quality
- Avoiding waste



FUNCTIONAL RESPONSE

How do we respond to the functional need of our customer?

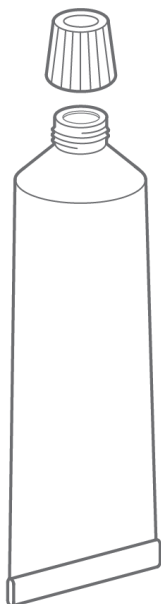
- Easy to handle and storing
- Sealing properties
- Efficiency in packaging / transporting
- Top quality inert material



Case Study nr. 1 · Perspective of the manufacturer

Current features

Conic cap
0.81g HDPE

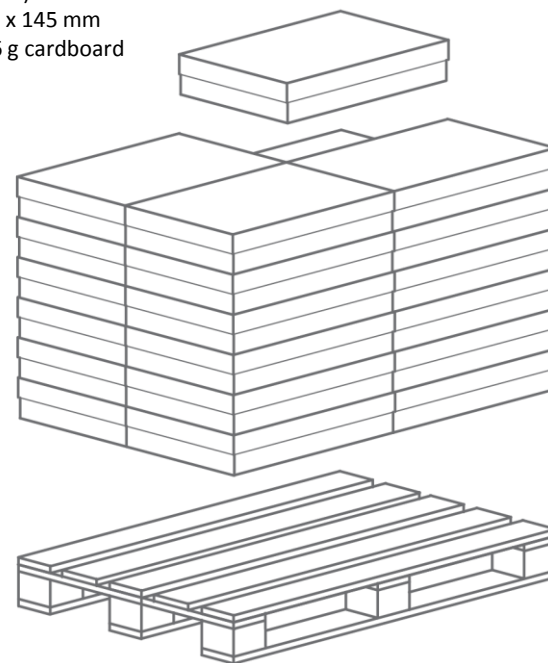


Squeezable container tube
4.22g Al*
0.71g white enamel



*Aluminium disc
diameter 24.7 x3.3mm

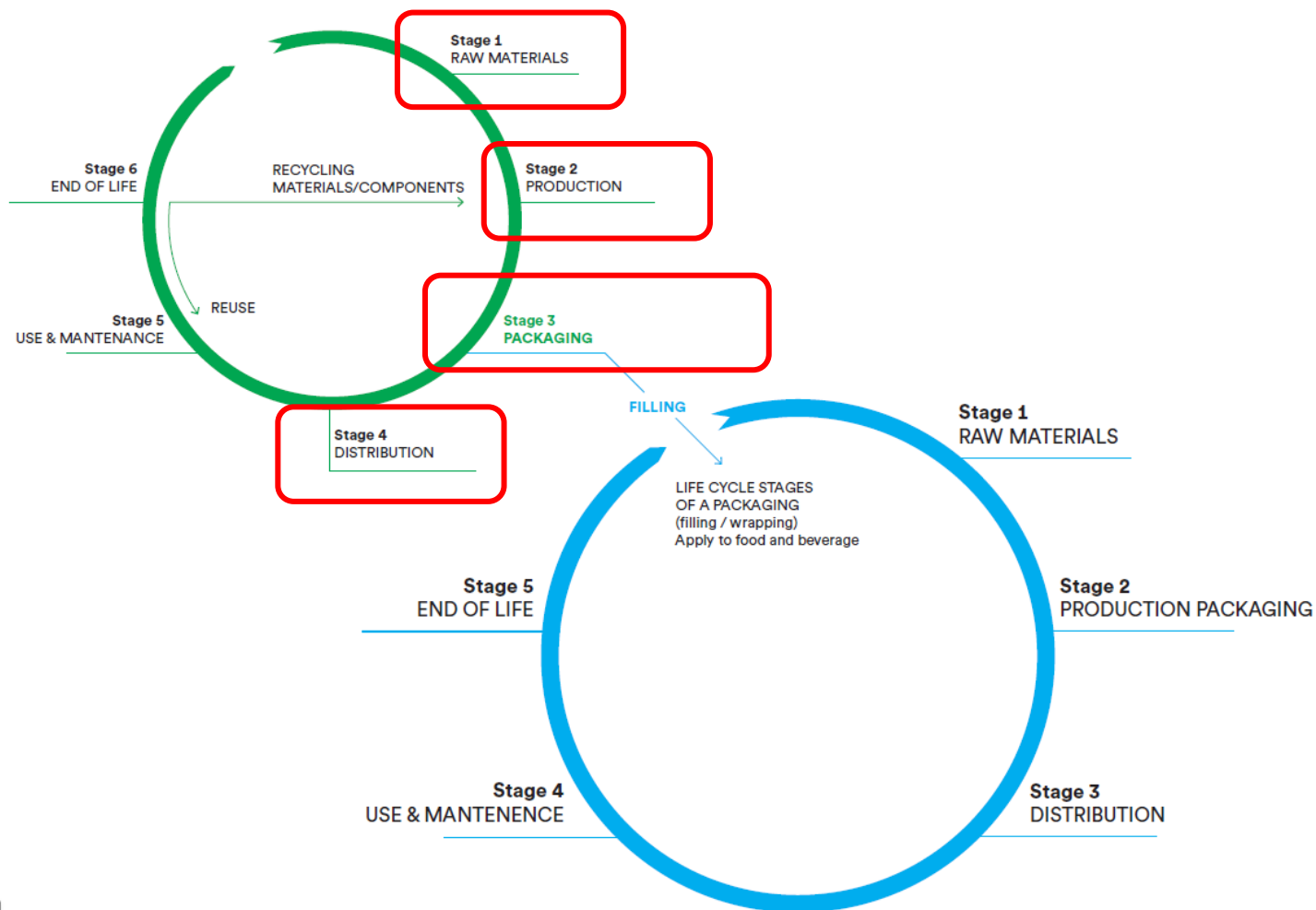
Self-assembling box + 4
point cap
(374u tubes)
600 x 400 x 145 mm
220 + 156 g cardboard



4u boxes / level
24u boxes / pallet
8.328u tubes / pallet
1200 x 800 x 870 mm

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer



Case Study nr. 1 · Perspective of the manufacturer

1.5 Customize Lifecycle stages

You can customize the lifecycle stages of the project. The minimum number of stages allowed is: 3.

Add lifecycle stage

Add custom lifecycle stage

Manage custom lifecycle stages

Lifecycle stage

Use & Maintenance

Position

7

Add

Position	Lifecycle stage	
1	Raw Materials	↓ ×
2	Production	↑ ↓ ×
3	Transportation to Packer	↑ ↓ ×
4	Filling / packing	↑ ↓ ×

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

1.6 Customize criteria for Environmental Assessment

This table presents the most common life cycle stages for any product/service:

materials > production > packaging > distribution > use & maintenance > end of life

For each life cycle stage, a selection of default life cycle criteria is presented, which will be used in order to perform an environmental assessment of the reference product/service. The criteria included in the table should be adapted to each project, so you may remove some of the default life cycle criteria or add new ones. Additional life cycle criteria can be added from a predefined list with other criteria, available under the **Add** label. or you can create new customized criteria under the **Add custom** label.

Stage 1 Raw Materials	Stage 2 Production	Stage 3 Transportation to packer	Stage 4 Filling / packing
Diversity of materials ⓘ ✕	Efficiency of production technology ⓘ ✕	Efficiency of transported load ⓘ ✕	Standardization of packaging sizes ⓘ ✕
Amount of materials ⓘ ✕	Energy efficiency ⓘ ✕	Efficiency of occupied volume ⓘ ✕	Amount of packaging materials ⓘ ✕
Recycled content ⓘ ✕	Waste generation ⓘ ✕	Distances ⓘ ✕	Packaging to Product volume ratio ⓘ ✕
Toxicity ⓘ ✕	Production - market location ⓘ ✕	Transportation routes ⓘ ✕	Packaging to Product weight ratio ⓘ ✕
Durability ⓘ ✕	Origin of energy ⓘ ✕	Energy efficiency of transportation modes ⓘ ✕	Diversity of materials ⓘ ✕
Water efficiency ⓘ ✕	Raw materials efficiency ⓘ ✕	Environmental impact of transportation system ⓘ ✕	Packaging Reuse/ Recovery Rate ⓘ ✕
Local Production ⓘ ✕			Filling technology ⓘ ✕
			Waste from packaging ⓘ ✕
			Recycled content ⓘ ✕

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

2.1. Environmental Assessment

Please, assess each lifecycle criterion (from 1 to 5) using the given (scale♥)

Make sure to use integer values and leave a '0' if you do not have the information to answer. Finally, click 'Save' when you are finished.

The results of the assessment will be made available when the coordinator changes the state of the project to **3-Strategy Selection**.

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Stage 1 Raw Materials

Diversity of materials	3
Amount of materials	1
Durability	5
Recycled content	1
Toxicity	2
Water efficiency	4
Local Production	4

Materials

- Adjustment of the size of the aluminum disc to the dimensions of the tube.
- Bisphenol free varnishes
- Water based enamels
- Optimal specifications of the materials.
- Minimum number of references of materials.
- Management of the stock of materials according to their expiration.

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Stage 2 Production

Efficiency of production technology	1
Energy efficiency	2
Raw materials efficiency	1
Origin of energy	5
Waste generation	4
Production - market location	5

Manufacturing

- Adjustment of the pipe manufacturing process to obtain a better surface finishing.
- Regeneration of energy in the manufacturing plant.
- Minimum amount of waste in manufacturing.
- Minimum temperature in the varnish drying ovens and inks

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Stage 3

Transportation to packer

Efficiency of transported load	1
Efficiency of occupied volume	1
Distances	4
Transportation routes	4
Energy efficiency of transportation modes	5
Environmental impact of transportation system	5

Transportation to packer

- Minimum variety of box references for transport.
- Increase in the number of packaging units per unit of transport.
- Transport boxes adapted to the dimensions of the transport unit

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Stage 2 Filling / packing

Standardization of packaging sizes	2
Amount of packaging materials	1
Packaging to Product volume ratio	1
Packaging to Product weight ratio	1
Diversity of materials	3
Recycled content	3
Packaging Reuse/ Recovery Rate	5
Waste from packaging	4
Filling technology	2

Packing

- Closure of the tube with less amount of material.
- Without plastic stopper in single-dose containers.

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Main environmental aspects

Materials

- Adjustment of the size of the aluminum disc to the dimensions of the tube.
- Bisphenol free varnishes
- Water based enamels
- Optimal specifications of the materials.
- Minimum number of references of materials.
- Management of the stock of materials according to their expiration.

Manufacturing

- Adjustment of the pipe manufacturing process to obtain a better surface finishing.
- Regeneration of energy in the manufacturing plant.
- Minimum amount of waste in manufacturing.
- Minimum temperature in the varnish drying ovens and inks

Transportation to packer

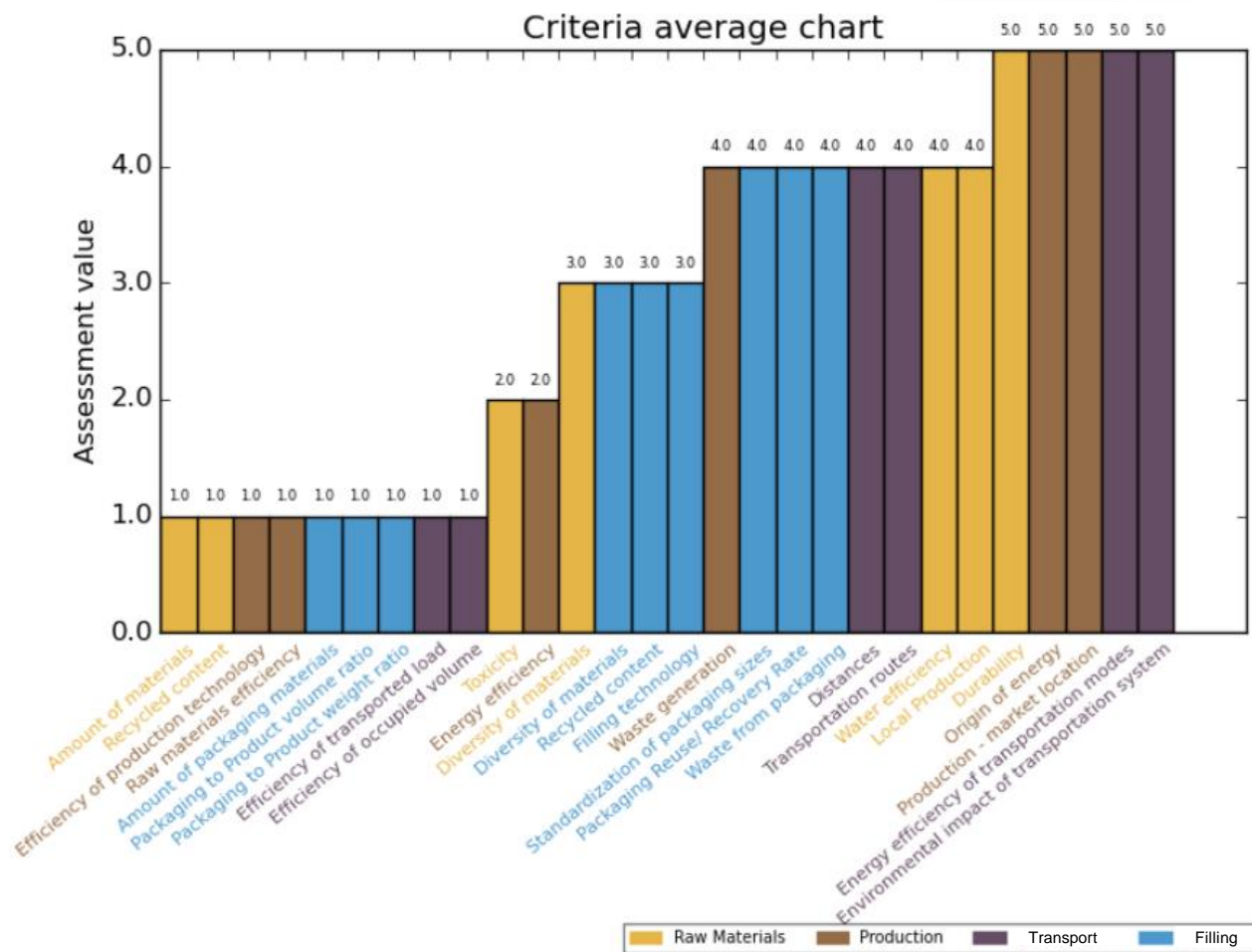
- Minimum variety of box references for transport.
- Increase in the number of packaging units per unit of transport.
- Transport boxes adapted to the dimensions of the transport unit

Filling / Packing

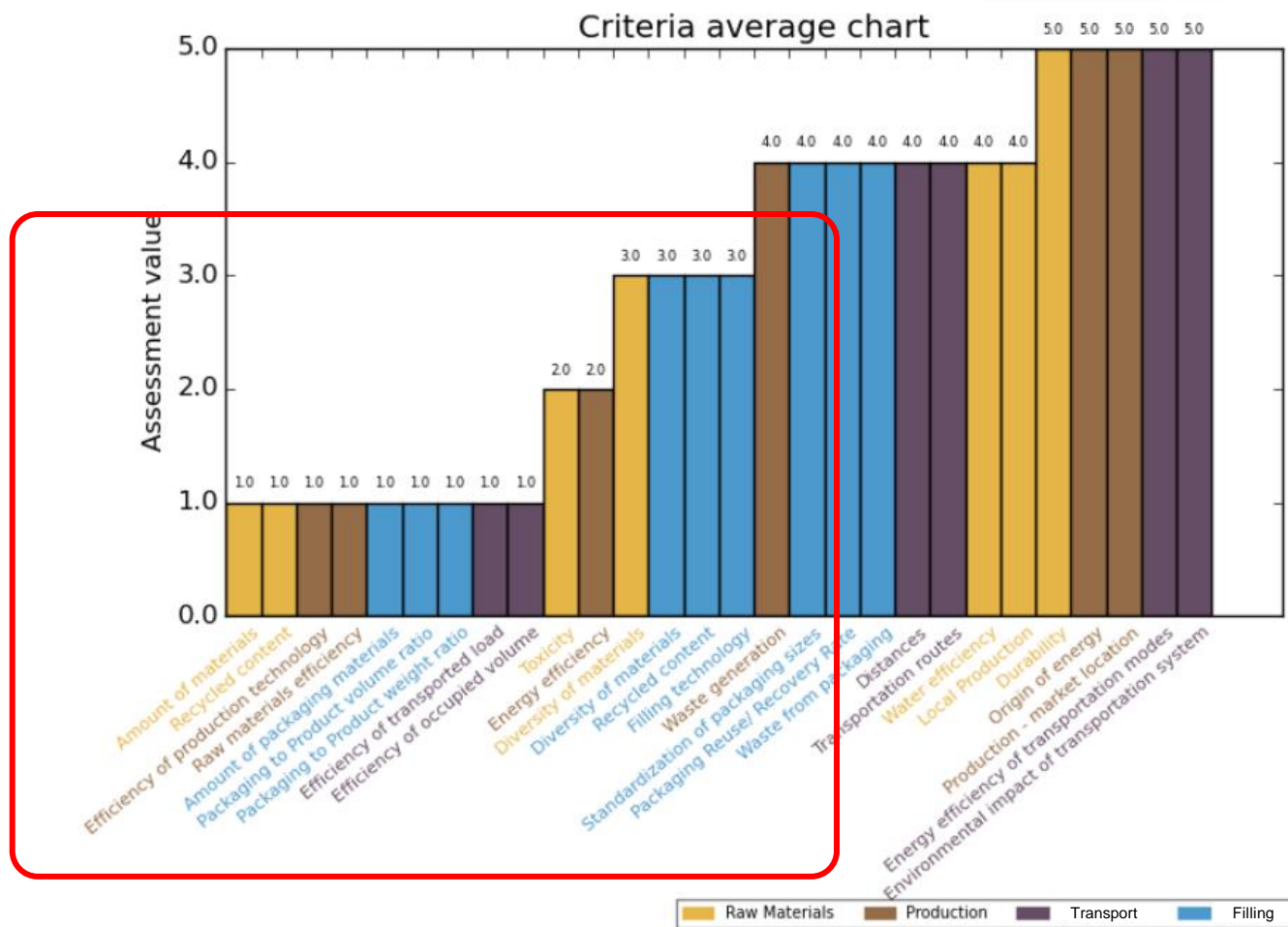
- Closure of the tube with less amount of material.
- Without plastic stopper in single-dose containers.

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer



Case Study nr. 1 · Perspective of the manufacturer



Case Study nr. 1 · Perspective of the manufacturer

Prioritisation and LCA

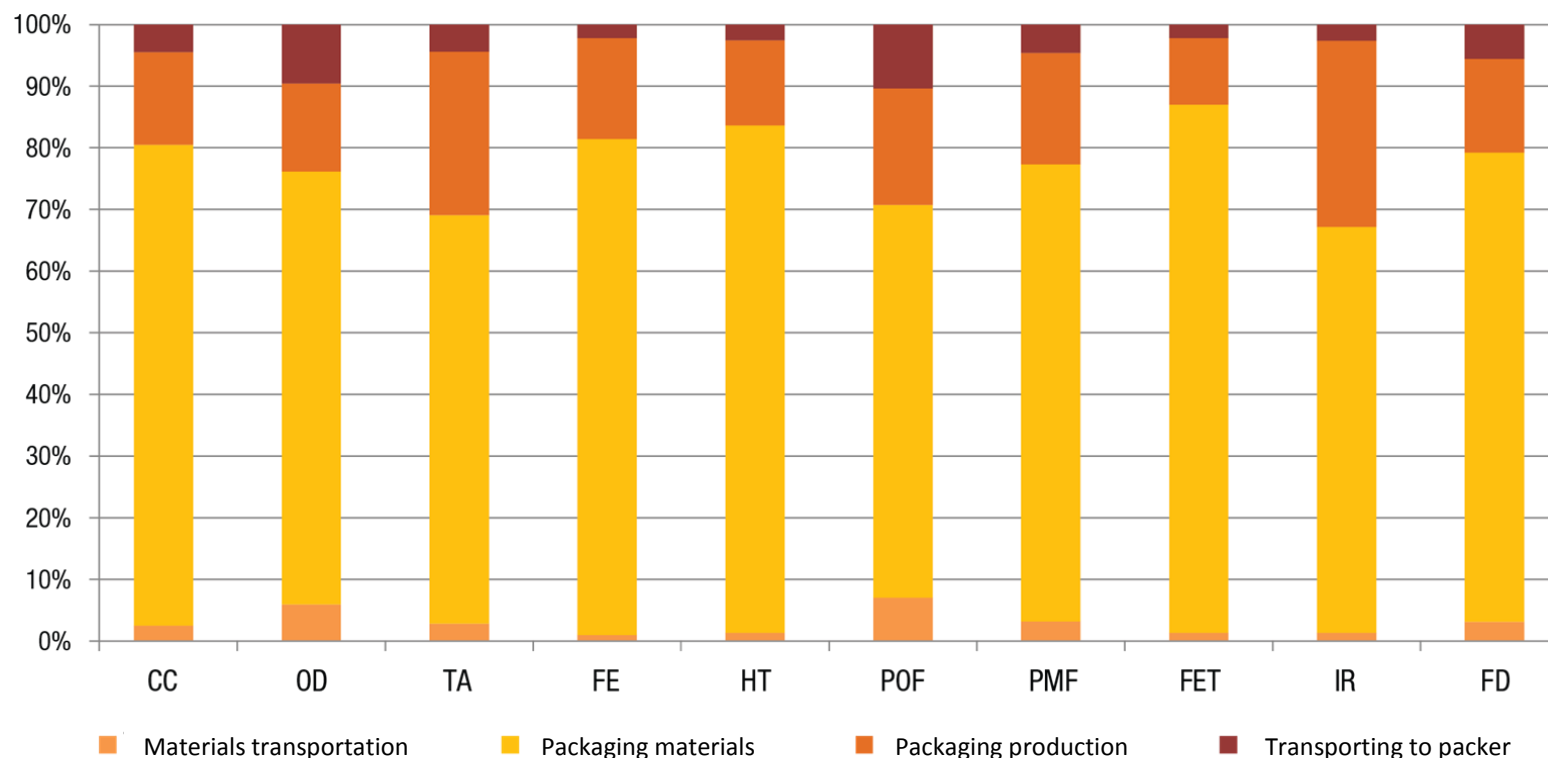
The aspects considered as priorities are:

- No plastic stopper in single-dose containers.
- Management of the stock of materials according to their expiration.
- Optimal material specifications.
- Adjustment of the size of the aluminum disc to the dimensions of the tube.
- Increase in the number of packaging units per unit of transport.

The environmental inventory of the squeezable container tube has been analyzed under the perspective of life cycle analysis (according to ISO 14040: 2006, by means of the analysis software environmental SimaPro 8.2.0.0. and applying the ReCiPe Method V1.12)

Case Study nr. 1 · Perspective of the manufacturer

Environmental impacts (current design)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Evaluating the LCA

At a global level, the stage of the life cycle that presents a greater contribution to the environmental profile for the categories of impact considered are the packaging materials; in Second important degree is the manufacture of

compressible tube. Specifically, the critical points for The compressible container tube are:

- Virgin aluminum.
- Manufacturing processes of the compressible tube (consumption in operation).
- White polyurethane compound (enamel).
- Transportation by truck (aluminum).
- Four-point boxes with lid (finished container tube).

Case Study nr. 1 · Perspective of the manufacturer

3.1. Selection of ecodesign strategies

Based on the previous environmental assessment, edTOOL suggests a series of ecodesign strategies that could be applied to your product/service. These strategies correspond to those 2 life cycle stages with worse environmental performance. Please, feel free to add other predefined strategies from the list under the **Add Strategy** label, or define new strategies under the **New Custom strategy** label. For your guidance, please, note that the User Guide includes a list of potential ecodesign strategies and a brief description of each of them.

Once the list is ready, please check if the strategies are appropriate for your product/service and if they have already been completed/applied. Only those strategies that are marked as *Appropriate* and that are not marked as *Completed* will be considered for further evaluation.

Add strategy

New custom strategy

Lifecycle stage:

Raw Materials ▼

Strategy:

Reduce material input by des ▼

This strategy aims to reduce the use of materials to the minimum, always considering the requirements of the product (strenght, durability, service life, etc.).

Add

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Strategy	Appropriate	Completed	Delete
Lifecycle stage: Raw Materials			
Reduce number of different types of material ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Reduce material input by means of dematerialization ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Reduce material input by means of a simple principle of functioning ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Select materials without toxic, nocive and harmful substances ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Lifecycle stage: Production			
Minimize and simplify the production processes ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Use techniques that optimize energy use ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Maximum product usability ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Lifecycle stage: Transport to packer			
Use stackable product packaging ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Optimize the volume occupied in the vehicle ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Lifecycle stage: Filling / packing			
Dimension the packaging according to standard transportation measures ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Reduce the packaging to the minimum ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Optimize the relationship between the volume of the packaging and the product ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Optimize the relationship between the weight of the packaging and the product ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕
Reduce amount of waste from packaging ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✕

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

3.2. Prioritization of ecodesign strategies

Please, assess the viability of each ecodesign strategy (from 1 to 5) using the given (scale▼)

Check the strategies you want to include in the action plan. We suggest that you select **at least**, the strategies with a viability equal or higher than 4.0.

Once you have completed the assessment and selected the strategies to be included in the Action Plan, please click on **Save**.

Description	Weight of each aspect	Social 1	Economic 3	Technical 2	Avg.	Action plan
Lifecycle stage: Raw Materials						
Reduce number of different types of material ⓘ		0	5	0	2.50	<input checked="" type="checkbox"/>
Reduce material input by means of dematerialization ⓘ		0	4	3	3.00	<input checked="" type="checkbox"/>
Reduce material input by means of a simple principle of functioning ⓘ		0	0	3	1.00	<input type="checkbox"/>
Select materials without toxic, nocive and harmful substances ⓘ		4	3	4	3.50	<input checked="" type="checkbox"/>
Lifecycle stage: Production						
Minimize and simplify the production processes ⓘ		0	5	4	3.83	<input type="checkbox"/>
Use techniques that optimize energy use ⓘ		0	3	0	1.50	<input type="checkbox"/>
Maximum product usability ⓘ		4	5	3	4.17	<input checked="" type="checkbox"/>
Lifecycle stage: Transportation to packer						
Use stackable product packaging ⓘ		0	0	0	0.00	<input type="checkbox"/>
Optimize the volume occupied in the vehicle ⓘ		0	5	4	3.83	<input checked="" type="checkbox"/>
Lifecycle stage: Filling / packing						
Dimension the packaging according to standard transportation measures ⓘ		0	5	4	3.83	<input checked="" type="checkbox"/>
Reduce the packaging to the minimum ⓘ		0	3	4	2.83	<input type="checkbox"/>
Optimize the relationship between the volume of the packaging and the product ⓘ		0	5	4	3.83	<input checked="" type="checkbox"/>
Optimize the relationship between the weight of the packaging and the product ⓘ		0	4	4	3.33	<input type="checkbox"/>
Reduce amount of waste from packaging ⓘ		4	4	3	3.67	<input checked="" type="checkbox"/>

Case Study nr. 1 · Perspective of the manufacturer

Ecodesign ideas

Dematerialize the container

- Remove the cap of the single-dose container; apply a membrane with hammer.
- Remove the sealing band to close the tube.

Optimize processes

- Increase the conicity of the tubes to stack them in their transportation to packaging.
- Replace the current tube decoration with a label.
- Increase temperature control in ovens of drying.

Case Study nr. 1 · Perspective of the manufacturer

Ecodesign ideas

Improve usability

- Incorporate a tool to compress-roll the tube and facilitate the extraction of the content.
- Equip the tube with a pushing device, using a plunger, to extract the contents.
- Integrate an internal separation in the tube that allows to separate and mix the bicomponent contents.




Case Study nr. 1 · Perspective of the manufacturer

3.3. Ecodesign Action Plan

The definition of the Action Plan may require a particular effort in terms of time and resources, since it implies an exercise of materialization of strategies into concrete strategies. For this, it is considered as a *Plus* step

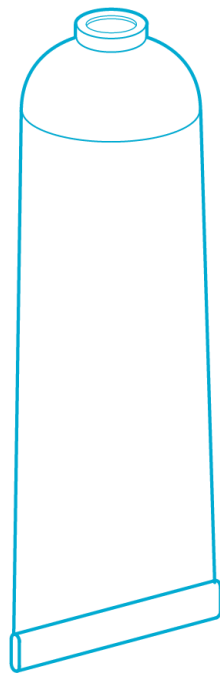
Please, define concrete actions to be carried out in order to materialize the selected ecodesign strategies, and establish responsibilities and deadlines.

When the Action Plan is ready, the coordinator will be able to move forward to the **4-Summary Report** state.

Strategies	Actions		
Lifecycle stage: Raw Materials			
Reduce number of different types of material 	Action	Deadline	Responsible
	Remove the cap of the single-dose container.	2019-06-30	Technical department
Reduce material input by means of dematerialization 	Action	Deadline	Responsible
	Redesign the mouth of the tube to optimize manufacturing	2019-08-31	Technical Department
Select materials without toxic, nocive and harmful substances 	Action	Deadline	Responsible
	Replace the current tube decoration with a label.	2019-01-31	Procurement / Purchase
Lifecycle stage: Production			

Case Study nr. 1 · Perspective of the manufacturer

Ecodesign proposal

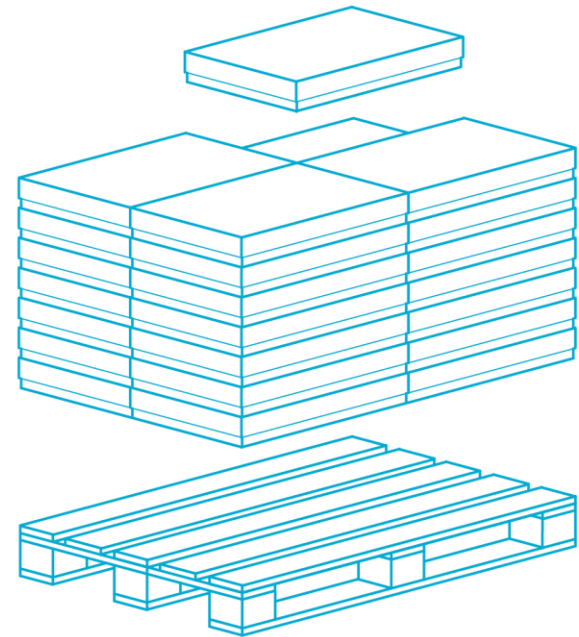


Squeezable container tube
3.88g Aluminium*
0.5g transparent enamel



*Aluminium disc
diameter 24.7 x 3.0mm

Self-assembling box + 4 point cap
(374u tubes)
600 x 400 x 100 mm
185 + 156 g cardboard

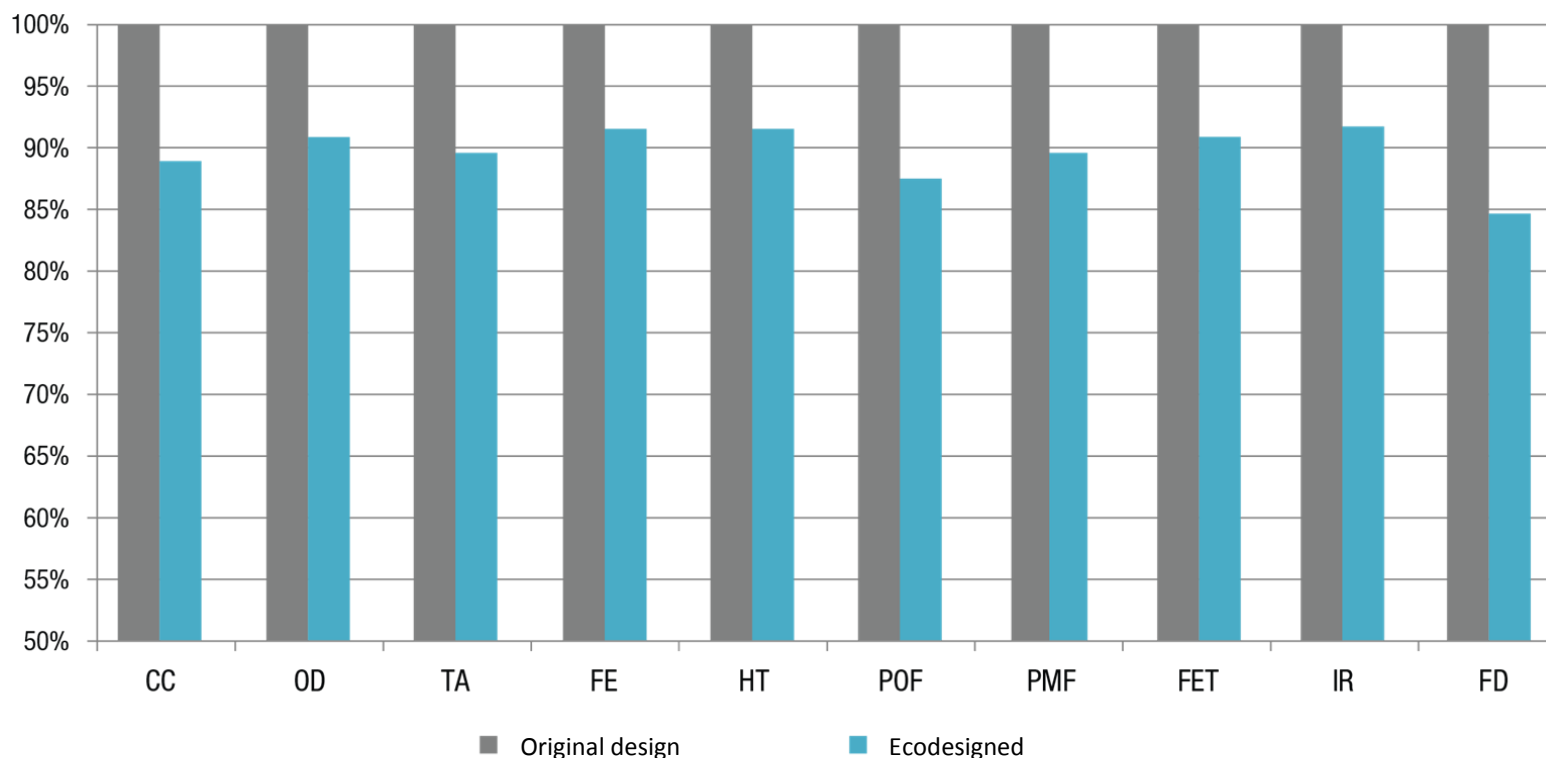


4u boxes / level
28u boxes / pallet
10.472u tubes / pallet
1200 x 800 x 700 mm

Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Environmental impacts (ecodesign)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

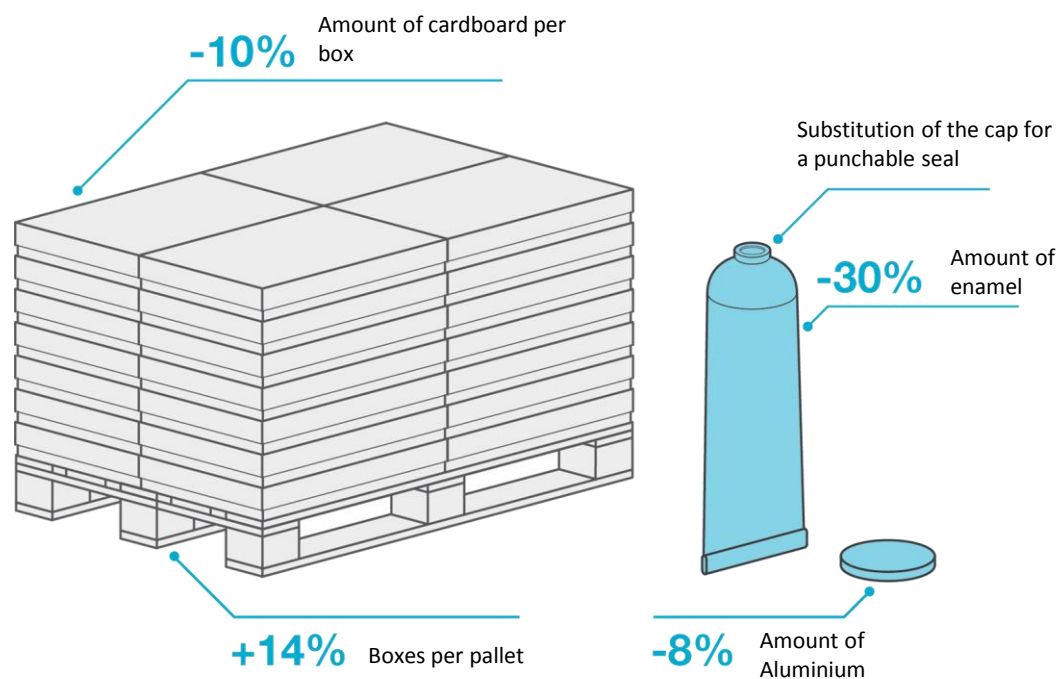
Source: inédit

Case Study nr. 1 · Perspective of the manufacturer

Environmental benefit & conclusions

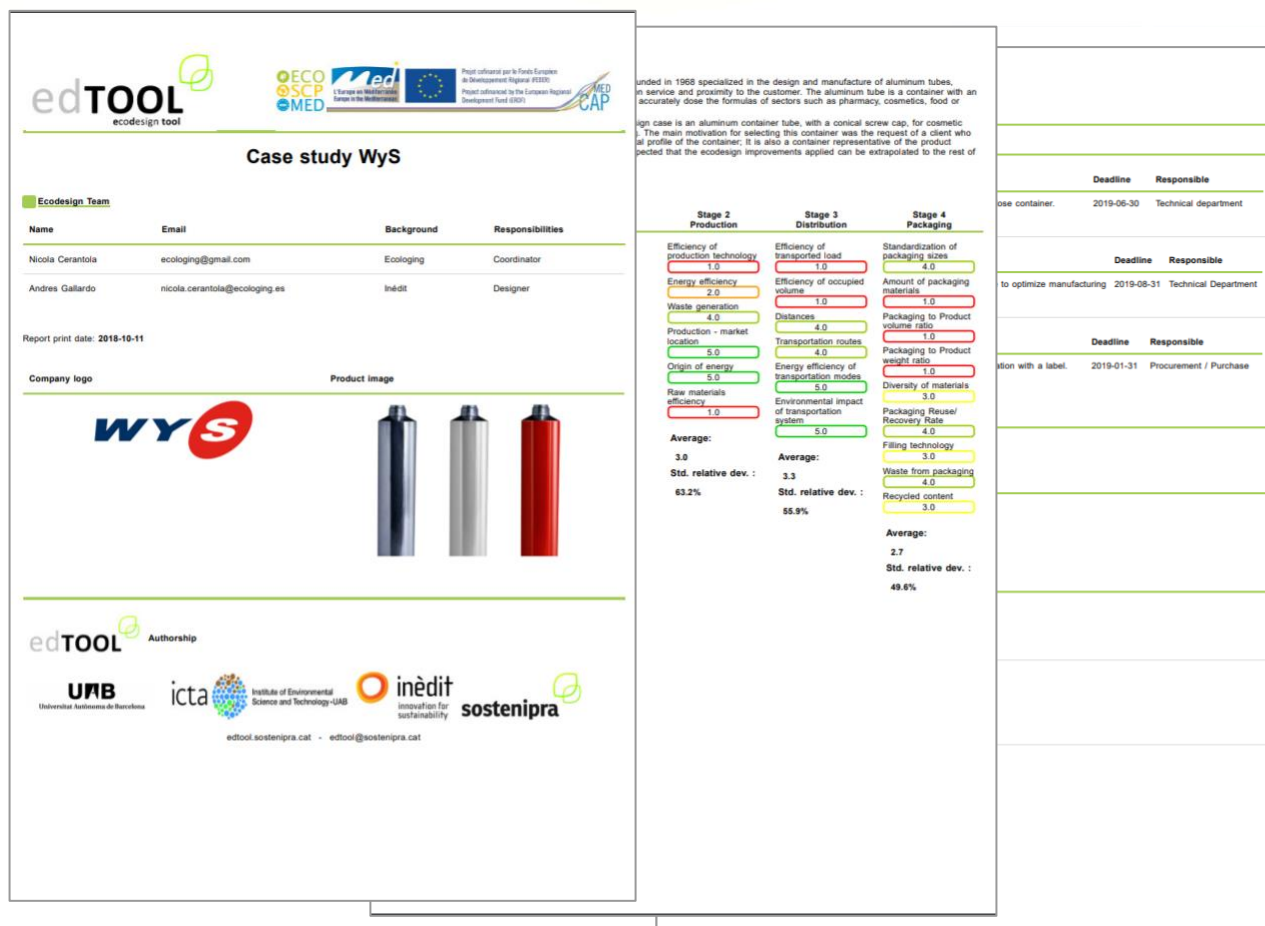
Environmental profile of the global packaging system

-11%	Climate change (CC) (Kg CO2 eq)
+9%	Ozone depletion (OD) (Kg CFC-11 eq)
-10%	Land-based acidification (TA) (Kg SO2 eq)
-15%	Depletion of fossil resources (FD)(Kg oil eq)



Source: inédit

Case Study nr. 1 · Perspective of the manufacturer



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler



Case study

From perspective of the packer of seafood and shellfish (Pescanova)

PESCANOVA

Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

1.1. Ecodesign Team Manage project members

Please, add the team members participating in the ecodesign project. They may be staff from the company and/or external assessors. Please, make sure that the team includes, as much as possible, professionals with different roles in the company (including direction, design, logistics, marketing, accounting).

Add member

Name	Email	Background	Responsibilities	
<ul style="list-style-type: none">● ecodesign expert● wys team:<ul style="list-style-type: none">○ Projects○ Industrial○ Management Control○ Marketing.				

Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

1.2. Ecodesign Project Description & Objectives

Please, describe the product/service to be ecodesigned and the objectives that are pursued by using edTOOL.

Edit

Name: Case study Pescanova · From Packer

Description: Pescanova is a fishing company dedicated to the capture, cultivation, production, packaging and marketing sea products, both fresh and frozen.

Objectives: The packaging object of the ecodesign practical case is a flowpack packaging of 6 bags of 4 seafood sticks (surimi), with a total of 460g, on a paperboard tray. The motivations for selecting this packaging are technological innovation, the company is investigating more efficient packaging processes, and the pressure exerted by the customer of this reference of packaging of seafood sticks (surimi), to optimize logistics.

Report comment: The container panel that Pescanova has formed for the ecodesign of the container is composed of representatives from the departments of: Projects, Industrial, Management Control, Marketing.

Company Logo:



Product image:



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

1.3. Legal requisites Associated with the Ecodesign Project.

[Optional Step] Please, write down the most important legislation and regulations affecting the product/service.

Add requisite

2 records found

Name	Description	Attached file	
UNE-EN 13430:2005	Requirements for ...	(no file)	View Edit Delete
UNE-EN 13428:2005	on the Prevention	(no file)	View Edit Delete

It must be in accordance with the European legislation on the prevention of risks to the consumers' health and on environment protection and particularly relating to waste treatment. Packages in wood or plant material can be subjected to a phytosanitary check.

Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

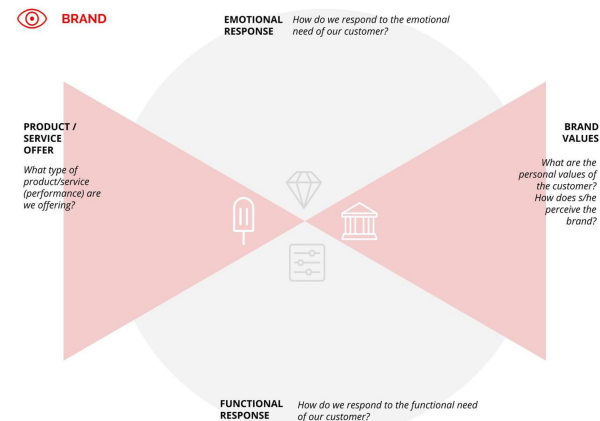
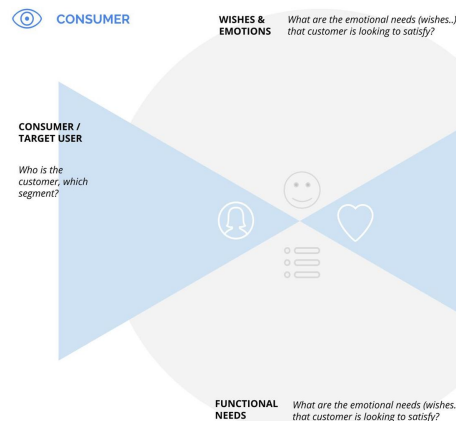
1.4. Market study Information on competing products/services.

[Optional Step] Please, describe the alternatives to your product already existing in the market.

←Back Edit

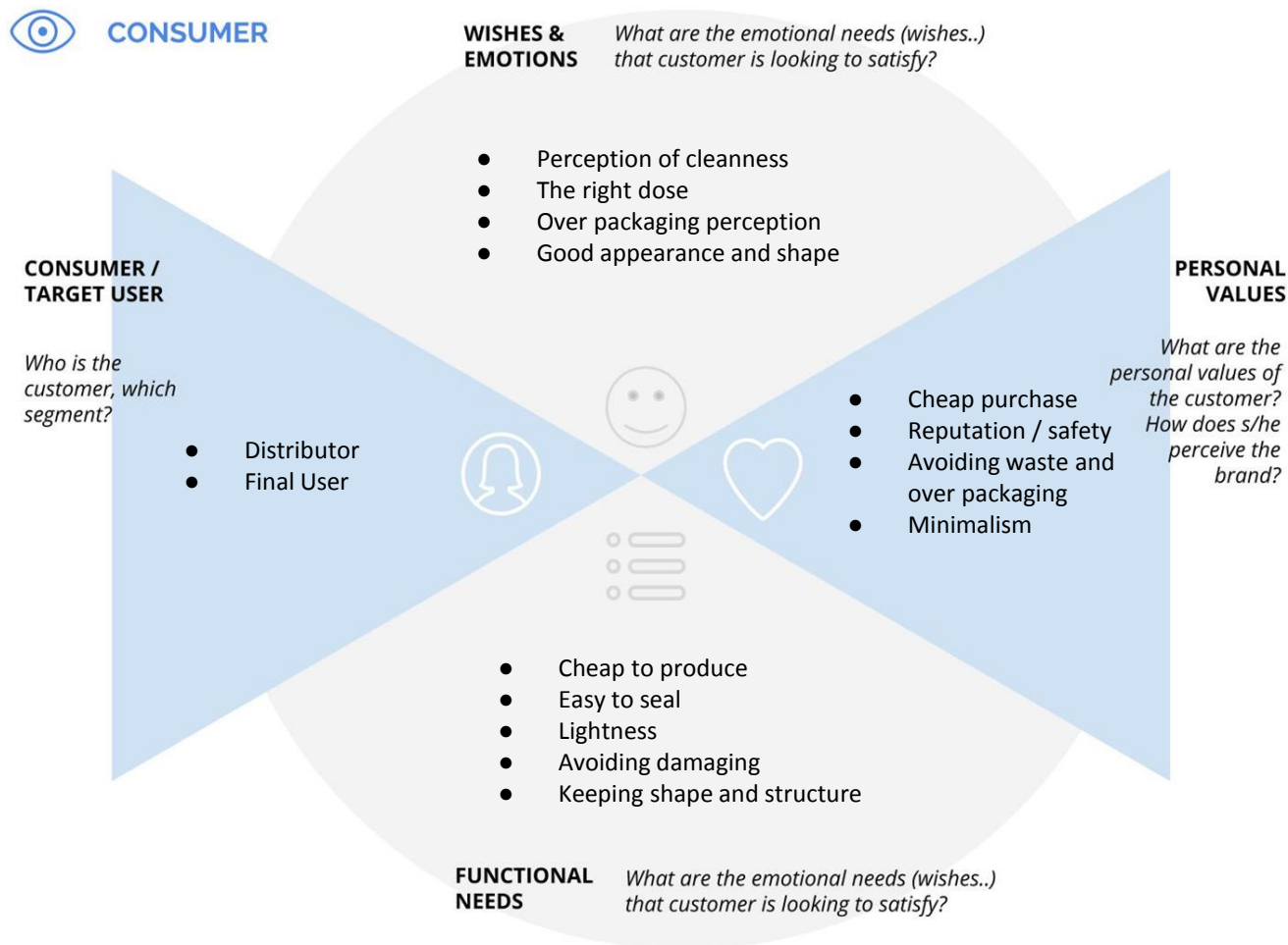
Description: A market study is useful when defining requirements; preparing budgets; choosing procurement method; planning and scheduling the procurement of goods, services and works; evaluation of bids/proposal, and sometimes to justify contract amendments.

Image:



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler



Case Study nr. 2 · Perspective of the packer / filler



BRAND

EMOTIONAL RESPONSE

*How do we respond to the emotional
need of our customer?*

- Good looking appearance
- Quality materials
- Caring for safety
- Minimising packaging

PRODUCT / SERVICE OFFER

*What type of
product/service
(performance) are
we offering?*

- Flowpack of seafood
sticks (surimi)



BRAND VALUES

*What are the
personal values of
the customer?
How does s/he
perceive the
brand?*

- Cost efficient
- Good quality
- Avoiding waste



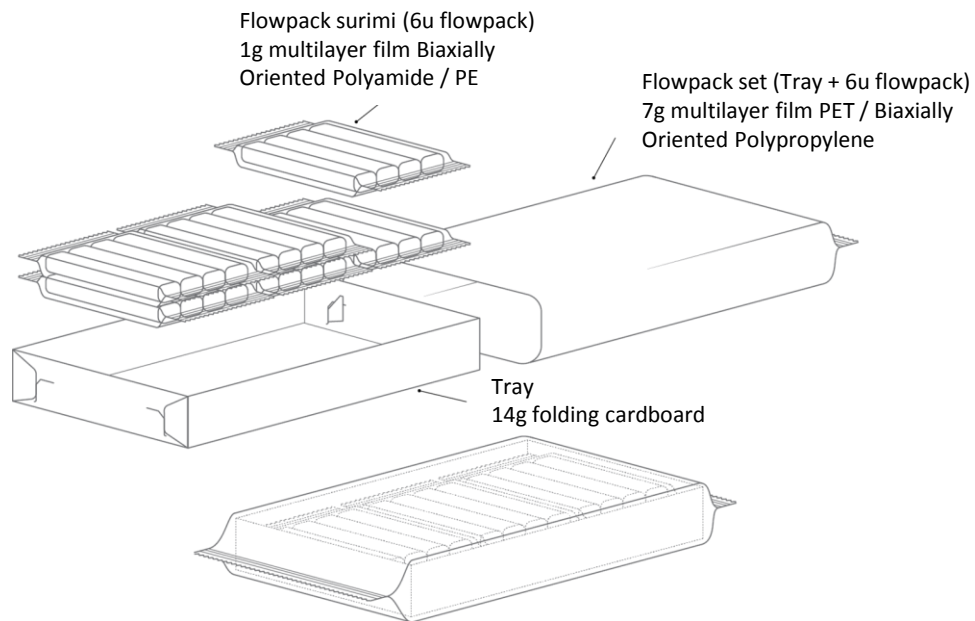
- Easy to handle and storing
- Sealing properties
- Efficiency in packaging /
transporting
- Top quality inert material

FUNCTIONAL RESPONSE

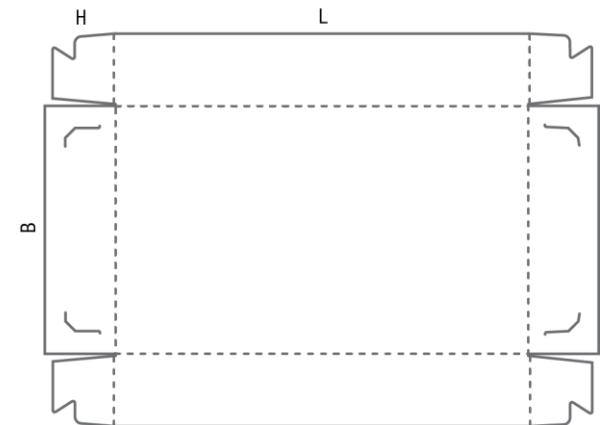
*How do we respond to the functional need
of our customer?*

Case Study nr. 2 · Perspective of the packer / filler

Current features



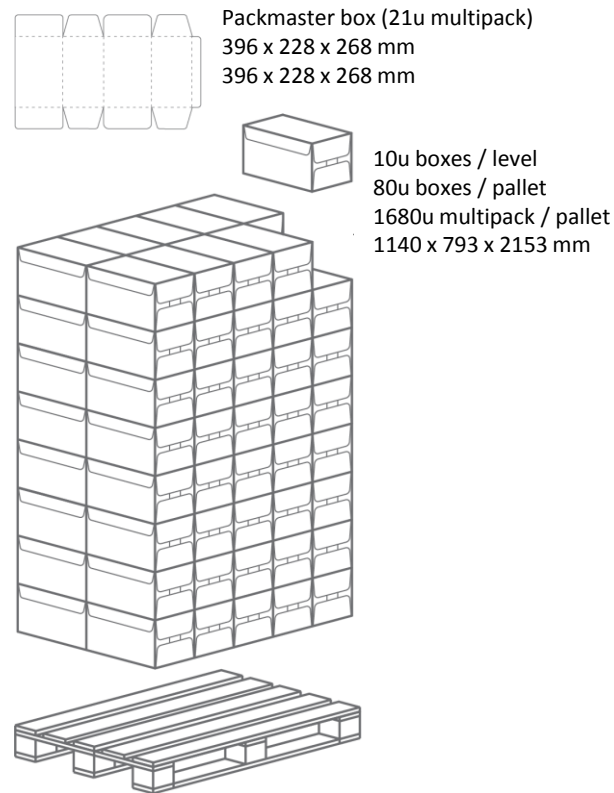
Tray
200 (L) x 120 (B) x 34 (H) mm
14.0g Cardboard (+0.5g cut losses)



Source: inédit

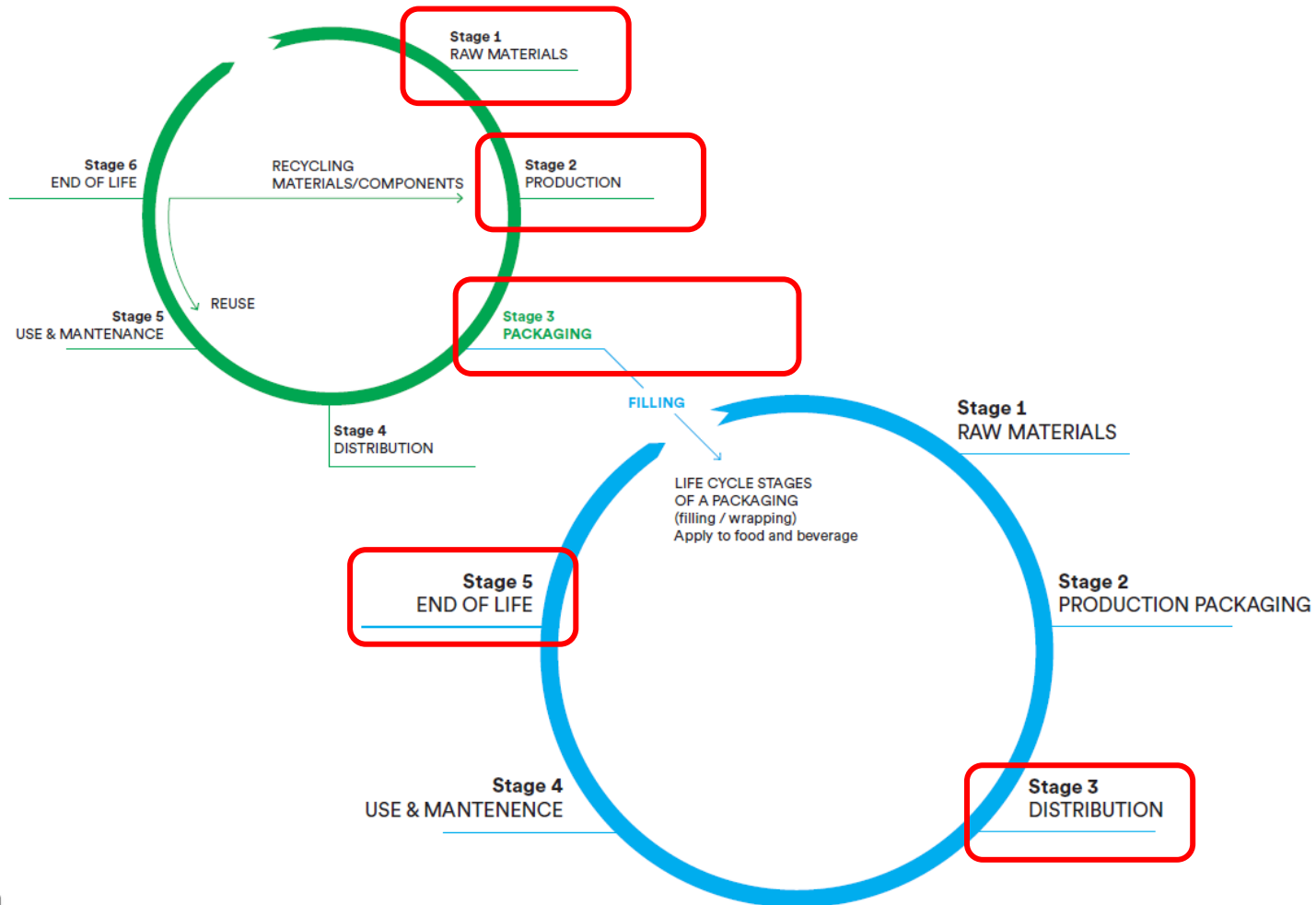
Case Study nr. 2 · Perspective of the packer / filler

Current features



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler



Case Study nr. 2 · Perspective of the packer / filler

1.5 Customize Lifecycle stages

Add lifecycle stage

Add custom lifecycle stage

Manage custom lifecycle stages

Lifecycle stage Position

Position	Lifecycle stage	
1	Raw Materials	<input type="button" value="↓"/> <input type="button" value="×"/>
2	Production	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="×"/>
3	Packaging	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="×"/>
4	Distribution	<input type="button" value="↑"/> <input type="button" value="↓"/> <input type="button" value="×"/>
5	End of life	<input type="button" value="↑"/> <input type="button" value="×"/>

Case Study nr. 2 · Perspective of the packer / filler

1.6 Customize criteria for Environmental Assessment

This table presents the most common life cycle stages for any product/service:

materials > production > packaging > distribution > use & maintenance > end of life

For each life cycle stage, a selection of default life cycle criteria is presented, which will be used in order to perform an environmental assessment of the reference product/service. The criteria included in the table should be adapted to each project, so you may remove some of the default life cycle criteria or add new ones. Additional life cycle criteria can be added from a predefined list with other criteria, available under the **Add** label. or you can create new customized criteria under the **Add custom** label.

Stage 1 Raw Materials	Stage 2 Production	Stage 3 Packaging	Stage 4 Distribution	Stage 5 End of life
Diversity of materials ⓘ ✕	Process complexity ⓘ ✕	Standardization of packaging sizes ⓘ ✕	Efficiency of transported load ⓘ ✕	Separability of components ⓘ ✕
Amount of materials ⓘ ✕	Efficiency of production technology ⓘ ✕	Amount of packaging materials ⓘ ✕	Efficiency of occupied volume ⓘ ✕	Communication about end-of-life ⓘ ✕
Ecological rucksack of materials ⓘ ✕	Energy efficiency ⓘ ✕	Packaging to Product volume ratio ⓘ ✕	Distances ⓘ ✕	Identificability of materials ⓘ ✕
Renewability ⓘ ✕	Waste generation ⓘ ✕	Packaging to Product weight ratio ⓘ ✕	Energy efficiency of transportation modes ⓘ ✕	Service life ⓘ ✕
Recycled content ⓘ ✕	Closed/Open production cycle ⓘ ✕	Filling technology ⓘ ✕	Environmental impact of transportation system ⓘ ✕	
			Environmental sustainability of logistics ⓘ ✕	
			Efficient display ⓘ ✕	
			Appreciation of the product ⓘ ✕	

Case Study nr. 2 · Perspective of the packer / filler

2.1. Environmental Assessment

Please, assess each lifecycle criterion (from 1 to 5) using the given (scale▼)

Make sure to use integer values and leave a '0' if you do not have the information to answer. Finally, click 'Save' when you are finished.

The results of the assessment will be made available when the coordinator changes the state of the project to **3-Strategy Selection**.

Stage 1 Raw Materials	Stage 2 Production	Stage 3 Packaging	Stage 4 Distribution	Stage 5 End of life
Diversity of materials ⓘ <input type="text" value="1"/>	Process complexity ⓘ <input type="text" value="4"/>	Standardization of packaging sizes ⓘ <input type="text" value="4"/>	Environmental sustainability of logistics ⓘ <input type="text" value="5"/>	Separability of components ⓘ <input type="text" value="3"/>
Amount of materials ⓘ <input type="text" value="2"/>	Efficiency of production technology ⓘ <input type="text" value="3"/>	Amount of packaging materials ⓘ <input type="text" value="2"/>	Efficiency of transported load ⓘ <input type="text" value="3"/>	Communication about end-of-life ⓘ <input type="text" value="1"/>
Ecological rucksack of materials ⓘ <input type="text" value="4"/>	Energy efficiency ⓘ <input type="text" value="4"/>	Packaging to Product volume ratio ⓘ <input type="text" value="1"/>	Efficiency of occupied volume ⓘ <input type="text" value="3"/>	Identifiability of materials ⓘ <input type="text" value="1"/>
Renewability ⓘ <input type="text" value="5"/>	Waste generation ⓘ <input type="text" value="3"/>	Packaging to Product weight ratio ⓘ <input type="text" value="1"/>	Distances ⓘ <input type="text" value="5"/>	Service life ⓘ <input type="text" value="5"/>
Recycled content ⓘ <input type="text" value="5"/>	Closed/Open production cycle ⓘ <input type="text" value="4"/>	Filling technology ⓘ <input type="text" value="2"/>	Energy efficiency of transportation modes ⓘ <input type="text" value="0"/>	
			Environmental impact of transportation system ⓘ <input type="text" value="0"/>	
			Efficient display ⓘ <input type="text" value="4"/>	

Case Study nr. 2 · Perspective of the packer / filler

Stage 1 Raw Materials

Diversity of materials	1
Amount of materials	2
Ecological rucksack of materials	4
Renewability	5
Recycled content	5

Materials

- Simplification of the diversity of materials.
- Minimum amount of packaging material.
- Container materials with lower environmental impact.

Case Study nr. 2 · Perspective of the packer / filler

Stage 2 Production

Process complexity	4
Efficiency of production technology	3
Energy efficiency	4
Waste generation	3
Closed/Open production cycle	4

Production

- Elimination of packaging elements.
- Application of more efficient manufacturing techniques.
- Minimum manufacturing operations of the packaging

Case Study nr. 2 · Perspective of the packer / filler

Stage 3 Packaging

Standardization of packaging sizes ⓘ

4

Amount of packaging materials ⓘ

2

Packaging to Product volume ratio ⓘ

1

Packaging to Product weight ratio ⓘ

1

Filling technology ⓘ

2

Packaging (packing / filling)

- Alternative technique to steam pasteurization.
- Optimal packaging proportions.

Case Study nr. 2 · Perspective of the packer / filler

Stage 4 Distribution

Environmental sustainability of logistics	5
Efficiency of transported load	3
Efficiency of occupied volume	3
Distances	5
Energy efficiency of transportation modes	0
Environmental impact of transportation system	0
Efficient display	4
Appreciation of the product	4

Distribution

- Packaging dimensions adjusted to logistics.
- Optimum relation of container volume and content.

Final distribution

- Maximum visibility of the brand.
- Optimal perception of overpack of the product.
- Improvement of the opening and closing of the container.
- Container that facilitates a better consumption of the product.

Case Study nr. 2 · Perspective of the packer / filler

Stage 5 End of life

Separability of components	3
Communication about end-of-life	1
Identifiability of materials	1
Service life	5

End of life

- Use of badges to enhance the selective collection of container.
- Easily separable packaging materials.

Case Study nr. 2 · Perspective of the packer / filler

Main environmental aspects

Materials

- Simplification of the diversity of materials.
- Minimum amount of packaging material.
- Container materials with lower environmental impact.

Production

- Elimination of packaging elements.
- Application of more efficient manufacturing techniques.
- Minimum manufacturing operations of the packaging

Packing

- Alternative technique to steam pasteurization.
- Optimal packaging proportions.

Distribution

- Packaging dimensions adjusted to logistics.
- Optimum relation of container volume and content.

Final distribution

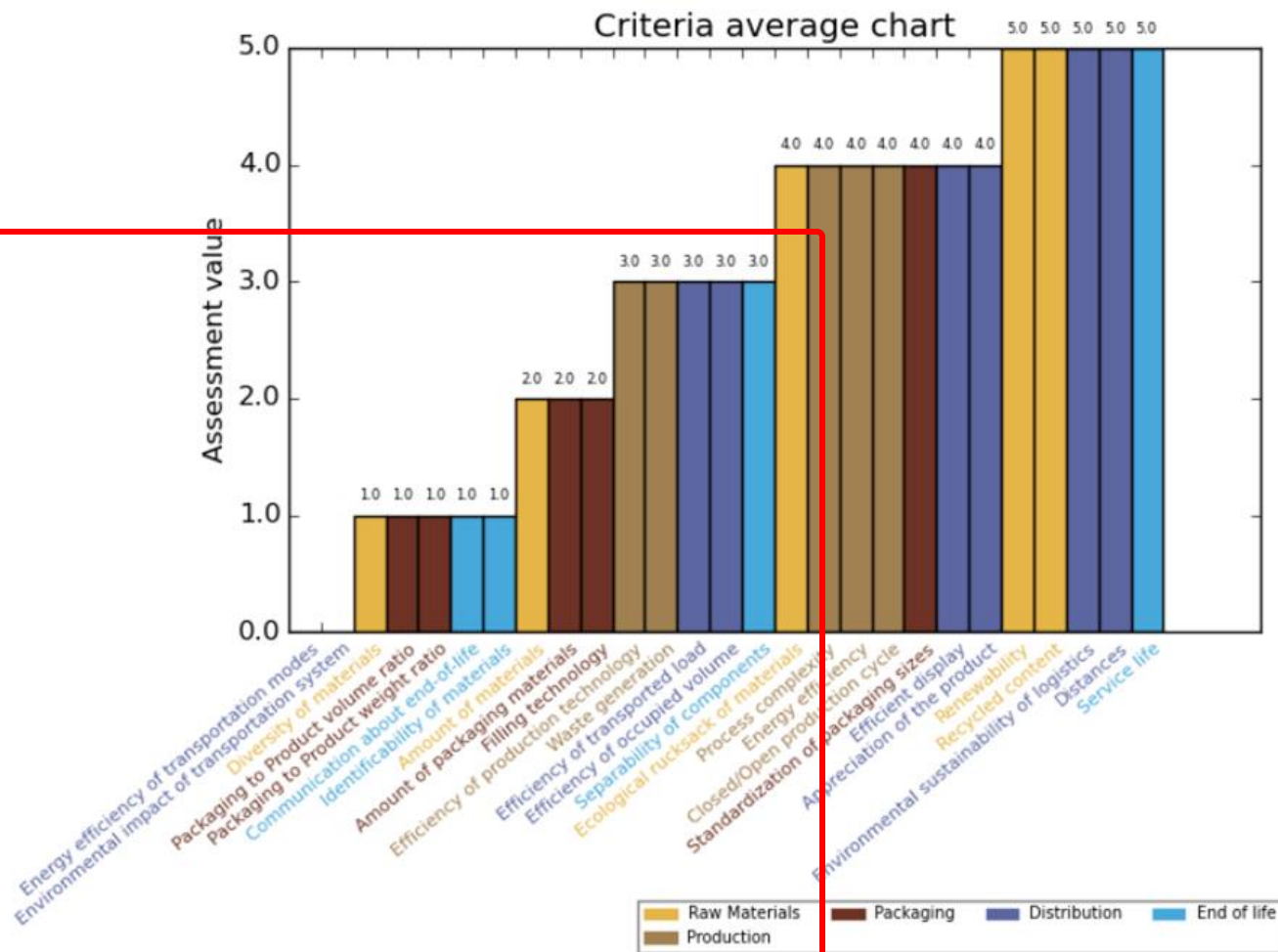
- Maximum visibility of the brand.
- Optimal perception of overpack of the product.
- Improvement of the opening and closing of the container.
- Container that facilitates a better consumption of the product.

End of life

- Use of badges to enhance the selective collection of container.
- Easily separable packaging materials.

Source: inédit

Case Study nr. 2 · Perspective of the packer / filler



Case Study nr. 2 · Perspective of the packer / filler

Prioritisation and LCA

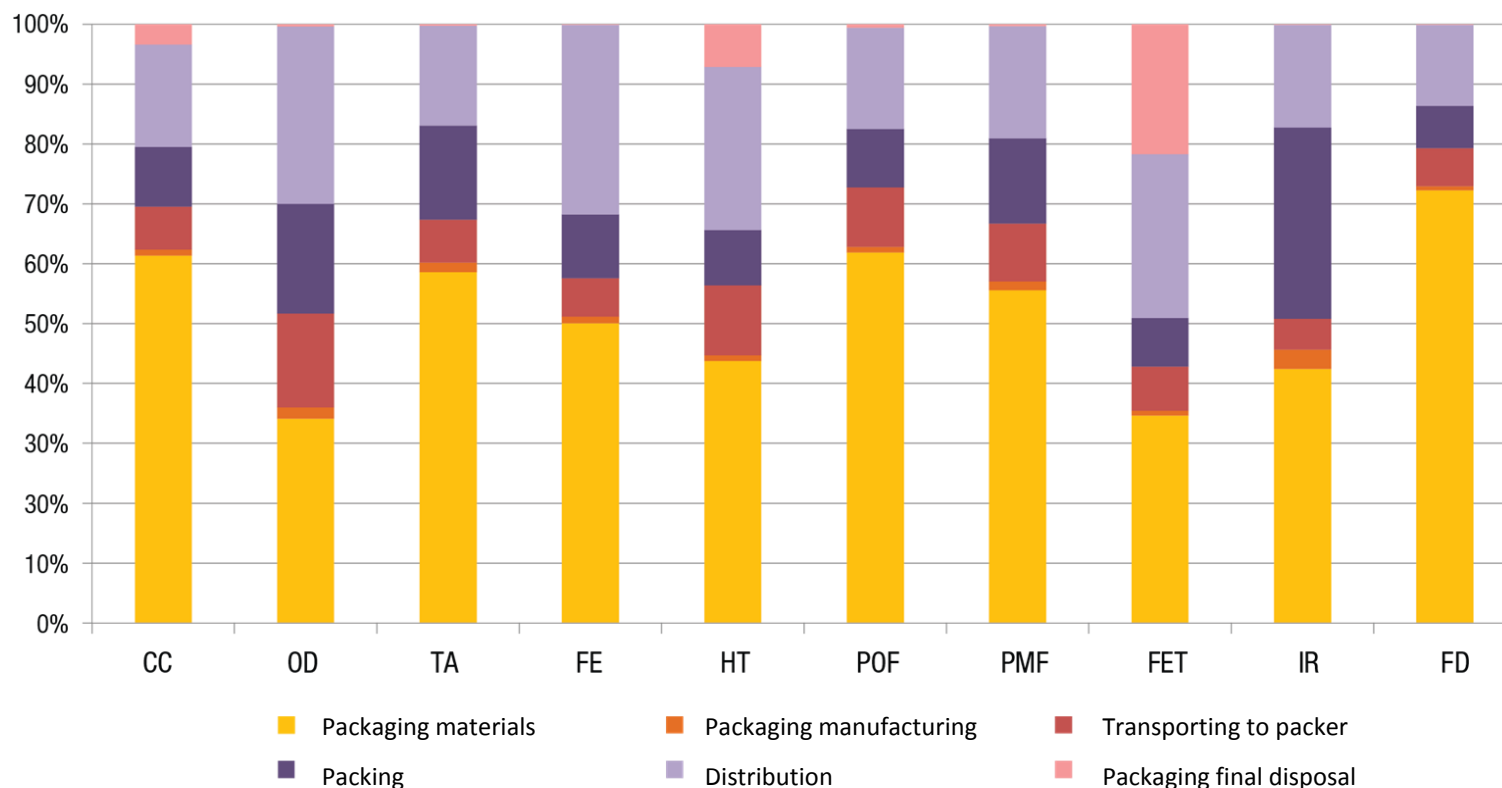
The aspects considered as priorities are:

- Packaging materials with lower environmental impact.
- Removal of packaging elements.
- Minimum amount of packaging material.
- Maximum visibility of the brand.
- Use of badges to enhance the selective collection of packaging waste.

The environmental inventory of the packaging has been analyzed under the perspective of life cycle analysis (according to ISO 14040: 2006, by means of the analysis software environmental SimaPro 8.2.0.0. and applying the ReCiPe Method V1.12)

Case Study nr. 2 · Perspective of the packer / filler

Environmental impacts (current design)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

Evaluating the LCA

At a global level, the stage of the life cycle that presents a greater contribution to the environmental profile for the categories of impact considered are the packaging materials. In second degree of importance stands out the distribution; the transport of the materials to the packed plant and the packaging also have a relevant impact.

Specifically, the critical points for the packaging of seafood sticks are:

- Multilayer PET / BOPP film (bag).
- PE coated paperboard (tray).
- Multi-layer film BOPA / PE (little bags of sea sticks).
- Packaging solution for distribution (final product).
- Energy in the flowpack packaging (tray + sachets + bag).

Case Study nr. 2 · Perspective of the packer / filler

Strategy	Appropriate	Completed	Delete
Lifecycle stage: Production			
Use techniques that reduce the generation of waste and emissions ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lifecycle stage: Packaging			
Reduce the packaging to the minimum ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optimize the relationship between the volume of the packaging and the product ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Use monomaterial packaging ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Label packaging materials (including instructions for disposal) ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lifecycle stage: Distribution			
Use stackable product packaging ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lifecycle stage: End of life			
Ensure simple assembly/disassembly by reduction of parts used ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Make possible separation of materials for recycling and avoid inseparable composite materials ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Take into account end-user's opportunities for disposal and provide for instructions ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Allow an easy identification of materials ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Case Study nr. 2 · Perspective of the packer / filler

3.2. Prioritization of ecodesign strategies

Please, assess the viability of each ecodesign strategy (from 1 to 5) using the given (scale▼)

Check the strategies you want to include in the action plan. We suggest that you select **at least**, the strategies with a viability equal or higher than 4.0.

Once you have completed the assessment and selected the strategies to be included in the Action Plan, please click on **Save**.

Description	Weight of each aspect	Social	Economic	Technical	Avg.	Action plan
		2	3	2		
Lifecycle stage: Production						
Use techniques that reduce the generation of waste and emissions ⓘ		0	5	5	3.57	<input checked="" type="checkbox"/>
Lifecycle stage: Packaging						
Reduce the packaging to the minimum ⓘ		0	4	3	2.57	<input type="checkbox"/>
Optimize the relationship between the volume of the packaging and the product ⓘ		0	5	5	3.57	<input checked="" type="checkbox"/>
Use monomaterial packaging ⓘ		0	3	3	2.14	<input checked="" type="checkbox"/>
Label packaging materials (including instructions for disposal) ⓘ		5	3	5	4.14	<input checked="" type="checkbox"/>
Lifecycle stage: Distribution						
Use stackable product packaging ⓘ		0	4	3	2.57	<input type="checkbox"/>
Lifecycle stage: End of life						
Ensure simple assembly/disassembly by reduction of parts used ⓘ		0	0	0	0.00	<input type="checkbox"/>
Make possible separation of materials for recycling and avoid inseparable composite materials ⓘ		0	2	1	1.14	<input type="checkbox"/>
Take into account end-user's opportunities for disposal and provide for instructions ⓘ		5	5	4	4.71	<input checked="" type="checkbox"/>
Allow an easy identification of materials ⓘ		0	3	3	2.14	<input type="checkbox"/>

Case Study nr. 2 · Perspective of the packer / filler

Ecodesign ideas

Packaging design

- Change the type of the container solution (tray thermoformed or reusable tub or carton box).

Optimize the materiality and manufacture of the container

- Change the layout of the bags of seafood sticks (3 layers of 2 sachets)
- Pack more units of seafood sticks per bag (+ of 4u.).

Case Study nr. 2 · Perspective of the packer / filler

Ecodesign ideas

Select sustainable materials

- Apply cardboard with chain of custody certificate.
- Apply cardboard with recycled fibers.
- Apply bioplastics in replacement of current films.

Sustainable communication

- Identify packaging materials (cardboard and films) multilayer.
- Apply symbols to motivate selective collection of packaging waste.

Case Study nr. 2 · Perspective of the packer / filler

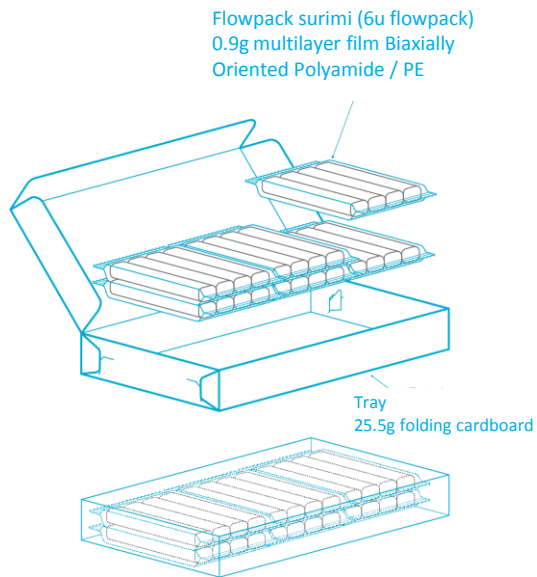
3.3. Ecodesign Action Plan

Strategies	Actions		
Lifecycle stage: Production			
Use techniques that reduce the generation of waste and emissions ③	Action	Deadline	Responsible
	Change the current welding of the flowpack by a welding by ultrasound	2018-11-30	Technical dpt
Lifecycle stage: Packaging			
Optimize the relationship between the volume of the packaging and the product ③	Action	Deadline	Responsible
	Further exploration of assembling systems	2019-10-11	R&D dpt
Use monomaterial packaging ③	Action	Deadline	Responsible
	Remove the tray and the outer bag	2018-12-31	Technical dpt
Label packaging materials (including instructions for disposal) ③	Action	Deadline	Responsible
	Apply symbols to motivate selective collection.	2018-11-30	Technical dpt
Lifecycle stage: End of life			
Take into account end-user's opportunities for disposal and provide for instructions ③	Action	Deadline	Responsible
	Improve communication	2018-12-31	Communication dpt

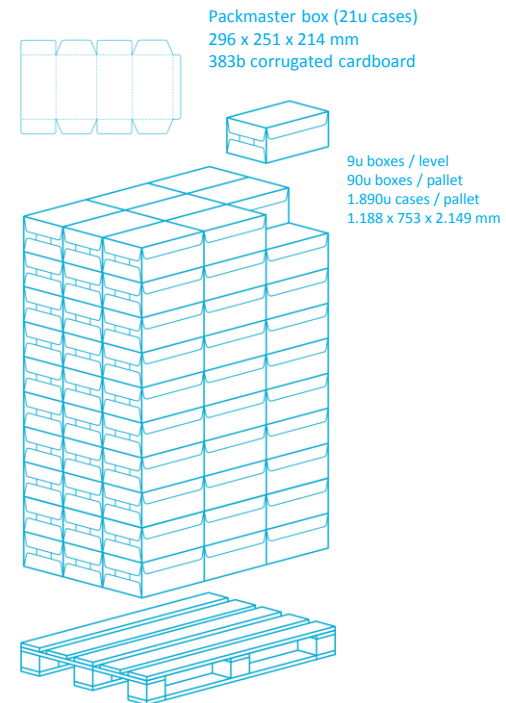
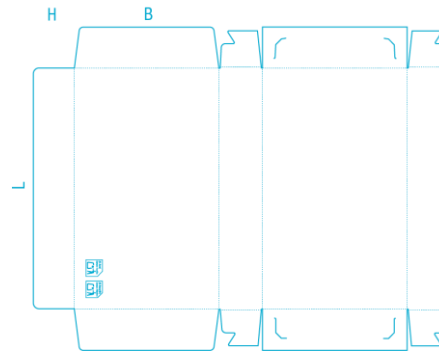
Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

Ecodesign proposal



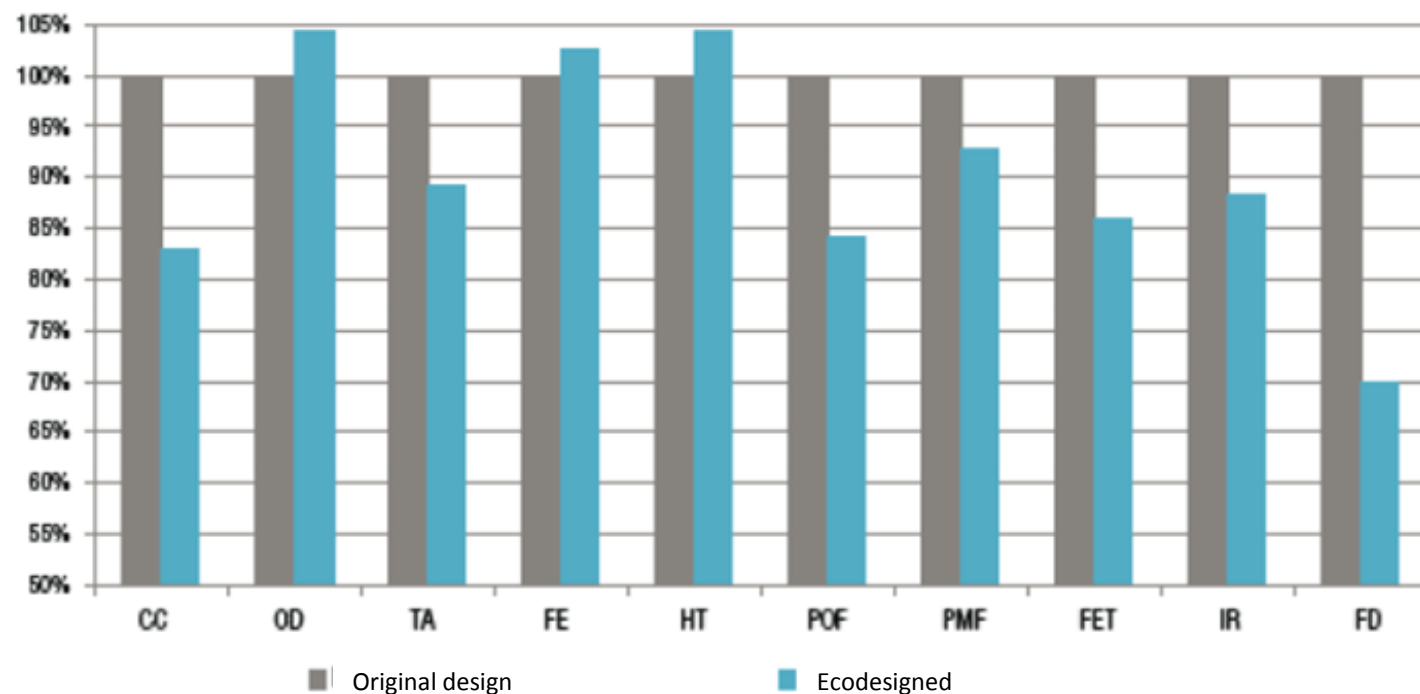
Case
200 (L) x 120 (B) x 34 (H) mm
25.5g paperboard (+1.9g cut losses)



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

Environmental impacts (ecodesign)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

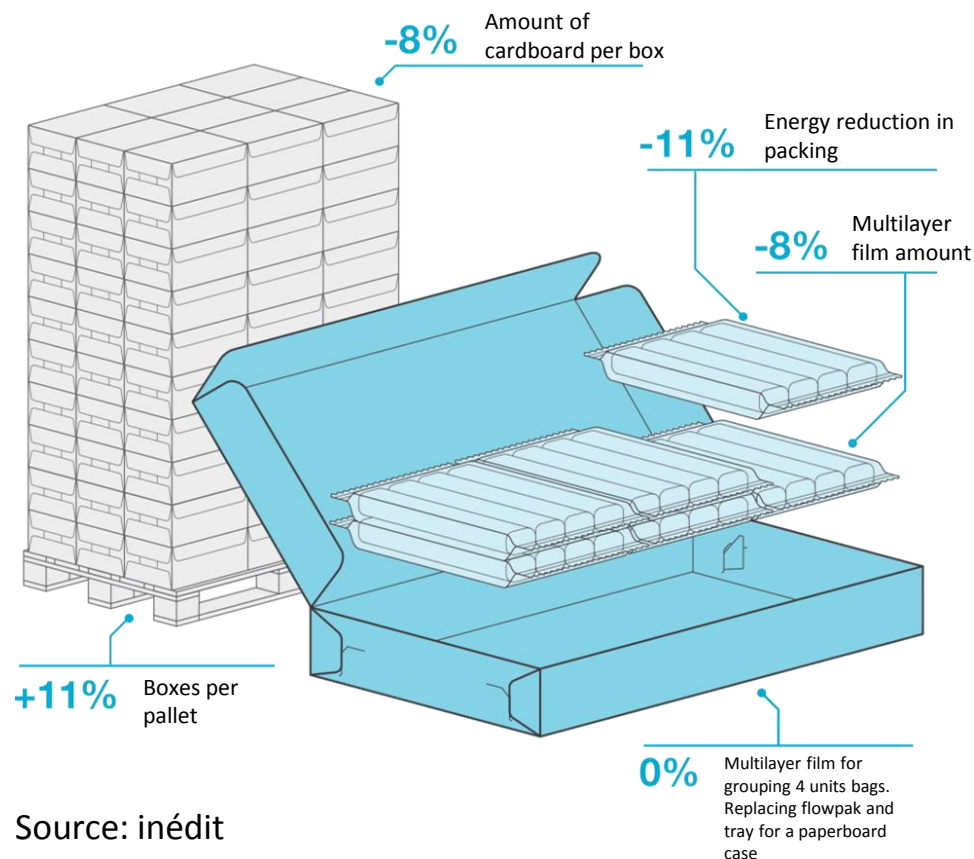
Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

Environmental benefit & conclusions

Environmental profile of the global packaging system

- 17% Climate change (CC) (Kg CO2 eq)
- +4% Ozone depletion (OD) (Kg CFC-11 eq)
- 11% Land-based acidification (TA) (Kg SO2 eq)
- 30% Depletion of fossil resources (FD)(Kg oil eq)



Source: inédit

Case Study nr. 2 · Perspective of the packer / filler

Case study Pescanova · From Packer

Ecodesign Team

Name	Email	Background	Responsibilities
Nicola Cerantola	ecologing@gmail.com		Coordinator

Report print date: 2018-10-11

Company logo

Product image

edTOOL Authorship

edtool.sostenipra.cat - edtool@sostenipra.cat

ation, production, packaging and marketing sea

ack packaging of 6 bags of 4 seafood sticks (surimi), selecting this packaging are technological innovation, and the pressure exerted by the customer of this gistics.

Stage 4 Distribution	Stage 5 End of life
Efficiency of transported load	Separability of components
3.0	3.0
Efficiency of occupied volume	Communication about end-of-life
3.0	1.0
Distances	Identifiability of materials
5.0	1.0
Energy efficiency of transportation modes	Service life
0.0	5.0
Environmental impact of transportation system	Average:
0.0	2.5
Environmental sustainability of logistics	Std. relative dev. :
5.0	76.6%
Efficient display	
4.0	
Appreciation of the product	
4.0	
Average:	
4.0	
Std. relative dev. :	
22.4%	

Deadline	Responsible
by a welding by	2018-11-30
Technical dpt	

Deadline	Responsible
2019-10-11	R&D dpt

Deadline	Responsible
2018-12-31	Technical dpt

Deadline	Responsible
2018-11-30	Technical dpt

Deadline	Responsible
2018-12-31	Communication dpt

Case Study nr. 3 · Perspective of the distributor



Case study

From perspective of the distributor (Eroski)





Source: inédit

Case Study nr. 3 · Perspective of the distributor

1.2. Ecodesign Project Description & Objectives

Please, describe the product/service to be ecodesigned and the objectives that are pursued by using edTOOL.

Edit

Name:	Case study Eroski · From Distributor
Description:	Eroski is a cooperative company dedicated to the distribution of goods and services of large consumption, through generalist multiformat establishments (supermarkets, hypermarkets and service stations) and specialists (perfumeries, sports, travel, leisure and culture).
Objectives:	The packaging object of ecodesign practical case is a carton box for 4 units of 120ml ice cream. The reasons that have favored the selection of this product are the predisposition of the manufacturer to provide data with reliability and accuracy and the opportunity to generate savings.
Report comment:	The packaging panel that Eroski has formed for ecodesign of the packaging is composed of representatives of the departments of: Environment, Own brand of food, Commercial, Marketing, Technical.
Company Logo:	
Product image:	

Source: inédit

Case Study nr. 3 · Perspective of the distributor

1.1. Ecodesign Team Manage project members

Please, add the team members participating in the ecodesign project. They may be staff from the company and/or external assessors. Please, make sure that the team includes, as much as possible, professionals with different roles in the company (including direction, design, logistics, marketing, accounting).

Add member

Name	Email	Background	Responsibilities
<ul style="list-style-type: none">● Ecodesign expert● Eroski team:<ul style="list-style-type: none">○ Environment○ Own brand of food○ Commercial○ Marketing○ Technical.			

Source: inédit

Case Study nr. 3 · Perspective of the distributor

1.3. Legal requisites Associated with the Ecodesign Project.

[Optional Step] Please, write down the most important legislation and regulations affecting the product/service.

Add requisite

2 records found

Name	Description	Attached file	
UNE-EN 13430:2005	Requirements for ...	(no file)	View Edit Delete
UNE-EN 13428:2005	on the Prevention	(no file)	View Edit Delete

It must be in accordance with the European legislation on the prevention of risks to the consumers' health and on environment protection and particularly relating to waste treatment. Packages in wood or plant material can be subjected to a phytosanitary check.

Source: inédit

Case Study nr. 3 · Perspective of the distributor

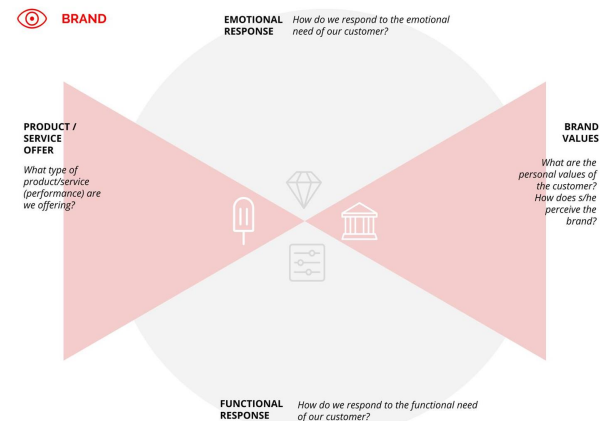
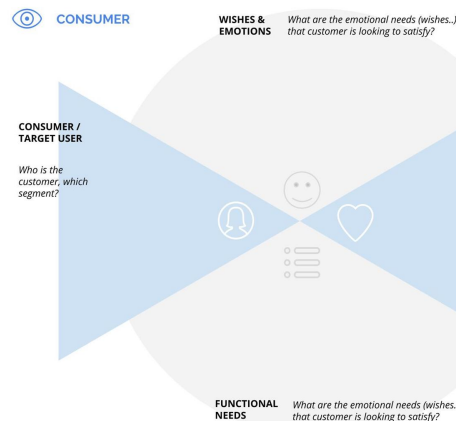
1.4. Market study Information on competing products/services.

[Optional Step] Please, describe the alternatives to your product already existing in the market.

←Back Edit

Description: A market study is useful when defining requirements; preparing budgets; choosing procurement method; planning and scheduling the procurement of goods, services and works; evaluation of bids/proposal, and sometimes to justify contract amendments.

Image:



Source: inédit

Case Study nr. 3 · Perspective of the distributor



CONSUMER

WISHES & EMOTIONS

What are the emotional needs (wishes..) that customer is looking to satisfy?

- Easy to handle
- Smooth feeling at touching
- Perception of quantity
- Perception of quality

CONSUMER / TARGET USER

Who is the customer, which segment?

- Store management
- Final User



PERSONAL VALUES

What are the personal values of the customer? How does s/he perceive the brand?

- Choosing quality
- Environmental protection



FUNCTIONAL NEEDS

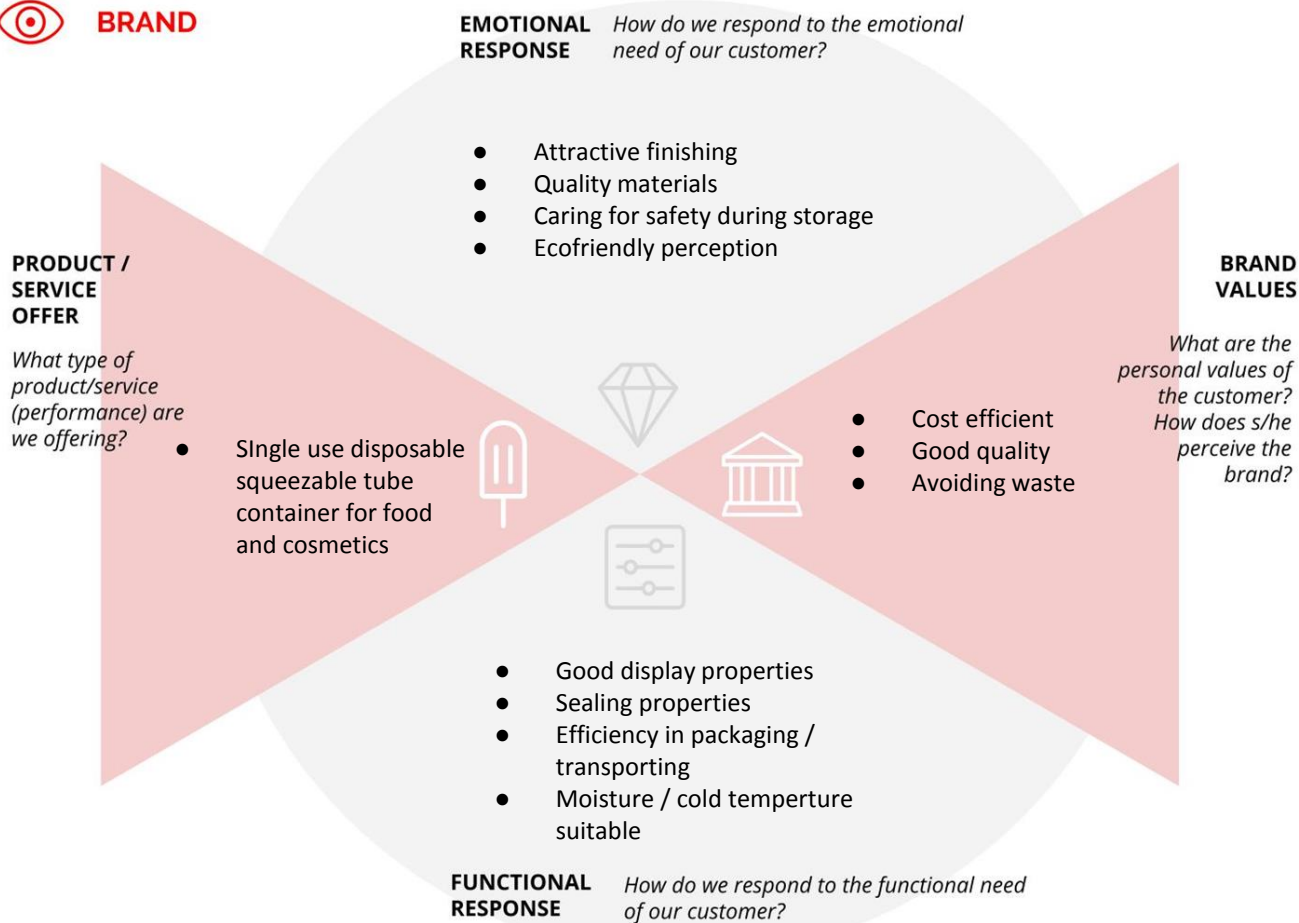
What are the emotional needs (wishes..) that customer is looking to satisfy?

- Easy to open / consume
- Resistant to moisture / cold
- Structural function
- Avoiding damaging
- Comfortable handling

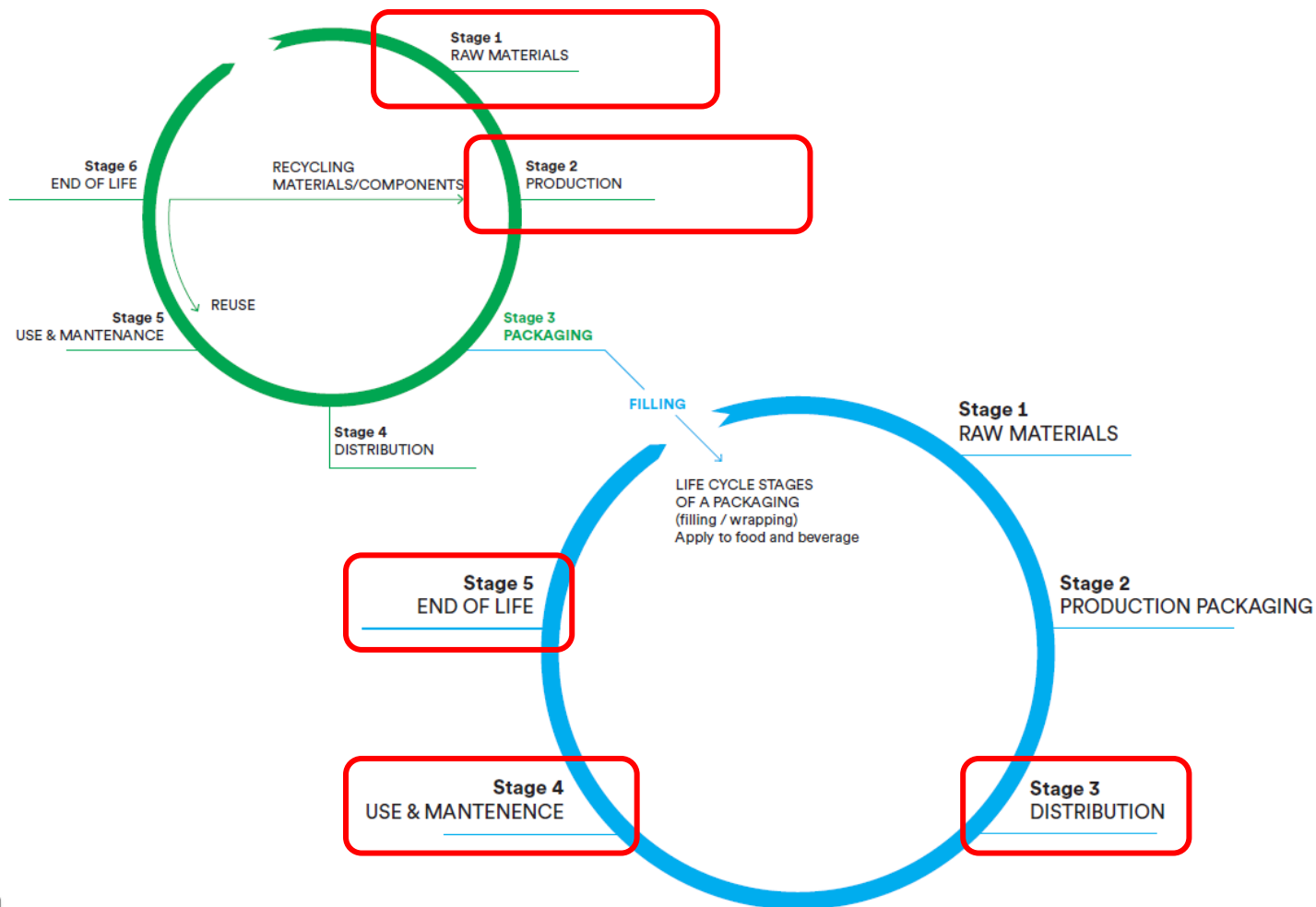
Case Study nr. 3 · Perspective of the distributor



BRAND

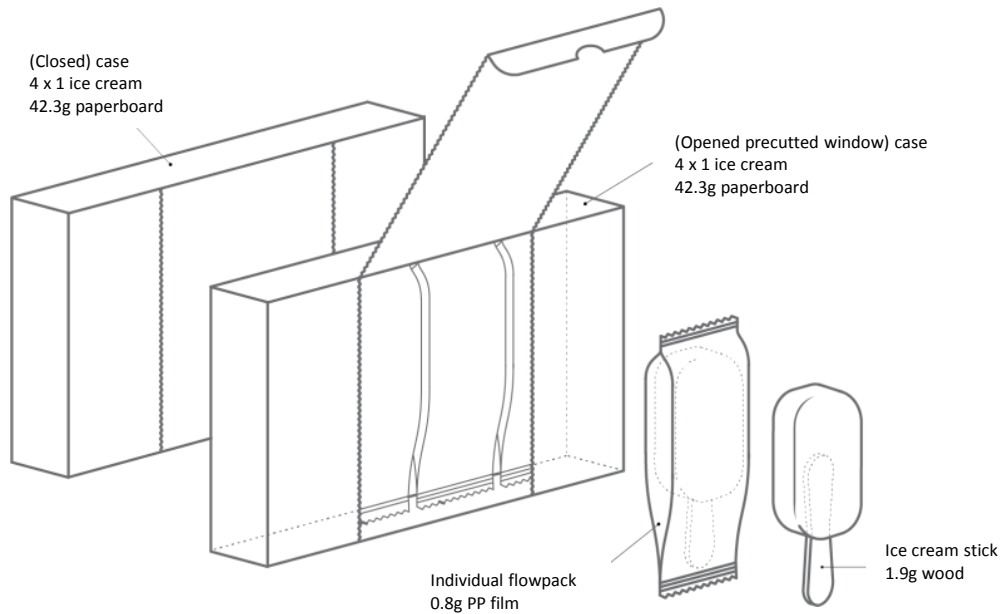


Case Study nr. 3 · Perspective of the distributor

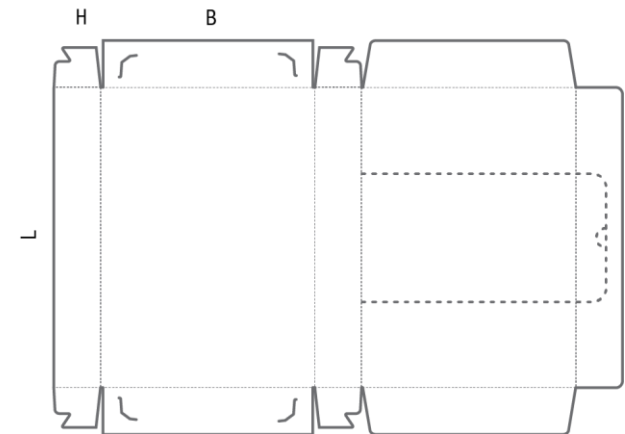


Case Study nr. 3 · Perspective of the distributor

Current features



Case 4 x 1 ice cream
231 (L) x 165 (B) x 36 (H) mm
42.3g paperboard (+3.7g cut losses)



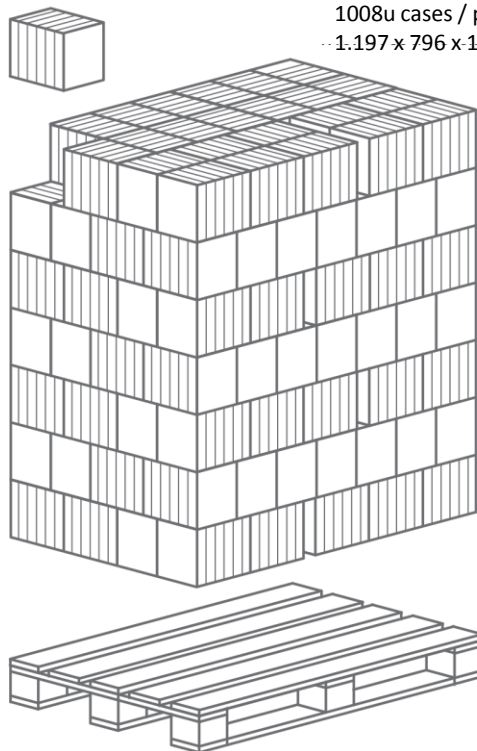
Source: inédit

Case Study nr. 3 · Perspective of the distributor

Current features

6u pack case 4 x 1
17g LDPE film
225 x 169 x 235 mm

24u packs / level
168u packs / pallet
1008u cases / pallet
1.197 x 796 x 1.645 mm



Source: inédit

Case Study nr. 3 · Perspective of the distributor

1.5 Customize Lifecycle stages

You can customize the lifecycle stages of the project. The minimum number of stages allowed is: **3**.

Add lifecycle stage

Add custom lifecycle stage

Manage custom lifecycle stages

Lifecycle stage

Production

Position

6

Add

Position	Lifecycle stage	
1	Raw Materials	↓ ×
2	Packaging	↑ ↓ ×
3	Distribution	↑ ↓ ×
4	Use & Maintenance	↑ ↓ ×
5	End of life	↑ ×

Case Study nr. 3 · Perspective of the distributor

1.6 Customize criteria for Environmental Assessment

Stage 1 Raw Materials	Stage 2 Packaging	Stage 3 Distribution	Stage 4 Use & Maintenance	Stage 5 End of life
Diversity of materials ⓘ ✕	Packaging to Product volume ratio ⓘ ✕	Efficiency of transported load ⓘ ✕	Environmental communication for the use ⓘ ✕	Separability of components ⓘ ✕
Amount of materials ⓘ ✕	Packaging to Product weight ratio ⓘ ✕	Efficiency of occupied volume ⓘ ✕	Service life ⓘ ✕	Communication about end-of-life ⓘ ✕
Ecological rucksack of materials ⓘ ✕	Filling technology ⓘ ✕	Distances ⓘ ✕	Storage potential ⓘ ✕	Identifiability of materials ⓘ ✕
Recycled content ⓘ ✕	Standardization of packaging sizes ⓘ ✕	Environmental impact of transportation system ⓘ ✕	Forecasted use behavior ⓘ ✕	Efficiency of occupied volume ⓘ ✕
Biodegradability ⓘ ✕		Efficient display ⓘ ✕	Reliability ⓘ ✕	
Water efficiency ⓘ ✕		Appreciation of the product ⓘ ✕		
Local Production ⓘ ✕		Environmental sustainability of logistics ⓘ ✕		

Case Study nr. 3 · Perspective of the distributor

2.1. Environmental Assessment

Please, assess each lifecycle criterion (from 1 to 5) using the given (scale▼)

Make sure to use integer values and leave a '0' if you do not have the information to answer. Finally, click 'Save' when you are finished.

The results of the assessment will be made available when the coordinator changes the state of the project to **3-Strategy Selection**.

Stage 1 Raw Materials	Stage 2 Packaging	Stage 3 Distribution	Stage 4 Use & Maintenance	Stage 5 End of life
Diversity of materials ⓘ <input type="text" value="4"/>	Standardization of packaging sizes ⓘ <input type="text" value="4"/>	Environmental sustainability of logistics ⓘ <input type="text" value="5"/>	Reliability ⓘ <input type="text" value="4"/>	Separability of components ⓘ <input type="text" value="3"/>
Amount of materials ⓘ <input type="text" value="4"/>	Packaging to Product volume ratio ⓘ <input type="text" value="1"/>	Efficiency of transported load ⓘ <input type="text" value="2"/>	Environmental communication for the use ⓘ <input type="text" value="3"/>	Communication about end-of-life ⓘ <input type="text" value="2"/>
Ecological rucksack of materials ⓘ <input type="text" value="4"/>	Packaging to Product weight ratio ⓘ <input type="text" value="1"/>	Efficiency of occupied volume ⓘ <input type="text" value="3"/>	Service life ⓘ <input type="text" value="3"/>	Identifiability of materials ⓘ <input type="text" value="1"/>
Recycled content ⓘ <input type="text" value="5"/>	Filling technology ⓘ <input type="text" value="3"/>	Distances ⓘ <input type="text" value="5"/>	Storage potential ⓘ <input type="text" value="3"/>	Efficiency of occupied volume ⓘ <input type="text" value="2"/>
Biodegradability ⓘ <input type="text" value="3"/>		Environmental impact of transportation system ⓘ <input type="text" value="5"/>	Forecasted use behavior ⓘ <input type="text" value="4"/>	
Water efficiency ⓘ <input type="text" value="3"/>		Efficient display ⓘ <input type="text" value="3"/>		
Local Production ⓘ <input type="text" value="5"/>		Appreciation of the product ⓘ <input type="text" value="3"/>		

Case Study nr. 3 · Perspective of the distributor

Stage 1 Raw Materials

Diversity of materials	4
Amount of materials	4
Ecological rucksack of materials	4
Recycled content	5
Biodegradability	3
Water efficiency	3
Local Production	5

Materials

- Recycled material for the container.
- Minimum amount of packaging material.
- Certified materials.
- Low migration inks.
- Vegetable inks.
- Container materials with lower environmental impact.

Case Study nr. 3 · Perspective of the distributor

Stage 2 Packaging

Standardization of packaging sizes ⓘ

4

Packaging to Product volume ratio ⓘ

1

Packaging to Product weight ratio ⓘ

1

Filling technology ⓘ

3

Packaging (Filling / Packing)

- Minimum product packaging operations.
- Optimal amount of material in the individual bagging of the product.

Case Study nr. 3 · Perspective of the distributor

Stage 3
Distribution

Environmental sustainability of logistics ⓘ
5

Efficiency of transported load ⓘ
2

Efficiency of occupied volume ⓘ
3

Distances ⓘ
5

Environmental impact of transportation system ⓘ
5

Efficient display ⓘ
3

Appreciation of the product ⓘ
3

Distribution

- Packaging dimensions adjusted to the standards international distribution.
- Minimum amount of packaging material.
- Energy efficient distribution vehicles and / or with renewable fuels.

Case Study nr. 3 · Perspective of the distributor

Stage 4 Use & Maintenance

Reliability	4
Environmental communication for the use	3
Service life	3
Storage potential	3
Forecasted use behavior	4

Use

- Smaller packaging format, for sale lines more narrow.
- Removal of the easy-open container.
- Package dimensions adapted to the measures of the domestic freezers.
- Improvement of the performance of the container against moisture.

Case Study nr. 3 · Perspective of the distributor

Stage 5 End of life

Separability of components ⓘ

3

Communication about end-of-life ⓘ

2

Identifiability of materials ⓘ

1

Efficiency of occupied volume ⓘ

2

End of life

- Use of badges to enhance the selective collection of packaging.
- Easily separable packaging materials.

Case Study nr. 3 · Perspective of the distributor

Main environmental aspects

Materials

- Recycled material for the container.
- Minimum amount of packaging material.
- Certified materials.
- Low migration inks.
- Vegetable inks.
- Container materials with lower environmental impact.

Packing

- Minimum product packaging operations.
- Optimal amount of material in the individual bagging of the product.

Distribution

- Packaging dimensions adjusted to the standards international distribution.
- Minimum amount of packaging material.
- Energy efficient distribution vehicles and / or with renewable fuels.

Use

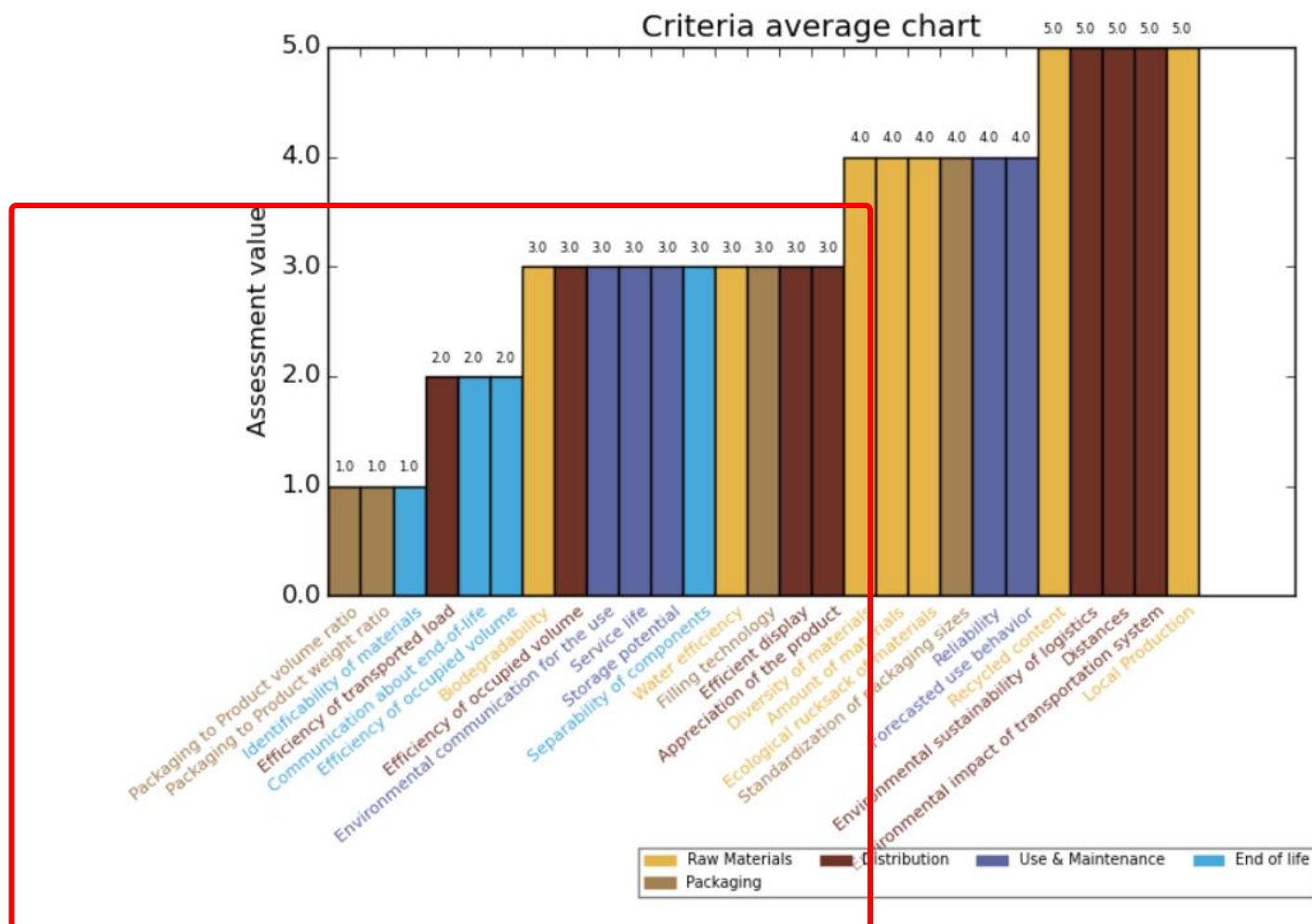
- Smaller packaging format, for sale lines more narrow.
- Removal of the easy-open container.
- Package dimensions adapted to the measures of the domestic freezers.
- Improvement of the performance of the container against moisture.

End of life

- Use of badges to enhance the selective collection of container.
- Easily separable packaging materials.

Source: inédit

Case Study nr. 3 · Perspective of the distributor



Case Study nr. 3 · Perspective of the distributor

Prioritisation and LCA

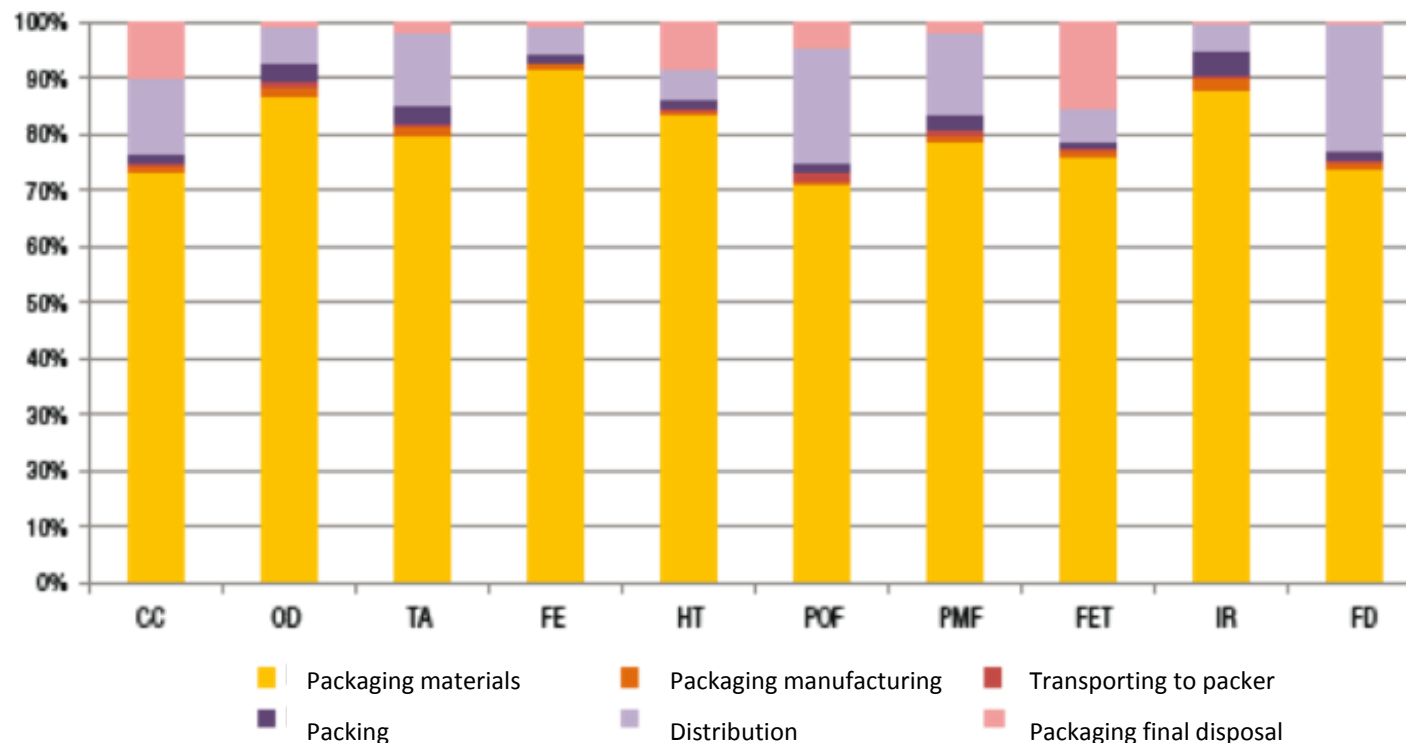
The aspects that the Eroski packaging team has considered as priorities are:

- Packaging materials with a lower environmental impact.
- Energy efficient distribution vehicles and / or with renewable fuels.
- Certified materials.
- Recycled material for the container.
- Optimal amount of material in the individual bagging of the product.

The environmental inventory of the packaging has been analyzed under the perspective of life cycle analysis (according to ISO 14040: 2006, by means of the analysis software environmental SimaPro 8.2.0.0. and applying the ReCiPe Method V1.12)

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Environmental impacts (current design)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

Source: inédit

Case Study nr. 3 · Perspective of the distributor

Evaluating the LCA

At a global level, the stage of the life cycle that presents a greater contribution to the environmental profile for the categories of impact considered are the packaging materials and, in minor measure the distribution and the final management of container.

Specifically the critical points for the ice cream box are:

- Paperboard (box).
- PP film (ice cream sachets).
- LDPE film applied for distribution (final product).
- Final management of cartonboard waste (box).

Case Study nr. 3 · Perspective of the distributor

3.1. Selection of ecodesign strategies

Based on the previous environmental assessment, edTOOL suggests a series of ecodesign strategies that could be applied to your product/service. These strategies correspond to those 2 life cycle stages with worse environmental performance. Please, feel free to add other predefined strategies from the list under the **Add Strategy** label, or define new strategies under the **New Custom strategy** label. For your guidance, please, note that the User Guide includes a list of potential ecodesign strategies and a brief description of each of them.

Once the list is ready, please check if the strategies are appropriate for your product/service and if they have already been completed/applied. Only those strategies that are marked as *Appropriate* and that are not marked as *Completed* will be considered for further evaluation.

Add strategy

New custom strategy

Lifecycle stage:

Raw Materials ▼

Strategy:

Reduce material input by des ▼

This strategy aims to reduce the use of materials to the minimum, always considering the requirements of the product (strenght, durability, service life, etc.).

Add

Case Study nr. 3 · Perspective of the distributor

Strategy	Appropriate	Completed	Delete
Lifecycle stage: Packaging			
Dimension the packaging according to standard transportation measures ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Optimize the relationship between the volume of the packaging and the product ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Optimize the relationship between the weight of the packaging and the product ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Reduce amount of waste from packaging ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Prevent shipping damage ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Label packaging materials (including instructions for disposal) ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Lifecycle stage: Distribution			
Optimize the load transported in the vehicle ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Lifecycle stage: Use & Maintenance			
Ensure high reliability of the product ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Lifecycle stage: End of life			
Ensure easily visible access to connections for disassembly ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Make possible separation of materials for recycling and avoid inseparable composite materials ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Ensure simple extraction of harmful and valuable substances ⓘ	<input type="checkbox"/>	<input type="checkbox"/>	✗
Take into account end-user's opportunities for disposal and provide for instructions ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗
Allow an easy identification of materials ⓘ	<input checked="" type="checkbox"/>	<input type="checkbox"/>	✗

Case Study nr. 3 · Perspective of the distributor

3.2. Prioritization of ecodesign strategies

Description	Weight of each aspect	Social	Economic	Technical	Avg.	Action plan
Lifecycle stage: Packaging						
Dimension the packaging according to standard transportation measures ⓘ		2	3	3	2.60	<input type="checkbox"/>
Optimize the relationship between the weight of the packaging and the product ⓘ		3	5	5	4.20	<input checked="" type="checkbox"/>
Prevent shipping damage ⓘ		5	3	3	3.80	<input type="checkbox"/>
Label packaging materials (including instructions for disposal) ⓘ		5	5	5	5.00	<input checked="" type="checkbox"/>
Lifecycle stage: Distribution						
Optimize the load transported in the vehicle ⓘ		0	5	5	3.00	<input checked="" type="checkbox"/>
Lifecycle stage: End of life						
Take into account end-user's opportunities for disposal and provide for instructions ⓘ		0	4	5	2.80	<input type="checkbox"/>
Allow an easy identification of materials ⓘ		0	4	4	2.40	<input type="checkbox"/>

Case Study nr. 3 · Perspective of the distributor

Ecodesign ideas

Reduce the materiality of the system

- Replace the case with a bag-shaped container.
- Fit the individual bag to the chocolate ice cream without covering the stick.
- Change the geometry of the chocolate ice cream keeping the unit quantity (120ml).
- Increase the number of cases per grouping unit.

Select sustainable solutions

- Apply cardboard with chain of custody certificate.
- Apply cardboard with recycled fiber.
- Define a protocol of green procurement of suppliers (materials, manufacturers and distribution).

Source: inédit

Case Study nr. 3 · Perspective of the distributor

Ecodesign ideas

Sustainable communication

- Identify the packaging materials (cartonboard and PP film).
- Apply environmental information about the packaging disposal.

Case Study nr. 3 · Perspective of the distributor

Action plan

Strategies

Actions

Lifecycle stage: **Packaging**

Optimize the relationship between the weight of the packaging and the product

Action

Deadline

Responsible

Change the arrangement of the chocolate ice cream (2 layers of 2 ice creams).

2018-11-22

Technical dpt

Label packaging materials (including instructions for disposal)

Action

Deadline

Responsible

Increase the visibility of the selective collection symbols.

2018-11-30

Technical dpt

Lifecycle stage: **Distribution**

Optimize the load transported in the vehicle

Action

Deadline

Responsible

Exploring further reduction in materials

2019-10-31

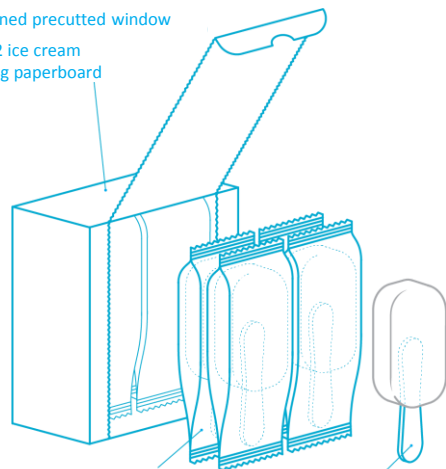
R&D Dpt

Case Study nr. 3 · Perspective of the distributor

Ecodesign proposal

Opened precutted window

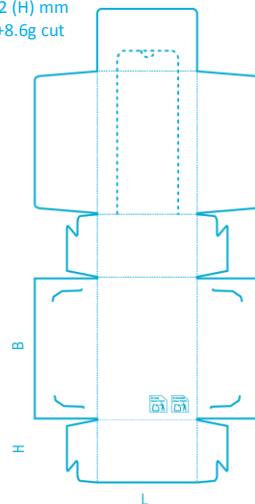
2 x 2 ice cream
41.4g paperboard



Individual flowpack
0.8g PP film

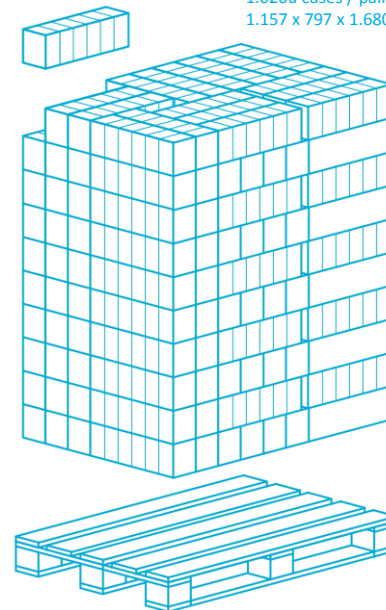
Ice cream stick
1.9g wood

Case 2 x2 ice cream
115 (L) x 165 (B) x 72 (H) mm
41.4g paperboard (+8.6g cut losses)



6u pack case 2 x 2
16g LDPE film
435g x 118 x 168

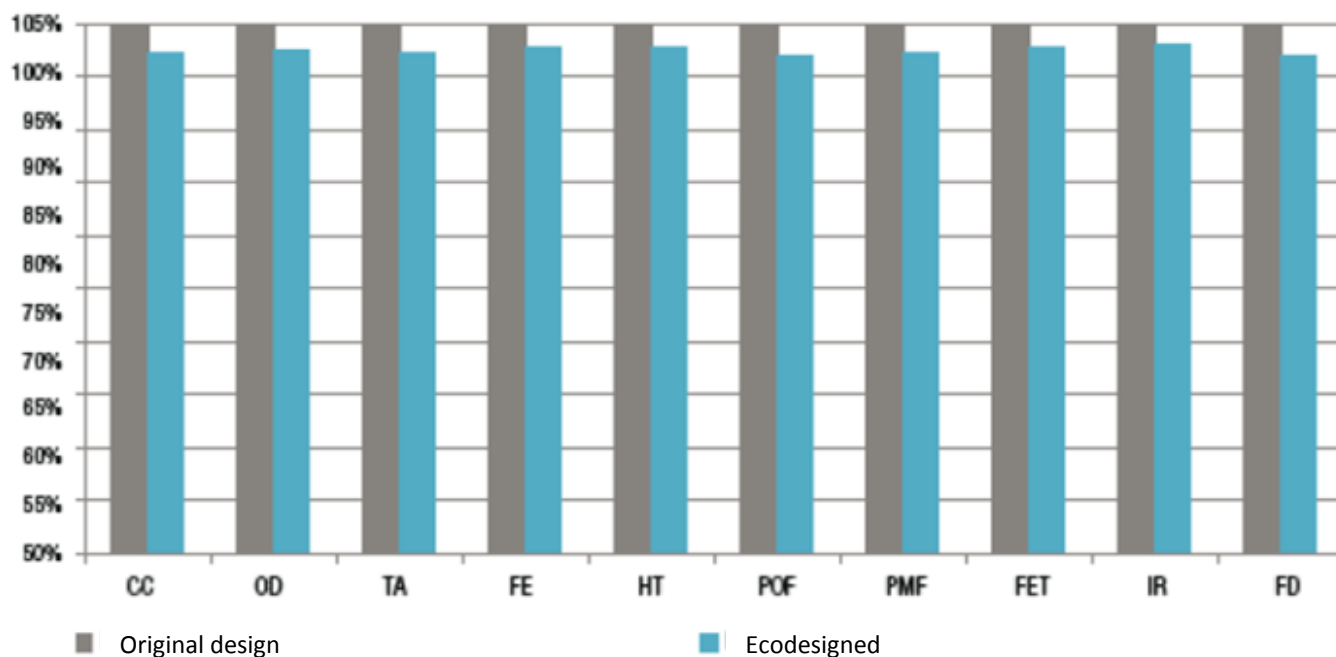
17u packs / level
170u packs / pallet
1.020u cases / pallet
1.157 x 797 x 1.680 mm



Source: inédit

Case Study nr. 3 · Perspective of the distributor

Environmental impacts (ecodesign)



Climate change (CC), Ozone depletion (OD), Land-based acidification (TA), Fresh water eutrophication (FE), Human toxicity (HT), Formation of photochemical oxidants (POF), Particle formation (PMF), Fresh water ecotoxicity (FET), Ionizing radiation (IR), Depletion of fossil resources (FD)

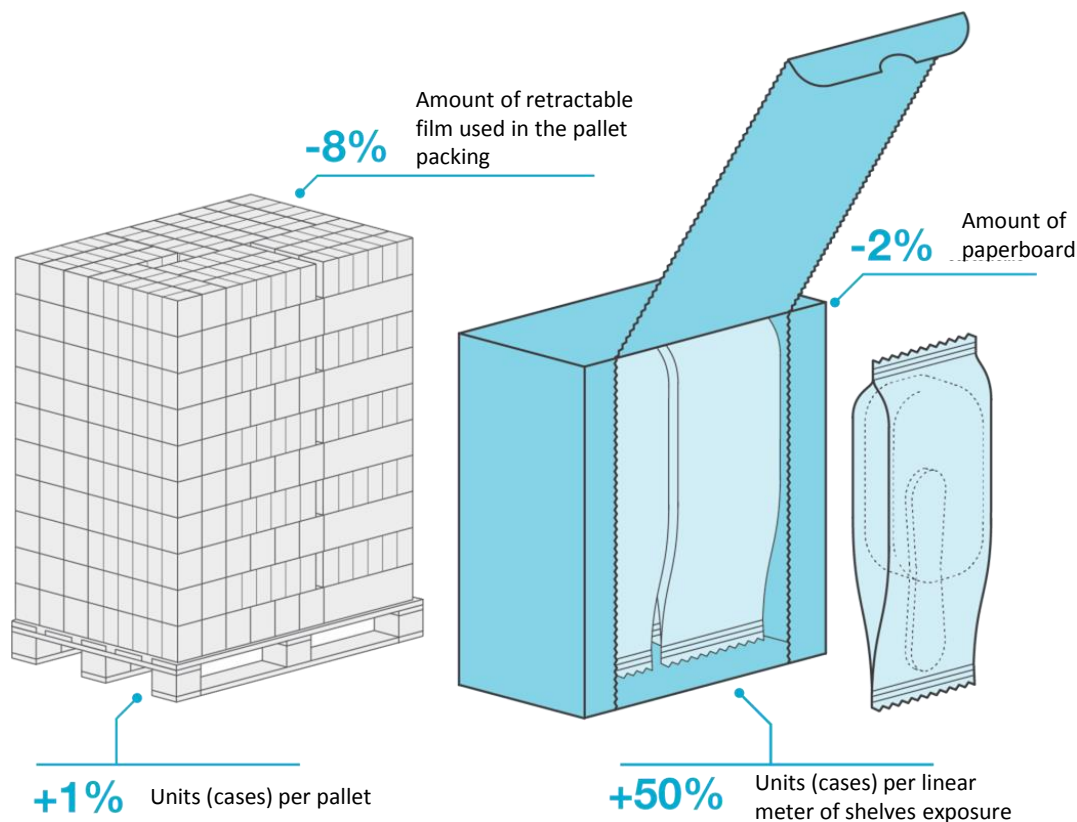
Source: inédit

Case Study nr. 3 · Perspective of the distributor

Environmental benefit & conclusions

Environmental profile of the global packaging system

- 3% Climate change (CC) (Kg CO2 eq)
- +2% Ozone depletion (OD) (Kg CFC-11 eq)
- 3% Land-based acidification (TA) (Kg SO2 eq)
- 3% Depletion of fossil resources (FD)(Kg oil eq)



Source: inédit

Case Study nr. 3 · Perspective of the distributor

Projet cofinancé par le Fonds Européen de Développement Régional (FEDER) - Projet cofinancé par le Fonds Européen de Développement Régional (FEDER)

Case study Eroski · From Distributor

Ecodesign Team

Name	Email	Background	Responsibilities
Nicola Cerantola	ecologing@gmail.com		Coordinator

Report print date: 2018-10-11

Company logo

Product image

edTOOL Authorship

edtool.sostenipra.cat · edtool@sostenipra.cat

tribution of goods and services of large consumption, through hypermarkets and service stations) and specialists (perfumeries, a carton box for 4 units of 120ml ice cream. The reasons that disposition of the manufacturer to provide data with reliability and

Stage 3 Button	Stage 4 Use & Maintenance	Stage 5 End of life
of 6 load	Environmental communication for the use	Separability of components
2.0	3.0	3.0
of occupied	Service life	Communication about end-of-life
3.0	3.0	2.0
3.0	Storage potential	Identifiability of materials
3.0	3.0	1.0
Initial impact	Forecasted use behavior	Efficiency of occupied volume
3.0	4.0	2.0
3.0	Reliability	4.0
3.0	Average:	Average:
3.0	2.0	2.0
3.0	3.4	Std. relative dev. :
3.0	Std. relative dev. :	40.8%
3.0	16.1%	

Deadline	Responsible
2018-11-22	Technical dpt

Deadline	Responsible
2018-11-30	Technical dpt

Deadline	Responsible
2019-10-31	R&D Dpt

ram

saving

of life

Source: inèdit

More examples

Redesigning shape



- More stability & resistance during return operations
- Lighter
 - 0,33l +6,7%
 - 0,5l en un 1,3%.

Source: Ecoembes - MINERAQUA

More examples

Eliminating elements by design



The original box needed to be closed by tape, the new design is based on self-building shape with no other elements than cardboard > easier to recycle due to mono-materiality

Source: Ecoembes - Formatges de Valencia

Resuming, Ecodesign is..

This methodology promotes the collaborative work of all the agents involved in the packaging value chain, for the reduction of costs, materials and energies used in the production process.



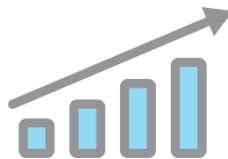
Source: inédit

Resuming, Ecodesign allows..

The application of the ecodesign methodology of packaging and packaging will contribute in:



Brand reputation gains



Improved risk management



More ecoefficiency



Fostering innovation



Improved value proposition



Better relationship with stakeholder

Source: inédit

Coffee paper cup ecodesign

The starting point is a coffee glass made of bleached solid cardboard with a finished polyethylene plastic (PE). This glass is served 21% of the time with a plastic lid polystyrene (PS).

As a result of the ecodesign project, the glass incorporates 10% recycled cardboard of industrial origin without mineral oils (A higher percentage is not applied due to technical manufacturing reasons) and has an internal coating of biopolyethylene (BioPE).

As for the lid, it is prescribed to serve the glass without it provided that may be possible.

In addition to improving the sustainability of the coffee cup, the most Natural glass with recycled material and without bleach fits perfectly with the healthy brands of the company; keeping your recyclability

Coffee paper cup ecodesign



Environmental improvement



10%

**recycled
cardboard fibers**

42 tonnes virgin
cardboard saved



100%

internal cover BioPE

3 tonnes not
renewable sourced
PE savings yearly



-10%

global Carbon Footprint

12 CO2 tonnes / year saved
(33% recycled fibers)
if reduced lid from 21% to 10% savings
would be 21 tonnes CO2/year

Examples of existent solutions



THEY ARE ECO-FRIENDLY
AND CAN BE DISPOSED IN
SELECTED INDUSTRIAL
COMPOST FACILITIES.



Examples of existent solutions



OUR PRODUCTS ARE MADE OF PLANTS,
NOT PLASTIC! :)

←

-  **NATURAL...**
...THEY ARE MADE OF PAPER AND PLANT BASED PLA!
-  **HYGIENIC AND TASTY...**
...THEY COME WITHOUT UNHEALTHY CHEMICALS :)
-  **BIODEGRADABLE,**
AS THEY HAVE PLA INSTEAD OF PLASTIC PE COATING!
-  **CERTIFIED COMPOSTABLE...**
...WE HAVE THE SEAL OF APPROVAL OF DIN EN 13432 AND BPI!
-  **ECO-FRIENDLY...**
...WE DON'T USE PLASTIC AND THEREFORE SPARE MORE THAN 60% CO2 EMISSIONS!

completely compostable

The advertisement features a dark wood background with coffee beans scattered around. In the top left, there is a stack of white disposable cups. In the center right, a single white cup is shown at an angle. The text is arranged in a list format on the left side, with a curved arrow pointing from the headline to the first item. The bottom right of the cup has a small logo and the text 'completely compostable'.

Examples of existent solutions



SWIM-H2020 SM

For further information

Website

www.swim-h2020.eu

E: info@swim-h2020.eu

LinkedIn Page

[SWIM-H2020 SM LinkedIn](#)

Facebook Page

[SWIM-H2020 SM Facebook](#)

SWIM and Horizon 2020 Support Mechanism

Working for a Sustainable Mediterranean, Caring for our Future

Thank you for your attention.

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