



MAC & NWWAC Workshop on Marine Plastics and the Seafood Supply Chain



SONAE



Sonae is a multinational company managing a diversified portfolio of businesses in retail, financial services, technology, shopping malls and telecommunications

SONAE MC

Sonae MC is the food retail market leader in Portugal working on several business segments (hyper and supermarkets, health and well being, cafeterias/restaurants, healthy food, stationery and dogs/cats products & services)

CONTINENTE

CONTINENTE
modelo

CONTINENTE
bom dia



well's

Dr. Well's

·B·A·G·G·A·

go natural

note!

ZU

Maxmat

arenal



Plastics are a problem in on the political and social agenda for which Sonae wants to do a constructive and decisive contribution!



- Light, durable and cheap
- Good to preserve food
- Mostly Recyclable
- Doesn't use so many natural resources
- It is often combined with other products making recycling difficult
- The processes and capabilities of collection, sorting and recycling are incipient
- It often ends in oceans or landfills (light, durable, cheap)
- Intoxicates ecosystems and consequently human being

To lead the combat to the unnecessary or problematic plastic





Because it's our obligation, and because we have a unique ability to influence upstream and downstream

Influence Suppliers

- At design level and also the materials to be used (considering technical constraints and installed capabilities)
- Mainly in Own Label and Store packaging
- Promoting innovation in the packaging sector
- Spread good practices across the industry

Influence Consumers

- Ability to influence behaviours
- Information on the use of packaging at its end of life
- Pushing for packaging reuse and minimalism of packaging
- Positive contamination of the sectors involved and of society in general

plástico responsável

CONTINENTE

(responsible plastic)

Act

Be a retail reference
Have ambitious metrics and monitor achievements
Invest in eco-design

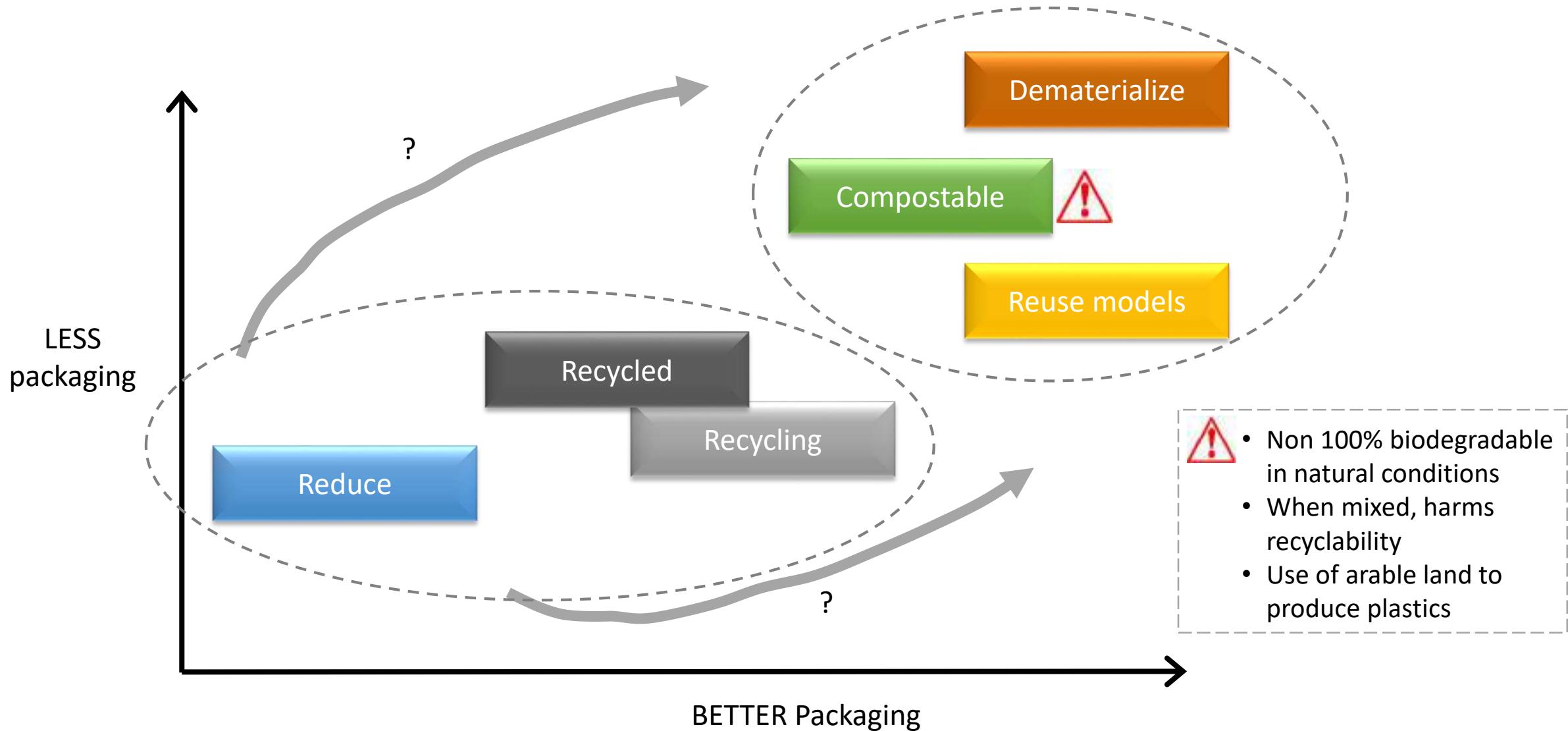
Mobilize

Mobilize suppliers and the entire plastic industry (from producers to recyclers)
Promote collaborative projects of innovation and sustainability

Influence

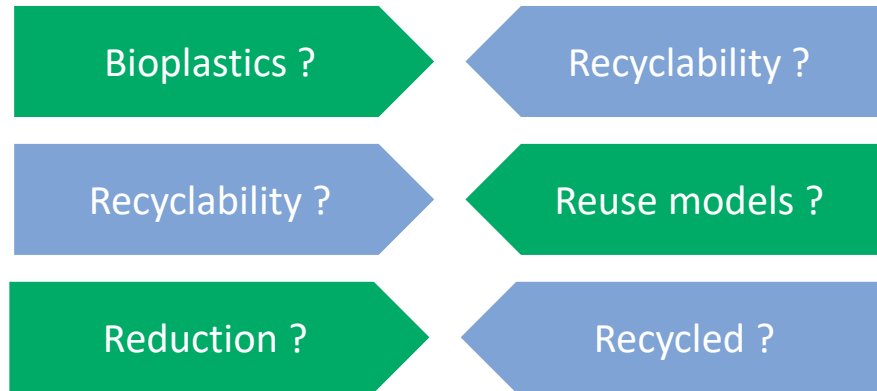
Communicate, raise awareness and inform
Encourage reuse
Support consumer in the treatment of end-of-life packaging

The main questions are: Where to invest? Which are the best solutions? Sometimes there are contradictions...



...and because still are a huge **uncertainty** about the best pathways to solve this problem, it's necessary **collaborative approaches** to break barriers and move to a more **"circular" world** (priorities for Sonae: reuse and recycle)

UNCERTAINTY



NEW PLASTICS ECONOMY GLOBAL COMMITMENT (for 2025)

1. Take action to eliminate problematic or unnecessary plastic packaging
2. Take action to move from single-use towards **reuse models** where relevant and possible
3. 100% of plastic packaging to be **reusable, recyclable**, or compost.
4. Set an ambitious recycled content target for all plastic packaging

Priorities for Sonae MC

RECYCLE



Assessment: all the packaging of own-brand products (40.000)



Recyclability matrix made in cooperation with universities and green dot PT



Continente Yogurt: change of the packaging influencing the industry

REUSE

Returnable boxes for F&V across entire supply chain



Online operation: collection, refund and routing for recycling of the plastic bags




Reusable bags for F&V and Bread





Sonae MC is balancing short-term initiatives with more structural and long-term actions



Tactical





Elimination of unnecessary packaging




Use 100% **recycled** plastic collected from the stores...
...promoting the reusability




Elimination of the Single Use Plastics




Reduce plastic (size or thickness)



Strategic



YPACK Project




- H2020 project dev. innovative food packaging
- + shelf-life & 100% biodegradable and/or compostable
- Made by food waste or inedible food

<http://www.ypack.eu/>

Communication Plan

- Information, education, cases
- Responsible use of the plastic
- <http://plasticoresponsavel.continente.pt/>




Collaborative and cross-industry workgroup for Packaging

- 1st deliverable: good practices guide for recycling



Plastic Pact for Portugal

- Evaluation of a potential Plastic Pact for Portugal, with common goals





High Performance Polyhydroxyalkanoates Based Packaging to Minimise Food Waste

<https://www.ypack.eu/>



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773872.

YPACK will experiment new biodegradable packaging solutions to increase shelf-life of critical Sonae products



https://www.youtube.com/watch?time_continue=140&v=WAhwzImb7E8

Polyhydroxyalkanoates are natural biopolymers that are considered bioplastics and biodegradable

Polyhydroxyalkanoates family

Polyhydroxyalkanoates or **PHAs** are **polyesters produced in nature** by numerous microorganisms, including through **bacterial fermentation** of sugar or lipids. When produced by bacteria they serve as both a source of energy and as a carbon store.

More than 150 different monomers can be combined within this family to give materials with extremely different properties.

These plastics are biodegradable and are used in the **production of bioplastics**.



The technical concepts will involve active and passive barriers that increase shelf-life and are biodegradable

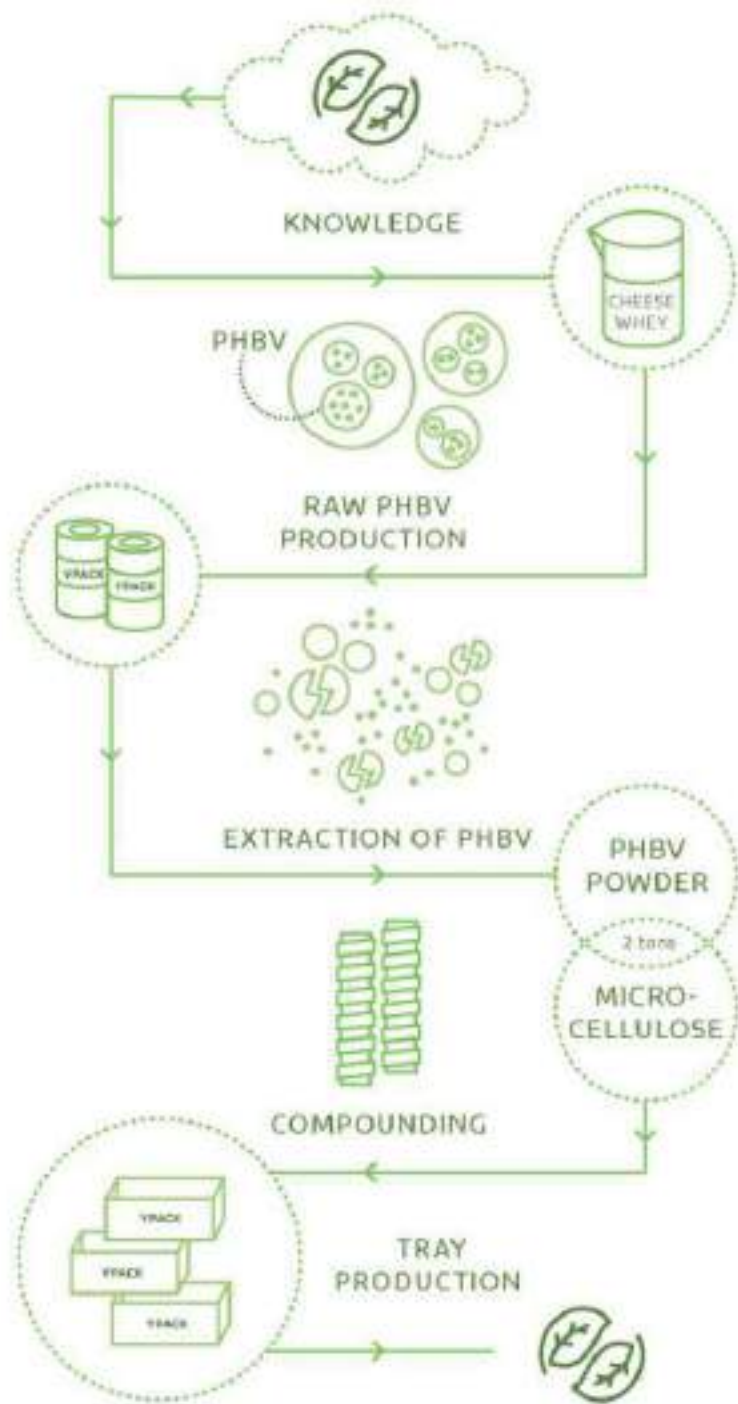
How cheese whey becomes PHBV

The raw material is cheese whey, a by-product of the food industry.

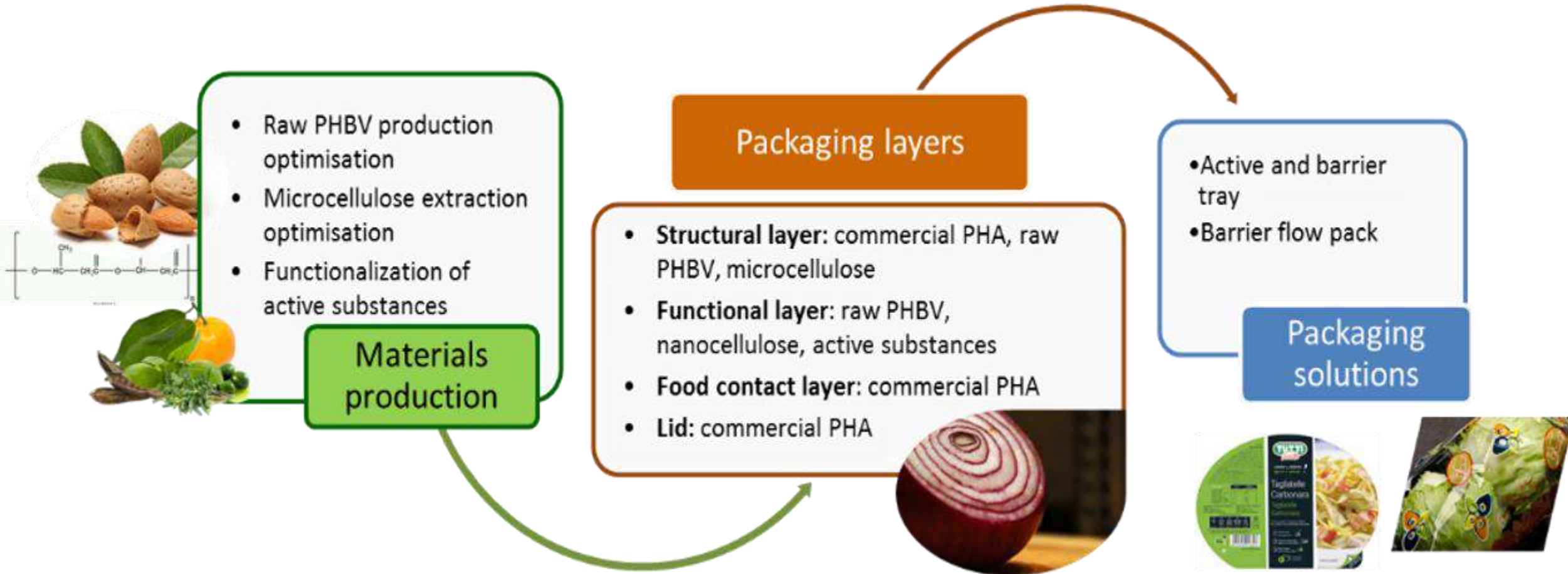
1. In the first step of production, **cheese whey is converted into short-chain fatty acids** by anaerobic microorganisms.
2. Then, **microorganisms** able to **accumulate PHBV** are selected and grown by ensuring a specific environment under aerobic conditions.
3. Finally, the microorganisms are overfed with the fatty acids. This leads to a **PHBV accumulation process**. The PHBV acts as the fat storage of the cells and this 'fat' is then **used to make bioplastic**.

As the production of PHBV is biological, not chemical, the microbes need to be fed around the clock. If the microbes are deprived of nutrients, they will use the formed PHBV as an energy source. The output of the process is raw PHBV, a paste of microbial cells filled with PHBV granules.

Active barriers: natural antioxidants and antibacterials



The technical concepts will involve active and passive barriers that increase shelf-life and are biodegradable



YPACK will scale up production and commercially validate the Polyhydroxyalkanoate (PHA) packaging until 2020

Biodegradable

Home Compostable

X

Trays and Films (flow pack)



X

↑ Shelf-life

Use food by-products

For meat, fruits & vegetables and fresh pasta



= “The Triple Bottom Line Formula”



The new packaging will make use of food industry by-products that don't compete for Human feeding



The consortium structure includes Industry, RTD's, SMES's and a Sector Association for a solid implementation



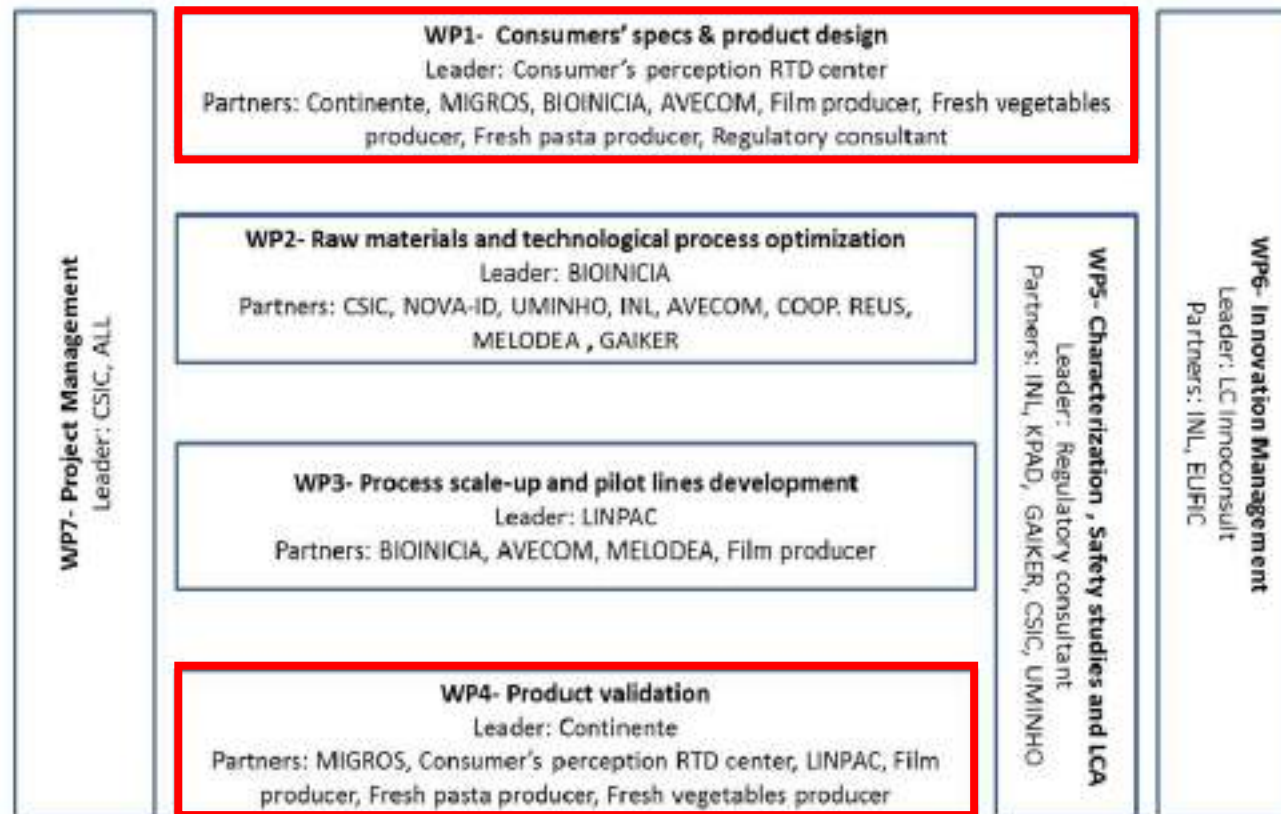
Coordinated by



Partners



Sonae will define its packaging needs and the partners will adapt the technologies to ensure that there's the right fit



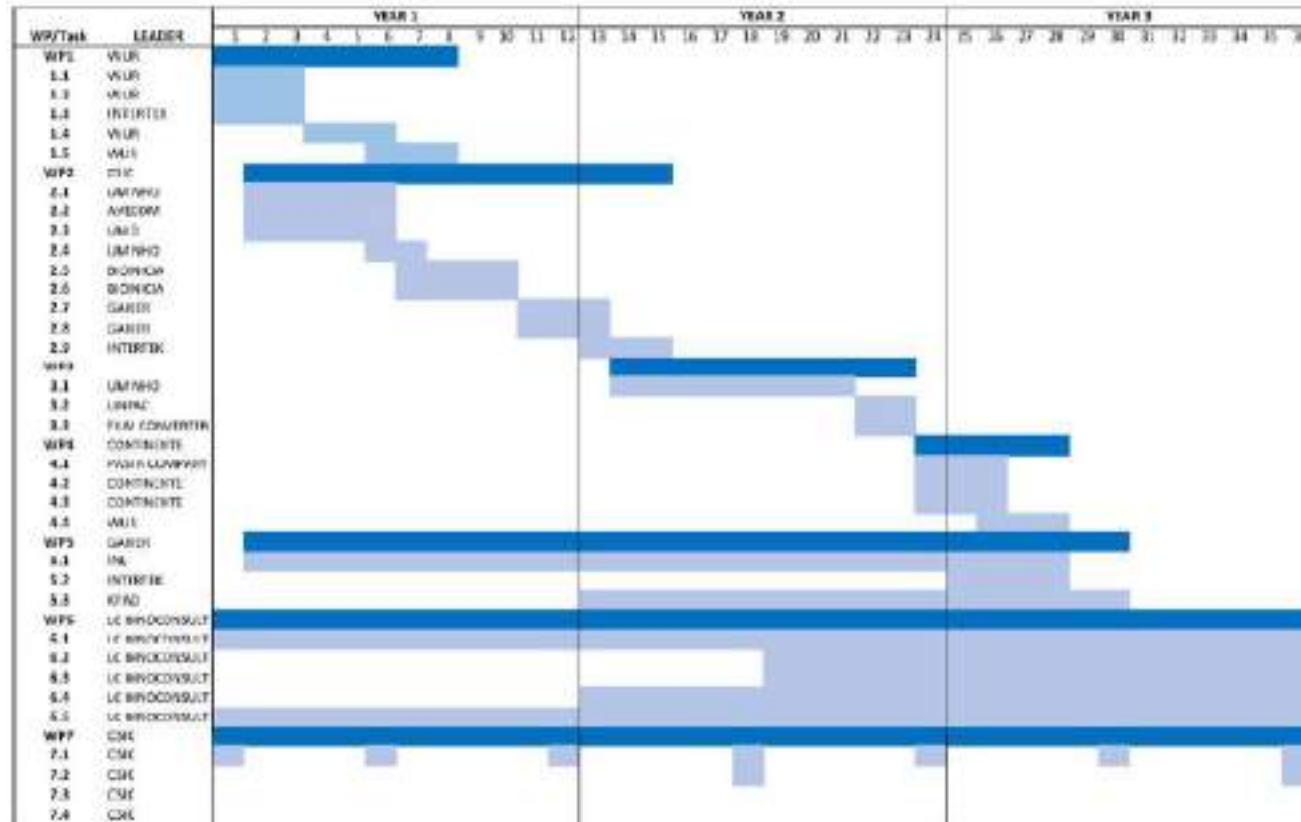
In this project Sonae will **define its packaging needs** and the partners will adapt the technologies to ensure that there's the right fit.

Later the **new packaging solutions will be tested in controlled environments** to analyse the shelf-life extension



The timeline is medium-term but we're trying to accelerate the implementation packaging is now a hot topic

WORK PLAN REVIEW_ Preliminary Gantt diagram

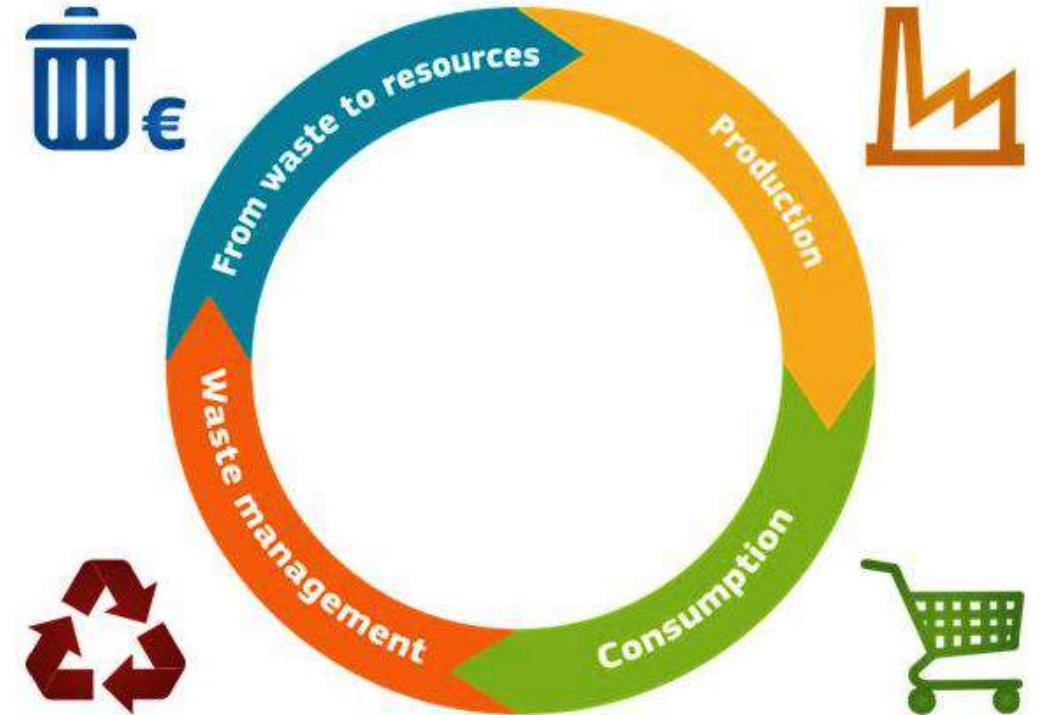


3 Year project
2018-2020



YPACK is aligned with the EU Circular Economy strategy and Responsible Research and Innovation (RRI) guidelines of the European Commission

1. Use of raw bio-based food industry by-products
2. Life-cycle-assessment (LCA) studies
3. Biodegradability of packaging
4. Active and passive barrier solutions to reduce food waste



YPACK will use a holistic approach to produce the next-gen packaging solutions

1. Development of packaging solutions

Production of PHA layers, compounding, prototyping, Industrial Validation

2. Product Validation & Certification

Quality / Shelf life

3. Social approach

Customer profiling, Dissemination, Policies & Regulatory

4. Market Assessment

Business study and Risk assessment



The products were selected by the commercial areas at Sonae, reflecting different criteria, such as waste, value & volume



Frozen Vegetables



Strawberries



Minced meat



F&V



Salads/Soups Mixes



Panana



Bakery

Produto	Descrição	Quantidade	Valor	Shrinkage
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Top Shrinkage



Finding the next generation of fully circular packaging for value added products

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Closing the Circle on the Bananas Lifecycle: Panana Case at Sonae

*We aim for a credible way to **make use of the full end-of-life banana** – both the **fruit and the peel**, in an innovative circular economy approach to it*



Early prototypes are a good indication of the applicability of the technology in a market context



Tray Prototype



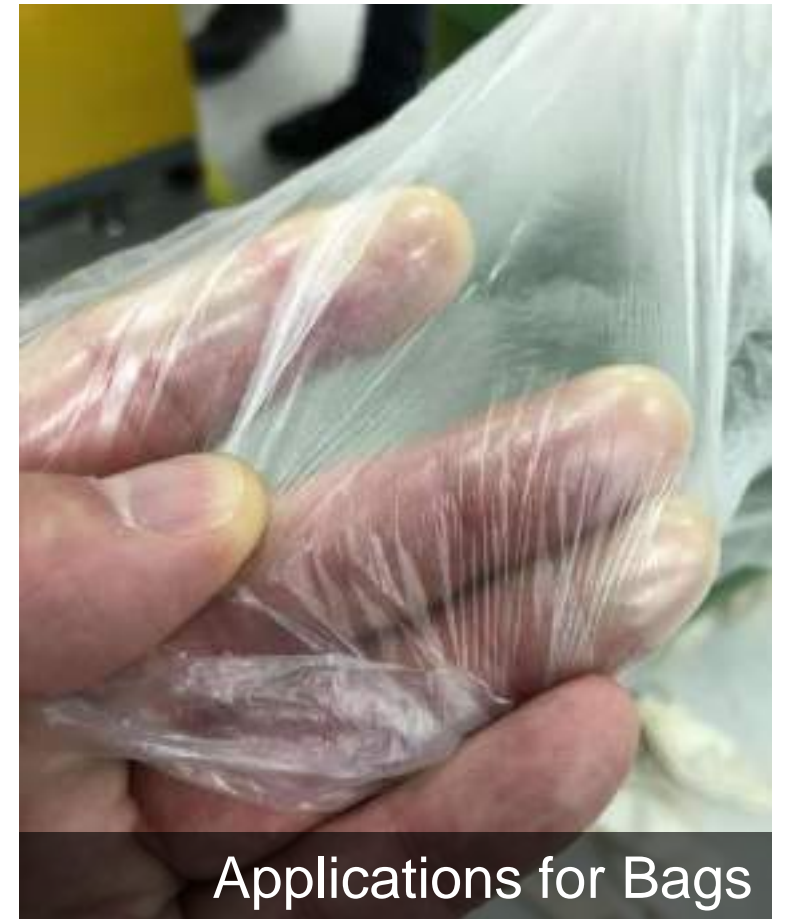
Flow Pack Film Prototype



Newer prototypes are reaching industrial scale and can be tested in the beginning of 2019




Flow Pack Film Roll



Applications for Bags



Sustainable Development



**Development that meets the needs of the present
without compromising the ability of
future generations to meet their own needs**

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