



## Chapter 2

### PP2 Government of Catalonia

1. Overview.....	1
2. Good practices.....	3
3. Opportunities.....	6
4. Annexes.....	8

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## 1. Overview

The sectors selected to study in the framework of the CircE project by the Government of Catalonia are textiles and beverages. Both of them are subsectors of RIS3CAT leading sectors and belong to the highest potential sectors of Catalonia regarding CE.

### 1.1. Smart specialization strategy

The Smart Specialization Strategy of Catalonia (RIS3CAT) has been reviewed, by Sustainable Development Area of the Department of Territory and Sustainability, from a circular economy (CE) perspective and, at the same time, identifying the content that, when deployed, can be relevant to move forward a CE.

At the moment of the elaboration of the RIS3CAT (2013), the *circular economy* wording was not extensively spread, even though in the document it was included the term *green economy* as one of the three vectors that drive the transformation of the Catalan economy. Green economy is defined as that which improves human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. In its simplest terms, green economy is low-carbon, resource efficient (circular economy) and socially inclusive.

Our work has highlighted that the vision of the RIS3CAT includes green economy as one of the key vectors driving the transformation of the Catalan economy. The analysis of the leading sectors (8) detected that 5 of them showed circular aspects in their capabilities and target markets:

- Chemical, energy and resources/materials sector
- Agri-food industry and other links in the value chain
- Design-based industries\
- Industries based on Sustainable mobility
- Industrial systems

The sectors selected to study in the framework of the CircE project are textiles and beverages. Both of them are subsectors of RIS3CAT leading sectors mentioned above, belonging to the first two sectors which are the ones with more potential regarding CE.

Moreover, a review of the Action Plan RIS3CAT 2015-2020 was carried out. The Action Plan was approved in 2017 and circular economy is included in 3 programs of action: innovative public procurement, CATLABS program and collaboration framework between Barcelona Municipality and the Government of Catalonia.

The SWOT analysis has provided an overview of the Catalan economy related to the readiness and potentially to move towards a circular economy. Different areas were analysed:

- Economic: Macroeconomic aspects, Business system and Internationalization
- Social
- Regulatory
- Policy





- Environment
- Other: Research and innovation

Briefly, at a macro-economic level, Catalonia has a long industrial tradition and the industrial sectors represent 19 % of the GDP, approximately. In terms of mineral, energy and material resources, Catalonia is highly dependent on its external imports. As Europe, imports of materials and natural resources are 6 times higher than exports, showing a high dependence on resource supplies. The high level of unemployment, especially for young people, and the economic crisis of the last years have had its effects to the Catalan economy and business. However, the actual picture shows that different stakeholders are starting circular initiatives: the Government of Catalonia is fully compromised with circular economy with a Strategy on Green and Circular Economy since 2015 and related policies tools and funding lines. There are already some projects going on at territorial level like Vallès Circular, Manresa in Symbiosis... that joints governments, research and technological centres and business. In the last years, increasing number of Catalan companies is including circular practices in their value chain.

## 1.2. Sectors

### The overall results

The sector analysis of Catalonia is focused in the textile and beverage sectors, corresponding to subsectors of established priority sectors in the RIS3CAT. The analysis is mainly detailed by the Statistical classification of economic activities in the European Community (NACE code), to favour inter-comparison among regions.

The NACE codes analysed for Catalunya are the following:

- C13-14\_ Manufacture of textiles, wearing apparel and leather and related products
- C10-12\_ Manufacture of food products, beverages and tobacco products (but tobacco has not a relevant weight in Catalonia), being C11 specific for beverage.





## 2. Good practices

Good practices have been identified in both sectors. Identification of good practices favours to start analysing what the opportunities of the sector can be. Opportunities can be classified following the ReSolve Framework of the Ellen MacArthur Foundation:

1. **Regenerate** shift to renewable materials and energy
2. **Share**: keep product loop speed low and maximise utilization of product by sharing by different users
3. **Optimise**: increase performance and efficiency of a product and process of manufacturing
4. **Loop**: keep components and materials in a closed loop and inner loop of the butterfly EMF diagram
5. **Virtualize**: dematerialization, in this case, not of the product, but of the manufacturing and logistic processes by doing them virtually
6. **Exchange**: Use additive and advance manufacturing in creating the product

### Textile sector

A significant number of national and worldwide good practices in the textile sector has been identified in a benchmarking analysis (see Annex 1). However, the ones considered more relevant to business are listed below with a brief explanation: (the opportunity type that the good practice is referred is included between brackets):

1. Patagonia promotes a responsible and sustainable consumption by offering long-life products in terms of quality (*Opportunity Type Loop*).
2. Mud Jeans seek to close the loop on jeans production. Customers can leave jeans and return them for repair or recycling. This reduces supply chain vulnerability to price fluctuations whilst reducing environmental impacts associated with traditional cotton crops. This business model has demonstrated to have 80% of loyalty to the brand and reduced by 78% and 61% water consumption and GHG emissions, respectively (*Opportunity Type Virtualize and Share*).
3. Axioma, a chirurgic textile industry, that designs hospital chirurgic textiles that can be reused (*Opportunity Type Virtualize and Loop*).
4. CIRCULAR TUVATOWEL. Ecodesign of a towel and implementation of a pilot project of circular production and consumption system. Project done by Manufacturas Arpe, SL (*Opportunity Type Optimize and Share*).
5. Ecoalf has designed a jacket that is multifunctional and modular, made from fishing nets and recycled cotton. The carbon footprint is reduced up to 35% in comparison with a standard jacket (*Opportunity Type Regenerate and Loop*).
6. The innovative packaging of PUMA, using less carton and volume, gives savings up to 3.5M € annually, consumes less water and material (*Opportunity Type Regenerate and Optimize*).
7. MIDWOR (LIFE 14 ENV): studies how to mitigate the environmental impact caused by current DWORs (Durable Water and Oil Repellents), based on PFOA and PFOS, used in the textile finishing industry by analyzing their non-toxic alternatives (*Opportunity Type Optimize*).





8. Roba amiga collects used clothes to sell them in second-hand shops, to export them to other countries, to convert them in other textiles and to recycle their fibres (*Opportunity Type Loop and Share*).
9. Filatures Arnau reconverted itself when the crisis of 2008 threatened its survival. It became one of the few European companies to recycle Kevlar, a fibre resistant to temperature, abrasives and cutting (*Opportunity Type Loop*).
10. Mermaids (LIFE 13 ENV): to contribute to the mitigation of the impact caused by micro and/or nanoplastic particles resulting from laundry waste water on European seas' ecosystems, by demonstrating and implementing innovative technologies and additives for laundry processes and textile finishing treatments (*Opportunity Type Optimize*).
11. Industrias Valls/Punto Blanco, a Catalan textile industry, that uses sustainable fibres like: bamboo, tencel (wood cellulose), line, wool, cotton and it is supporting the "Better Cotton Initiative" that gives direct benefits to farmers. It is also promoting social values with its jobs, territory and social responsibility (*Opportunity Type Regenerate and Optimize*).
12. PACTEX. Project aim to establish synergies between the textile and packaging industries for the exchange of raw materials and resources, and the design of new products in a context of circular and innovative economy (*Opportunity Type Loop*).
13. Unilever has designed a new softener for clothes that allows to save up to 30 L of water in the cleaning process by hand. This product is specially useful in countries like Vietnam (*Opportunity Type Optimize*).
14. Mango. Committed Collection, a sustainable fashion capsule, which has recently launched its second edition. It includes sustainably sourced materials ranging from organic and recycled fibres as recycled wool, organic cotton, modal and lyocell (*Opportunity type Loop and Regenerate*)

Some of the mentioned good practices are presented in a public-friendly format in Annex 2.

### Beverage sector

A significant number of national and worldwide good practices in the textile sector has been identified in a benchmarking analysis (see Annex 3). However, the ones considered more relevant to business are listed below with a brief explanation: (the opportunity type that the good practice is referred to is included between brackets):

1. Coca Cola Company has decreased in 23% the carbon footprint and 20% suppliers' costs due to a better responsible and efficient agriculture based on sustainable production and high quality of ingredients (*Opportunity Type Optimize*).
2. Freixenet, a Catalan cava company. This company has increased in 32% the cellars capacity thanks to redesign and automation of logistics. Besides, 545 tonnes of CO2 emissions were avoided in the transport (*Opportunity Type Optimize*).
3. DAMM, a beer company, has exploited the organic outputs from waste waters and subproducts into biogas production (electricity generation and heat/cold systems). Therefore, savings of 37%, 33% and 22% of thermic energy, electricity and waste, respectively, are obtained (*Opportunity Type Optimize*).
4. Torres, a Catalan wine company, has implemented several measures to become more circular and sustainable: water recycling, own biomass to heat the cellars, bioclimatic architecture, ecological agriculture, life-extension of equipment... Annual accounts show a decrease of 38% of water costs and 16% of the carbon footprint. 99% of the waste is being recovered at present (*Opportunity Type Optimize*).
5. Lemon Factory S.L., in collaboration With The Amadip Esment Foundation, Agroilla, La Paduana and Comercial Bordoy, has implemented in Mallorca an initiative that uses discarded citrus fruits, turning them into a local, natural soft drink framed in socially committed project. It is a product manufactured





90% from discarded citrus fruits and 10% from citrus fruits of abandoned farms. It creates a value chain for discarded citrus fruits. One hundred and fifty tonnes of citrus fruits were thrown away in Mallorca in 2012 (*Opportunity Type Loop*).

6. Coffee Flour is an innovative agriculture product that produces flour from the discarded coffee fruits (*Opportunity Type Loop*).
7. Mahou SanMiguel, a beer company, is developing a new method that combines beer-brewing waste (and other agricultural residues) to make bone biomaterials (*Opportunity Type Loop*).
8. Indulleida is one of the leading fruit processing companies in Spain, with a 220.000m<sup>2</sup> production facility, producing purees, concentrates and other by-products/derivatives. In this company, 99% of the waste is exploited facilitating the development of innovative and competitive ingredients (*Opportunity Type Loop*).
9. [Skipping Rocks Lab](#) is an innovative sustainable packaging start-up based in London. They are pioneering the use of natural materials extracted from plants and seaweed, to create packaging with low environmental impact. The Ooho product is a spherical flexible packaging that is used for liquids including water, soft drinks, spirits and cosmetics. It is made by algae and plants and it is totally biodegradable. It is actually cheaper than plastic (*Opportunity Type Regenerate*).
10. [Rewine Project](#): Life Project to promote the reuse of bottles in the wine industry to reduce the production of waste, greenhouse effect gases, and cost savings for wine producers. The reuse of bottles is spread in the Cava industry but not in the Catalan wine sector. The main objective is to demonstrate the viability of a sustainable system for the collection, cleaning, and reuse of glass bottles in the Catalan wine industry. A pilot project is going to be implemented with the aim to reach 100.000 wine bottles reused (*Opportunity Type Loop*).
11. [Network of returnable bottle initiatives in France](#): A network that joins different stakeholders (producers, local authorities and NGOs) with the aim of mutualizing pilot projects and actions (*Opportunity Type Loop*).
12. Finnish reuse system for beverage packages: Finland has a return rate of beverage packages of more than 90% (one of the highest in the world). The Recycling system costs are covered with recycling fees paid by producers and importers. PALPA, which administrates and develops four deposit beverage package recycling systems, is a non-profit company. One important aspect is that a tax exempt is allowed if the company and the products are registered in a deposit recycling system (*Opportunity Type Loop*).
13. Nespresso has established its own capsule collection systems in 36 countries worldwide to date. Used Nespresso capsules can also be collected as part of national packaging recovery scheme in Germany, Sweden and Finland. Nespresso aims to increase its global capsule collection capacity from over 86% in 2015 to 100% in 2020. The recovered aluminium is used for new coffee apparatus. The plastic is used to be part of urban public furniture and the organic material is used as fuel or compost (*Opportunity Type Loop*).

Some of the mentioned good practices are presented in a public-friendly format in Annex 4.





### 3. Opportunities

The project activity until now has identified several circular economy opportunities, thanks to dialogues with the project stakeholders, that includes companies, associations, research and innovation institutions, technological centres and public administration offices.

#### Textile sector

The textile sector was the driving force of industrialisation in Catalonia in the XIX century and led the industrial sector until the 70s of last century. After that, the sector was subject to an important transformation due to the emergence of new international competitors and the increasing globalisation of its activities.

This transformation and the increasing influence of other emerging industrial sectors have lowered down the economic influence of the sector in Catalonia. This was even more so due to the economic crisis that started in 2007. Consequently, in 2014, the sector represented only 3.8% of the Gross Added Value of the Catalan industry and 6.3% of industrial employment in Catalonia. Still, companies representing all parts of the value chain can be found in Catalonia.

The sector is composed by 4.115 companies (2016). Most of them are small, family-owned businesses. In fact, middle-size and big businesses represent only 3% of the textile companies in Catalonia.

The textile activity is geographically concentrated in seven counties. The core of the textile industry is situated in Vallès Oriental and Occidental (25% of employment in the sector), followed by Maresme (19% of employment), Barcelonès (16% of employment) and central counties (Anoia, Bages and Osona), which account for 12% of employment.

Opportunities of the textile sector can be classified in terms of:

- a. REGENERATE: eco-design
- b. SHARE: responsible consumption patterns
- c. OPTIMIZE: efficient production processes
- d. LOOP: take-back and recovery systems, new high added value products, maintenance improvement...
- e. VIRTUALIZE: service as product

Up to now analysis concludes that efficient production processes and ecodesign, followed by new high added value products and take-back and recovery systems, are the main opportunities for the sector.

#### Beverage sector

Opportunities of the sector can be classified in terms of:

- a. REGENERATE: design of packaging with renewable materials
- b. OPTIMIZE: sustainable value chains, efficient production processes, water, energy and organic matter management, packaging prevention and/or packaging with less environmental impact...





- c. LOOP: use of discarded resources, new high added value products, packaging reuse, packaging recycling

Up to now analysis concludes that the use of wasted resources, followed by water, energy and organic matter management, sustainable value chains and new high added value products are the main opportunities for the sector.







## 4. Annexes

### Annex 1

#### Good Practices in TEXTILE sector

1. New textile fibre is created using cotton scraps and wood: <http://circulatenews.org/2017/02/new-textile-fibre-created-using-cotton-scraps-wood/>
2. Circle Textiles Programme: <http://www.circle-economy.com/textiles/>
3. Circle Textiles Programme - Reports: <http://www.circle-economy.com/reports-insights/>
4. **Recycling of Technical fibres:** <http://www.ccma.cat/tv3/alacarta/programa/textil-sobreviure-tot-estirant-el-fil/video/5628264/>
5. Refurbish of clothes from Patagonia: <https://www.fastcoexist.com/3067443/patagonia-wants-to-refurbish-your-old-clothes-and-sell-them-to-someone-else>
6. New business models for Circular Economy in the clothing sector (article): <http://www.refinity.eu/blog/business-models-for-the-circular-economy-in-the-clothing-sector>
7. Le Relais, un rôle moteur dans le développement de la filière: La collecte et la valorisation textile [http://www.lerelais.org/decouvrir.php?page=collecte\\_et\\_valorisation\\_textile](http://www.lerelais.org/decouvrir.php?page=collecte_et_valorisation_textile)
8. New collection of sustainable denim jeans created with ECO2cotton: <http://www.martexfiber.com/news/r3-denim/>
9. Innovating in the field of recycled yarns: <http://www.jimtaxyarns.com/>
10. FIRST JEANS MADE FROM POST-CONSUMER COTTON GARMENT WASTE: <http://www.evru.com>
11. European Clothing Action Plan: <http://www.letsrecycle.com/news/latest-news/wrap-takes-lead-on-european-textile-recycling-project/>
12. Sustainable fashion: <http://renewcell.se/>
13. Potential of tailored protein materials as fibers: <https://www.spiber.jp/en/endeavor>
14. Spider silk: <http://grist.org/business-technology/is-spider-silk-the-fabric-of-the-future/>
15. Synthetic spider silk: <https://qz.com/708298/synthetic-spider-silk-could-be-the-biggest-technological-advance-in-clothing-since-nylon/>
16. Protein fibers: <https://boltthreads.com/>
17. Refibra™ Reborn TENCEL® fiber: <https://youtu.be/7U3RbcO8bPY> i <http://www.lenzing-fibers.com/en/home/>
18. Sustainable fashion designers: <http://www.redress.com.hk/frontlinefashion/>
19. Sustainable clothing: <https://www.alaziacouture.com/>
20. Mudjeans: [http://www.mudjeans.eu/buy-vintage-jeans-women/?utm\\_source=Newsletter&utm\\_medium=email&utm\\_campaign=CUST-VINT-WMN](http://www.mudjeans.eu/buy-vintage-jeans-women/?utm_source=Newsletter&utm_medium=email&utm_campaign=CUST-VINT-WMN)





21. Post-consumer textile collection (article): <http://www.circle-economy.com/post-consumer-textile-collection-fibersort/>
22. Bringing the Circular Economy to the Apparel Sector (article): <https://www.bsr.org/en/our-insights/blog-view/bringing-the-circular-economy-to-the-apparel-sector>
23. Resyntex (European project): <http://resyntex.eu/>
24. Comillo de Morsa (sustainable fashion brand): <https://colmillodemorsa.com/filosofia/>
25. A guide towards a Circular Fashion Industry in Flanders: <http://www.close-the-loop.be/en>
26. Safe use of nanomaterials in the textile finishing industry: <http://www.life-ecotexnano.eu/>
27. The 12 Forward Thinkers Changing Style and Sustainability (article): [http://www.marieclaire.com/fashion/a28282/fashion-forward/?utm\\_content=buffer59080&utm\\_medium=social&utm\\_source=linkedin.com&utm\\_campaign=buffer](http://www.marieclaire.com/fashion/a28282/fashion-forward/?utm_content=buffer59080&utm_medium=social&utm_source=linkedin.com&utm_campaign=buffer)





Catalan Best Practices

# MANGO

*Reintroduction of recycled fibers  
into new products*



Type of stakeholder: Type of action:



Apparel manufacturer Enhancing recyclability

## Description

MANGO is a fashion manufacturer and retailer with more than a 2.200 stores, using 1.249 factories and production centres amounting 146 million garments and accessories manufactured per year, totaling 168 million sqm of fibres used.

MANGO is strengthening its commitment with sustainability with its Take Action Programme.

One of its initiatives is the MANGO Committed Collection, a sustainable fashion capsule, which has recently launched its second edition. The MANGO Committed Collection includes sustainably sourced materials ranging from organic and recycled fibres as recycled wool, organic cotton, modal and lyocell.



Impact

Reduction of pressure on natural resources for its sourcing



Targets

2022: 50% of all cotton will be from sustainable source

Progressive introduction of a larger share of sustainable fibers throughout all MANGO lines





# HILATURAS ARNAU

Production of 100% recycled yarns  
& fabrics



Type of stakeholder:    Type of action:



Textile company  
Yarn manufacturer



Enhancing recyclability



## Description

Is a yarn and fabrics manufactured which sources fashion, technical and special yarns and fabrics to leading fashion and industrial manufacturers.

Under its brand BRE FASHION (BCN Eco Recycled) the company produces PET recycled fibres from 100 waste management plants and ocean waste. The recycled poliamide is obtained from fishnets in disuse. Cotton, wool and linen is obtained from yarn recycling plants.



- Contribution to reduce marine litter.
- Reduction of landfill waste.



- 100% of their production from a recycled origin
- Increase their share in major apparel and fashion manufacturers





*Reduction, reuse, remanufacturing  
and recycling of textiles*



Type of stakeholder:



Upcycler

Type of action:



Sharing resources

### Description

*Cooperativa Roba Amiga aims at building up a more efficient and sustainable management of second hand clothes in Catalonia. It has 1.700 containers distributed throughout Catalonia in 450 municipalities.*

*The clothes collected are then reselled in Roba Amiga stores, exported to developing countries, remanufactured in fibres for industrial purposes or recycled into new fibres for the textile industry.*



### Impact

- *Social and economic inclusion of 100 workers in risk of exclusion.*
- *8.278 tonnes of textile collected.*
- *40% reusable and 45% recyclable.*





Annex 3

Good Practices in BEVERAGE sector

1. CocaCola: <https://www.theguardian.com/sustainable-business/2017/feb/28/coca-cola-u-turn-can-and-bottle-recycling-europe?CMP=ema-1706&CMP=>
2. Carlsberg: [https://stateofgreen.com/en/profiles/state-of-green/news/carlsberg-s-next-generation-green-fiber-bottle?utm\\_source=State+of+Green+Newsletter&utm\\_campaign=60eba2e750-State+of+Green+Newsletter+newsletter&utm\\_medium=email&utm\\_term=0\\_2978beafb9-60eba2e750-273103721](https://stateofgreen.com/en/profiles/state-of-green/news/carlsberg-s-next-generation-green-fiber-bottle?utm_source=State+of+Green+Newsletter&utm_campaign=60eba2e750-State+of+Green+Newsletter+newsletter&utm_medium=email&utm_term=0_2978beafb9-60eba2e750-273103721)
3. Bacardi: <http://www.livecircular.com/bacardi-circular-economy-initiative-diverts-fruit-waste-bars-produces-soap/>
4. Beer and the circular economy (article): <http://circulateneews.org/2017/03/mines-a-pint-the-circular-economy-applied-to-beer/>
5. La transición hacia una economía baja en carbono. Una mirada sobre el sector financiero y el sector alimentario (article):  
[https://www.fundacioncajaingenieros.es/documents/54843/59201/AAFF\\_Canvi\\_clim%C3%A0tic\\_v4.pdf/0a70b425-8881-46a4-a8fd-3995dc936e97](https://www.fundacioncajaingenieros.es/documents/54843/59201/AAFF_Canvi_clim%C3%A0tic_v4.pdf/0a70b425-8881-46a4-a8fd-3995dc936e97)
6. Biomass and vineyards: <http://sostenible.cat/node/117532>
7. Water ball recipient: <http://www.telegraph.co.uk/technology/2017/04/12/edible-water-bottle-could-put-end-plastic-packaging/>
8. REWINE (European Project): <http://www.rewine.cat/ca/node/15>
9. Die Steiermarkflasche: <http://www.abfallwirtschaft.steiermark.at/cms/ziel/69559705/DE>
10. Réseau Consigne: <http://www.reseauconsigne.com/>
11. Jean Bouteille: <http://www.jeanbouteille.fr/en>
12. J'aime mes bouteilles initiative, Jura: <http://jaimemesbouteilles.fr/>
13. Yoyo : la consigne2.0:  
<http://www.constructioncayola.com/environnement/article/2017/02/20/110491/yoyo-consigne.php> and <https://www.yoyofrance.com/> and [https://www.sciencesetavenir.fr/nature-environnement/une-start-up-recompense-le-tri-des-bouteilles-plastiques\\_110334](https://www.sciencesetavenir.fr/nature-environnement/une-start-up-recompense-le-tri-des-bouteilles-plastiques_110334)
14. Deposit-refund System in Finland: <https://www.palpa.fi/beverage-container-recycling/deposit-refund-system/> and <http://www.ekopullo.fi/default0b4d.html?docId=12489>
15. Vineyards' Integrated Smart Climate Application: <https://sc5.easme-web.eu/?p=730253>
16. Indulleida: <http://indulleida.com/ca/osmodir/> and <http://indulleida.com/ca/proper4food/> and <http://indulleida.com/ca/aldefruit/>
17. Foodrink europe: <http://circulareconomy.foodrinkeurope.eu/>





# Indulleida

*Juice Producer: commercializing byproducts for other industry sectors*



Type of stakeholder



*Raw material processor*

Type of action



*Byproduct valuation*

### Description

*Indulleida is a raw material processor of fruits who provides juice for main operators in the beverage industry. From the juice manufacturing process, Indulleida optimises further uses of the raw materials involved, creating new byproducts for other industry sectors such as fibres for animal food, scent for the food industry, fertilizers for agroindustry and*

*The factory in Alguaire processes more than 400,000 tons of fruits and vegetables yearly, and now is starting the construction of a biorefinery to extract and valueate new biopolymers from biomass.*



Impact

Contribution to decarbonising the economy and optimising biomass processing for many industry sectors.



Target

Improve a sustainable extraction of biopolymers, coverings and additives for packaging, fertilizers, and food additives.





**Generalitat de Catalunya**  
Government of Catalonia



*Waste reduction and byproduct valuation in the beer industry*



Type of stakeholder



Beer producer

Type of action



Byproduct valuation

### Description

*The Barcelona-based beer producer Mahou San Miguel is increasingly improving its environmental performance: using electricity from 100% renewable sources, reducing a 47% on its carbon emissions by saving 1 million transports and increasing waste valuation up to a 99,5%.*

*Its producing centre in Lleida values 99,98% of its waste.*

#### Impact



Reduction of waste streams to landfill  
Valuation of yeast for the food sector; husk for the animal food sector, mud from the treatment system for the construction sector.



#### Target

Becoming the company with less environmental footprint in the food and beverage sector by 2020.

1



European Union  
European Regional  
Development Fund





*Agrofood industry waste collection and valuation for animal feed industry*



Type of stakeholder



Upcycler

Type of action



Waste collection    Byproduct valuation

### Description

*In 1995, Copiral started the first company dedicated to food byproduct management and valuation of liquid byproducts in Catalonia.. It collects products from the food and beverage supply chain when they are not suitable for human consumption and transforms them into flour for animal consumption.*

*The company mostly collects expired products, non-expired products with labelling or printing defects and other defective products in the manufacturing process that cannot be commercialised, offering major food and beverage manufacturers the chance of turning food waste into a competitive advantage.*



Impact

150.000 tones of food waste byproducts  
valuated annually  
92,7% of inbound products reintroduced  
into the market

