



GOOD PRACTICE

COMPENDIUM

CONTENTS

01 [Meet the Authors](#)

02 [How to Use the Guide](#)

03 [Introduction to Waste2Worth](#)

04 [About this Compendium](#)

05 [The Case Study Pedagogy](#)

06 [Our Good Practice Case Studies](#)

07 [Conclusion](#)



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01 | Meet the Authors

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02 | How to use this Interactive Guide

This Waste2Worth Good Practice Compendium is an online interactive set of resources and additional learning links. This content provides a deeper, self-guided learning opportunity that raises awareness and acts as an inspiration. It guides target groups into an integrated approach to addressing sustainable development education in the food sector and initiating action through specific and concrete teaching improvements.

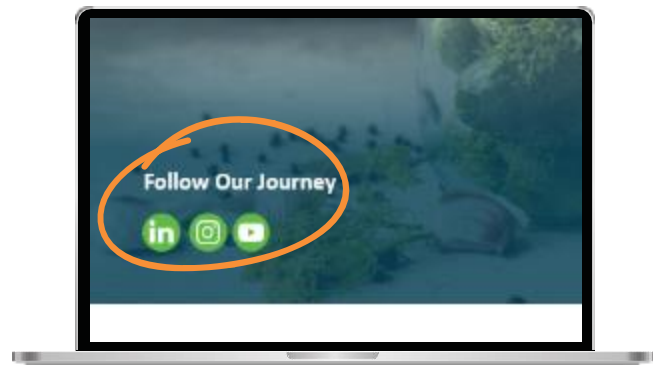
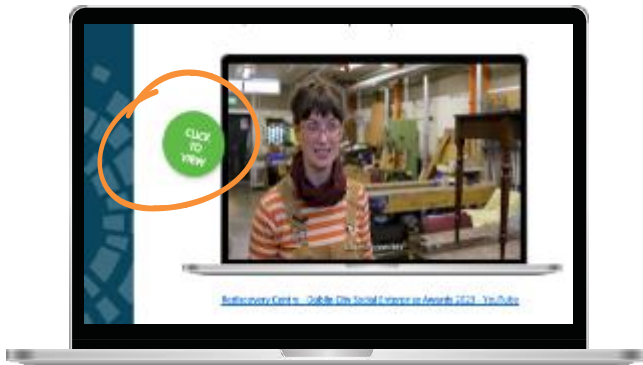
All Business Logos, information sources and social media icons are linked & we invite you to use all links to explore and engage with the case studies and good practices in more detail.

INTERACTIVE CONTENT IS IDENTIFIED IN THIS GUIDE BY THESE ICONS



CLICK TO VIEW

DEEPER LEARNING - Click to find out more about our case studies



TOP TIP

To return to the compendium - use the click to go back option in your browser



FAST AND EASY NAVIGATION

Jump to a case study of choice by clicking on the interactive table of contents



03 | Introduction to Waste2Worth

The objective of Waste2Worth (W2W) is to provide **TAILORED SUPPORTS** for our target groups (TGs) (Vocational Education Training (VET) bodies, food SMEs, bioeconomy stakeholders & regional /agricultural agencies) to **INCREASE AWARENESS** of the impact of food waste on the environment & economy, but specifically for food SMEs. By creating awareness & ultimately a mapping of avoidable waste within food SMEs, we will **ENCOURAGE INNOVATIVE THINKING** into how they, by **COLLABORATING IN A CIRCULAR WAY** in the wider community, can better use these wastes creating worth & economic gain.

Target Groups:

- **VET Educators**
- **Food SMEs**
- **Primary Food Producers & Bioeconomy Stakeholders**
- **Regional Development Agencies**

The W2W project partners will collaboratively develop & create tools and supports to fill the skills and knowledge gap among **VET Educators** and **Food SMEs** that will equip and empower them, to **recognise the connection between food waste valorisation and required climate action**.

Consequently, both target groups with knowledge & awareness, can develop and implement transferable skills (collaboration & problem-solving) and tools to address and improve the food waste challenge and become changemakers of and for Europe and for the Future.

By the end of the project, the following resources will be available on the project website:

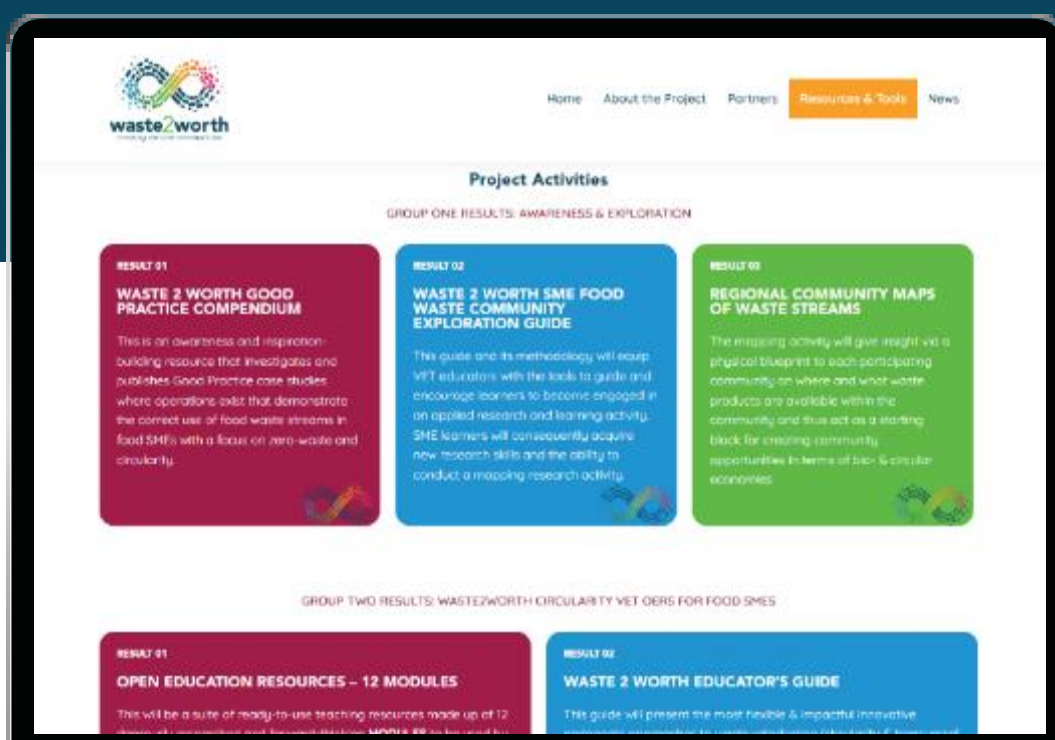


www.waste2worth.eu



Project Results & Resources:

- **COMPENDIUM:** This will catalogue & appraise good practices.
- **COMMUNITY EXPLORATION GUIDE:** A VET manual in waste discovery.
- **WASTE STREAM MAPS:** These will highlight waste sources and potential prospects.
- **EDUCATOR GUIDE:** This will give practical guidance to VET educators for the OERs.
- **W2W Open Education Resources:** A robust course to foster & promote sustainable thinking, practice & approaches to Food waste valorisation.
- **COLLABORATIVE SKILLS ACTIVITY GROUPS:** Practice-focused TG workshops.
- **DESIGN THINKING FACILITATOR'S GUIDE:** This will assist TG's problem-solving journey.
- **WASTE VALORISATION ACTION PLANS:** The development of steps to circularity for the future.



04 | About this Compendium

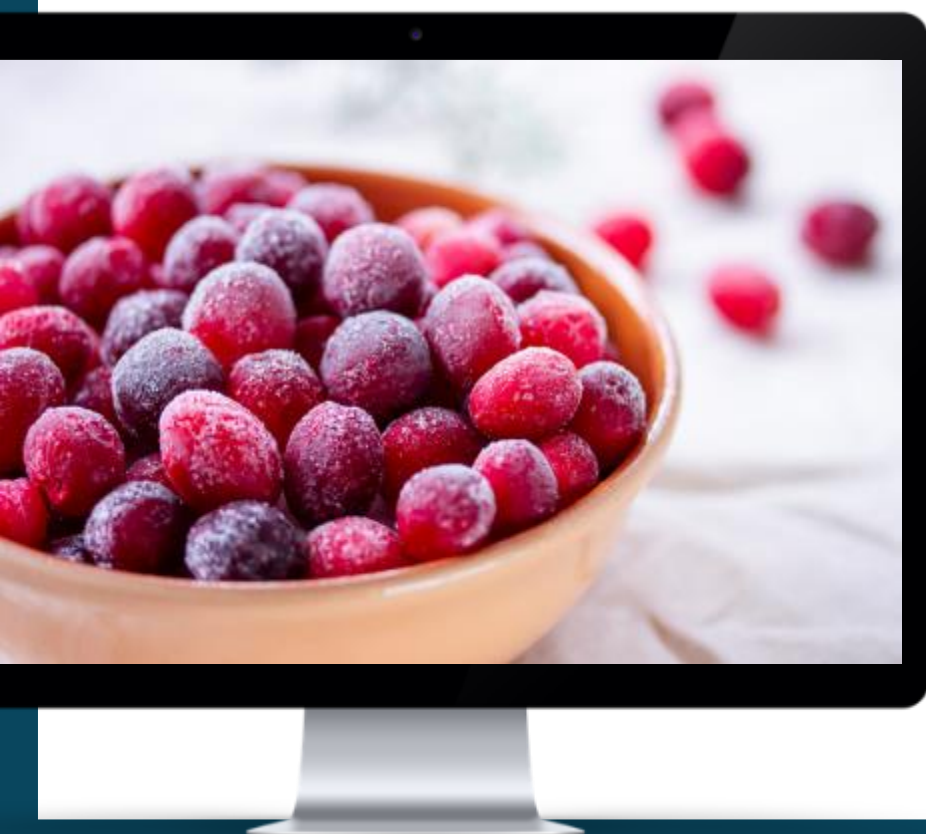
In a world where concern for sustainability and resource conservation is consistently on the rise, attention has increasingly focused on reducing food waste and implementing zero-waste practices across all sectors, including the hospitality industry and small and medium-sized food enterprises (SMEs). The importance of these measures cannot be underestimated, as they not only have a positive impact on the environment but can also generate significant economic benefits.

Food SMEs and catering businesses play a crucial role in the economy, but they are also responsible for a considerable part of food waste. From surplus in production to unconsumed portions of dishes served, there are numerous opportunities to reduce this waste along the supply chain. Adopting circular economy practices, including reuse, recycling, and source reduction, can help minimise this negative impact.


Preventing food waste not only benefits the environment by reducing greenhouse gas emissions and pollution but can also have a positive impact on the financial performance of Food SMEs and hospitality businesses. By reducing the amount of wasted food, these companies can save on purchasing and disposal costs, improve their operational efficiency, and enhance their reputation as socially responsible businesses.

In short, preventing food waste, adopting zero-waste practices, and implementing circular economies are key elements for Food SMEs and the hospitality industry on their path to environmental sustainability and long-term economic success. By prioritising these initiatives, they are not only protecting the planet but also strengthening their own businesses in the process.

This collection of Good Practice case studies from the 4 participating countries can be useful as examples in achieving these goals. It is a unique training tool for educators and prospective food entrepreneurs to get a complete view of the trends, drivers and opportunities for innovation and business survival in the food sector in Europe. This collection of good practices is especially inspirational as we live and work in challenging times for people, planet & profit.



What is a Good Practice?



In the context of this project, a good practice is an example of a food business / initiative or practitioner that has been proven to work well and produce good results and is therefore recommended as a case study. The good practice being spotlighted is an example of a successful experience, which has been tested and validated, in the broad sense, which has been repeated and deserves to be shared so that more people can adopt it.

Good Practice Case Study Selection Criteria:

To summarise, the W2W partners chose the Good Practice Compendium examples, because they have proven to be:

- **Effective and successful** – as they represent the most effective ways of achieving a specific objective, they can be successfully adopted and have had a positive impact on communities.
- **Environmentally, economically, and socially sustainable** – as they meet current needs without compromising the ability to address future needs.
- **Technically feasible** – as they are easy to learn and implement.
- **Inherently participatory** – their participatory approaches are essential as they support a joint sense of ownership of decisions and actions.
- **Replicable and adaptable** – as they have the potential for replication and are therefore adaptable to similar objectives in varying situations.
- **Reducing disaster/crisis risks** – as they contribute to disaster/crisis risk reduction for economic and community resilience.

A LITTLE PROGRESS

EACH DAY ADDS

UP TO BIG RESULTS

THE POWER OF CASE STUDIES AS A TRAINING TOOL

This collection of 25 Good Practices provides a unique training tool that pools the diverse knowledge from the 4 participating countries to provide VET educators & food SMEs with a complete guide to the drivers and opportunities for food waste valorisation in Europe. This compendium is especially inspirational as we live and work in challenging times for people, planet & profit.

We encourage you to use case studies as part of your teaching/training practice. Why? Case studies are

- used as a teaching tool to show the application of a theory or concept to real situations.
- fact and context-driven. They create empathy with the main characters, and are relevant to the reader, in relating to a challenge that needs to be solved.
- a way of discovering the concept in a new manner.

A major advantage of teaching with case studies is that the learners are actively engaged in figuring out the principles by abstracting from the examples. This develops their skills in the key competencies of:

- Problem-solving & Coping with ambiguities.
- Analytical tools, quantitative and/or qualitative, depending on the case.
- Decision-making in complex situations .

Waste2Worth will substantially improve education for food business & Agri-food students by:

- Raising their awareness & commitment to food waste innovation and circular streams for business growth & sustainability via innovative ethical solutions.
- Providing applied industry input to their own professional development, improving their results and opening doors to future pivots and adaptations while also achieving better results for People – Planet & Profit.

05 | THE PEDAGOGY OF CASE STUDIES

“Food SMEs are hungry for innovation. Although the food and drink service sector plays an important role within the EU economy, innovation in food sector SMEs have received little previous attention”

(Baregheh, A., Rowley, J., Sambrook, S., Davies, D. "Innovation in food sector SMEs", Journal of Small Business and Enterprise Development).

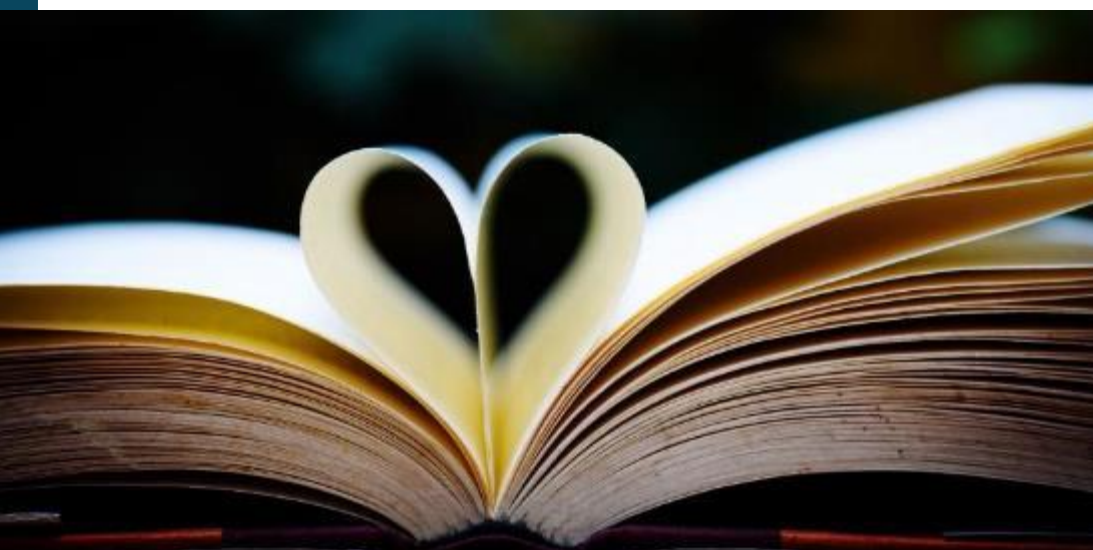
In applying the **Waste2Worth** Good Practice case studies in your training/teaching, you have the opportunity to address specific pedagogical issues and to develop higher-order skills in learners/ students. We are adapting from **the case method**¹, based on a philosophy of professional education that associates knowledge directly with action (Boehrer, 1995). The case method is a rich and powerful approach to the development of cognitive skills in learners. It is also a flexible approach, in the sense that educators can use it in alternative ways.

Velenchik (1995) highlights that **the case method**¹ is a motivation to learn theory. In VET training practice, we often use examples to illustrate the application of theoretical concepts. However, we tend to use the example to reinforce the theory, having taught the theory first, rather than thinking of the theory as a set of tools for answering the question posed by the application.

The focus, therefore, is on the theory itself, and the application is often perceived as incidental. When students do not understand the purpose of theory, the process of learning becomes more difficult than it needs to be, and they often fail to grasp the tools they need.

In the case method¹, the problem that the students are challenged to solve takes centre stage. They soon realise that they do not have the tools, and they start looking for the tools. They want to learn theory. The case method can also be used in a very effective way to move learners gradually up the cognitive skills ladder from the low skills levels of knowledge, comprehension and application to the higher skills of analysis, synthesis and evaluation. This educational taxonomy was originally proposed by Bloom (1956) and provides a transparent and structured approach to the development of learner skills.

¹ The pedagogy of case studies | The Economics Network



In terms of the Pedagogy Power of case studies, the case method delivers:-

Established knowledge within a real-world context; the case method supports and facilitates the comprehension of basic knowledge. It involves the recall of a wide range of material but all that is required is bringing appropriate information to mind, not necessarily understanding its meaning. When combined with other training content, the case method is used to broaden knowledge.

Comprehension. This skill is defined as the ability to grasp the meaning of material. It can be demonstrated by translating material from one form to another, by interpreting material and by extrapolating information. By basing knowledge within a real-world context, the case method supports and facilitates the comprehension of basic knowledge.

Application. This is the ability to use learned material in new and concrete situations (i.e. taking influence to apply learning in their own Food waste valorisation journey). Through our 20 Good Practice cases, learners develop an understanding of how theory is applied in real world contexts.

Analysis. Our Good Practices require students to break down complex information, establish relationships and identify issues. The process generally includes the identification of the various parts, analysis of the relationships among the parts and recognition of the principles involved. As already mentioned, analysis is at the centre of the case method.

Synthesis. This skill refers to the ability to put parts together to form a new whole. The process may involve, for example, the production of their own new business model, development plan, or research of new avenues to keep up to speed with trends and current events (e.g., climate action & the Green Deal).

Evaluation. Critical evaluation is concerned with the ability to judge the value of material for a given purpose. After having analysed and synthesised a particular case, learners should engage in an evaluation of alternative policies or strategies available to the Good Practice business. This can include an evaluation of decisions already taken against possible alternative solutions.

The objective of the Good Practice Guide is to provoke critical thinking and a broadening of perspectives and knowledge of food businesses, primary producers and VET bodies on the opportunities to innovate the food sector so that it becomes more conscious of food waste valorisation and sustainable in every essence of the word. Either in groups or in individual learning, empower your learners to take over a Good Practice case, and dissect key information in order to identify the problems that arose and find solutions to the problems.

This allows learners to be able to:



*People never learn
anything by being told,
they have to find out for
themselves.*

- Paulo Coelho



Instructions for Learners

To achieve the full benefit from our Good Practice case studies in your learning we encourage you to approach each case with the following guidelines:

- Thoroughly read the Good Practice case and formulate your own opinions before sharing ideas with others in your group or class. You must be able to critically examine the best practice presented, identify the problems/opportunities on your own, as well as be able to offer solutions and alternatives. Before the study is discussed with the group, you must be able to form your own outline and course of action.
- Once you have a clear understanding of the good practice, you can share your ideas with other members of your group.
- Have an open discussion of the case and listen to the input of others in your group and class.
- Reflect on how your original ideas changed as a result of the group discussion.



06



OUR GOOD
PRACTICE
CASE STUDIES



Case studies Categorised by Country

Ireland

[BiaSol](#)

waste → food

[My Gug](#)

waste → energy & fertiliser

[Meade Farm](#)

waste → food

[Cream of the Crop](#)

waste → food

[Millstream Recycling](#)

waste → animal feeds

[Food Cloud](#)

waste → social benefit

[Too Good To Go](#)

food waste avoidance

Spain

[Escatafood](#)

waste → food

[Väcka](#)

waste → food

[Paturpat](#)

waste → food

[Delikatetxe](#)

waste → food

[Calor Renove](#)

waste → energy

[Zelai Txiki](#)

food waste avoidance

Italy

[Ley](#)

waste → food

[Biova](#)

waste → food

[Orange Fiber](#)

waste → textile

[Naste](#)

waste → beauty products

[Banco Alimentare](#)

waste → social benefit

[Rice House](#)

waste → building material

Finland

[Helsieni](#)

waste → food

[Kesko](#)

waste → food

[ResQ Club](#)

food waste avoidance

[Honkajoki](#)

waste → feed & fertiliser

[Soil Food](#)

waste → soil improvers

[BioPallo](#)

waste → compost - fertiliser





ABOUT

Bia Sol was established in 2020, by sister and brother team Niamh & Ruairi when they realised that repurposing food waste was a viable way to be more sustainable and create healthy food products. The rapid growth of craft brewing across Ireland led them to their first ingredient: brewers' spent grains, which they repurpose into super-milled grain.

Since then, they've invested in bigger premises and more resources to grow the business. Recently they released more healthy food products that focus on minimising waste while also providing nutritional value. This duo cares about our environment and the people who live in it and strives to make highly nutritious, zero-waste food products that are easily accessible in Ireland. They are fighting back against typical processed foods and their low nutritional value. Every BiaSol product is designed to help one make better food choices in the simplest way possible. Not only are their products good for you but they also taste great.



INNOVATION/TECHNOLOGICAL APPROACH

BiaSol is committed to building a zero-waste world. They are finding innovative solutions to food waste that also support local businesses. By upcycling they are bringing their primary ingredient to its highest value. Biasol has partnered with local Irish craft breweries to bring their leftover/spent grain back into the food chain.



SUSTAINABILITY

Environmental and sustainable development is at the heart of everything BiaSol is working on. Their entire business is built on creating a circular economy. They remove waste (spent brewer's grains) from several brewing companies and give the 'waste' product an extended life by repurposing the grains into nutritious food ingredients. It can't get much better than that.



BIASOL



AWARDS/SUCCESS

Biasol have received many awards in their few years, signifying the impact they are making. However the biggest measure of impact can be outlined as this, they upcycled 100,000 tonnes of spent grain in 2023!

Other achievements include: Biasol joined the [Upcycled Food Association](#), whose mission is to champion upcycling as one of the most critical solutions to mitigate the climate crisis and advocate for the best interests of the upcycled food industry.

They received The Irish Times Innovation Award for Manufacturing & Design in 2021.

Biasol was announced as the winner of the Love Irish Food Blas na hÉireann Bursary 2023 at the Blas na hÉireann food awards and they received the RDS Sustainable Rural Innovation Award.

They have pledged their commitment to food reduce food waste by signing the [Food Waste Charter of Ireland](#)



Upcycled food is a way that anyone can prevent food waste via the products they buy.



USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [Twitter / X](#)
- [YouTube](#)





ABOUT

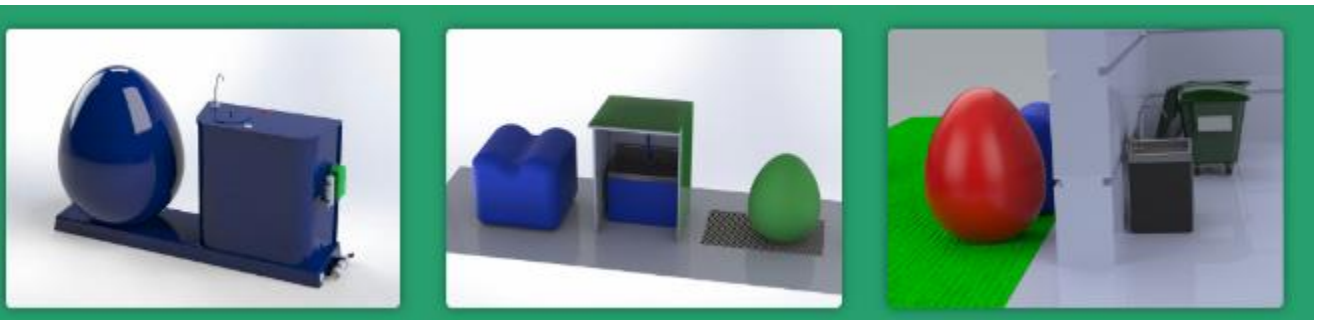
MyGug is a company co-founded in 2019 by Fiona Kelleher and Kieran Coffey, that has introduced a green energy food waste system for homes and food businesses in Ireland. They design and supply micro-scale digesters that use the natural process of anaerobic digestion to convert food waste into usable biogas and a liquid bio-fertiliser. The biogas can be used directly in your home or business for cooking or heating and the liquid bio-fertiliser can be used for growing food. At my Gug, they are passionate about supporting customers in eliminating the negative environmental impacts associated with the disposal of food waste. MyGug will turn this food waste into a valuable resource



INNOVATION/TECHNOLOGICAL APPROACH

MyGug is a partner in eco-friendly food waste management. Unlike other models, the MyGug biodigester works anywhere, in any climate. This frees users from the constraints of extreme temperatures, variable humidity or even urban versus rural settings.

The global food waste problem is a challenge for businesses and all of society. The negative impacts of food waste on the environment are well documented. At MyGug they allow businesses to take control of their own food waste and turn it into renewable energy. When you treat food waste close to where it arises and in a sustainable way you eliminate the possibility of contamination with other wastes, you eliminate emissions associated with waste collection vehicles and you reduce your fossil fuel use. One might think that the positives end there but they don't... After the food waste goes through the digestion process releasing its energy in the form of biogas you are also left with a liquid fertiliser. This liquid fertiliser is in an ideal form for plant uptake. This liquid fertiliser is called digestate and is ideal for growing more food. MyGug utilises mother nature's recycling system. There is no waste whatsoever.



MY GUG



SUSTAINABILITY

The primary goal in the design of MyGug is to cut methane emissions associated with food waste. Studies completed by the European Union show that the majority of food waste that is generated in the 28 Member States is generated by households. It is estimated that each EU citizen produces approximately 92kg of food waste (food and inedible parts associated with food waste) per year. This equates 88 Million tonnes of food waste with 46.5 Million Tonnes being derived from households in the EU 28 per year. Effective management and treatment of biodegradable waste is a topic of increasing concern for governments across the globe. The organic fraction of residual waste which is dominated by food waste is problematic as it is putrescible; it contaminates recyclable material in combined waste collection systems and releases methane to the atmosphere when deposited in landfill sites.



AWARDS/SUCCESS

The main success is in the impact: Even the smallest MyGug biodigester can take up to 5.5 kilograms of food waste per day. That gives you up to 3 hours of daily cooking time and 11 litres of fertiliser. Directly contributing to a more sustainable future. Every single day.

However, the company has also been recognised for their achievements and in 2021, MyGug made the shortlist for the National Startup Awards.

In 2022, they were accepted into the Harvard Climate Entrepreneurs Circle, became a Seedcorn finalist, and were awarded \$10,000 in AWS Credits.

They've received Local Enterprise Office and microfunding finance of €60,000 and qualified as an Enterprise Ireland High Potential Startup.

In 2023, MyGug were named a Climate Tech Innovator and won the UCD Second Accelerator Programme for AgTech and Agri-food Start-ups, and later were awarded, Irish Times Business People of the Month November and were Winners in the Sustainability Category of the Irish Times Innovation Awards.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [Twitter / X](#)
- [YouTube](#)





ABOUT

Based in Co. Meath, Meade Farm Group grow, package and distribute potatoes and other fruits and vegetables. Due to hard work and dedication and importantly their love of their family farm business, it has grown from being a small potato supplier to local shops to a grower, packer and distributor of an array of vegetables to retailers nationwide. Founder, Philip Sr. believes that bringing people good quality food to eat is as noble a vocation as there is. The next generation of Meades is following in his footsteps; they still believe that bringing premium quality, sustainable produce to consumers is a truly worthy enterprise.



INNOVATION/TECHNOLOGICAL APPROACH

They are a zero-food waste facility due to the successful implementation of a management strategy that channels impaired produce to processing/peeling lines, community foodbanks, stock feed, and co-products, like starch production. The company has been able to reduce the environmental impact of the operation by reducing wastage and ensuring that any waste has an end-of-life destination that maximises the value throughout the supply chain.

Meade Farm Group was aware that approximately 30% of the crop brought in was being lost before, or during, production, so the company found a new prepared foods division to attempt to valorise these wastes. As a result, the company began producing large volumes of low value grey starch from peeling potatoes. After dehydration of the potatoes and other exercises to identify potential products for the animal feed market proved commercially unviable, Meade Farm Group refocused and increased the investment and upgraded to a starch extractor to produce a food-grade native potato starch, which has been a successful venture. The new product creates a revenue stream but also supports the value of the company's class 1 products and creates extra value for the producer. It provides a food-grade starch that can be sold on the open market (Ireland's ONLY indigenous starch ingredient) or used in other complementary products.

All of Meade Food Group's surplus to requirements produce went for stock feed and to community foodbanks like FoodCloud before they invested in new technology to supply potato starch from their food waste also. They are now a zero-waste facility



MEADE FARM



SUSTAINABILITY

While they have always been environmentally responsible, Meade Farm has joined Bord Bia's [Origin Green Programme](#) to formally commit to a sustainability plan. Their sustainability action plan involves setting realistic, proactive policies that will increase their efficiency and best position their company to look forward to a healthy future - environmentally, economically and socially. The fundamentals of their sustainability plan are organised into Raw Material Sourcing, Manufacturing and Social Sustainability.

On-farm crop loss is another area where they felt there were better alternatives. For many years, the crops that fell through the harvester were left in the field to be used as fertiliser for the next crop, usually grass or spring barley. The Meades were approached by their long-time collaborator FoodCloud in 2016 to help them set up a gleaning network and were delighted to support them as it would help reduce on-farm crop loss. Gleaning is where produce left behind in the field is picked up and distributed to those in need. They have since introduced new growers to the network, new corporate volunteer groups and trialed gleaning with local schools. This educates young people early about waste prevention, agriculture and volunteerism, so it is a win-win all around.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [Twitter / X](#)
- [YouTube](#)
- [LinkedIn](#)



AWARDS/SUCCESS

Meade Farm always strive to offer the best quality produce and to be as sustainable as possible.

Receiving industry recognition for their efforts in these areas is always a bonus. Some of their awards include:

- Ulster Bank Agribusiness of the Year Award
- Food and Drink Business Awards - Sustainable Factory of the Year
- Energia Food & Drink - Family Business of the Year Award
- Green Food & Beverage Awards - Best Sustainable Packaging Strategy
- Green Food & Beverage Awards - CSR Initiative of the Year in partnership with Food Cloud





ABOUT

Identifying a solution to food waste, Brazilian-native chef Giselle Makinde founded Cream of the Crop in 2020. It is a Dublin-based sustainable food company specialising in Artisan Gelatos operating with a zero waste, more taste ethos. The company was born from the idea of saving “wonky food”, perfectly edible food that would normally be thrown out as it is not aesthetically pleasing and producing a delicious product ready for sale at the supermarket. As the holder of a National Enterprise Award - GREEN SUSTAINABILITY 2023, they have committed to continue improving and fighting their zero-waste battle.



INNOVATION/TECHNOLOGICAL APPROACH

At Cream of the Crop, the surplus food ingredients that would otherwise end up in landfills are rescued and processed and transformed into delicious Gelato and Sorbets or chocolate-covered treats. They do this without the use of artificial flavours, colours or additives. It's their daily mission that seeks to offer amazing products and fight for a better world! So far 20,000kg of food has been rescued in their battle against food waste, and that is in only 2 years and starting as a small-scale business.



SUSTAINABILITY

Environmental and sustainable development is at the heart of everything Giselle and Cream of the Crop do. Her entire business is built on creating a circular economy. They avoid food wastage and maximise in a way that explains Zero waste, More Taste. Ireland is an exceptionally large Banana importer (in 2021 they were the 39th largest importer of Bananas in the world) this is due to the fact that a large ripening and distribution centre is based just outside the capital (Fyffes). However, this also means that often there is a significant amount of bananas that have the potential to end up as food waste. To tackle this issue, Cream of the Crop dries the surplus bananas they receive and then coats them in high-quality chocolate, giving an extended life and value to the ill-fated bananas all while packaged in compostable packaging so as not to add to the waste problem.



CLICK
TO
VIEW

CREAM OF THE CROP



AWARDS/SUCCESS

Not only does Cream of the Crop founder, champion at avoiding food waste she also strives to use Irish or local ingredients whenever possible, especially when it comes to dairy and non-dairy (they use Flahavan's oat milk) and some fruits like strawberry. However, because the main idea of their product is working with surpluses, basically everything that they source (Irish or non-Irish) is welcome. However the biggest measure of impact can be outlined as this, they have rescued >32,000kg of fruit from going to landfill.

Other achievements include: Cream of the Crop Food won the Green Sustainability Award at the National Enterprise Awards



*NO GOOD
FOOD
SHOULD BE
WASTE*

USEFUL LINKS

- [Instagram](#)
- [Facebook](#)
- [LinkedIn](#)





ABOUT

Millstream Recycling Ltd began life in 1995 as Millstream Power Ltd. Founder, Robert Hogg noticed that Irish Food factories were sending enormous amounts of waste food to landfill. There were 2 major costs to this; the dumping cost absorbed by the factory and the huge environmental cost of 1000's of tonnes of food waste being buried beneath the earth's surface. He knew much of this "waste" was not really waste at all, it had a value, a value as animal feed, biogas, fuel and compost. And thus, Millstream was formed, the first of its kind in Ireland.

Today, Millstream Recycling specialise in the removal of waste food and drink, by-products, downgrade, damaged and out-of-date materials from manufacturing, wholesale and retail premises. Products collected are converted into animal feeds, biogas, fuels and compost.



INNOVATION/TECHNOLOGICAL APPROACH

The Food Waste Hierarchy is the core of the Millstream Recycling philosophy. Whereas other food recyclers may primarily send material for anaerobic digestion or pet food, their first port of call is Animal Feed applications. This is more beneficial in that the food is given a longer life or optimised and is more environmentally friendly in the process.

At Millstream they believe there is no one size fits all in the collection of surplus food. By assessing the client's current situation and identifying their individual needs, they tailor a collection solution specifically for each client to ensure the most efficient removal of material. If the material collected is suitable for further use as animal feed, they innovatively convert the food waste into high-quality animal feed through advanced processing technology. They use a state-of-the-art drying system that safely dehydrates surplus food, preserving its nutritional value while extending its shelf life. This technology ensures that the feed meets strict safety standards, making it suitable for livestock consumption. They then mill the some dried material. Or the sell-on the recovered materials to Mills, Feed producers or Farmers. Their approach supports a circular economy by reducing food waste and turning it into a valuable resource.

Millstream Recycling use a fully integrated Business management system that provides full traceability from collection to end-user

The company is also proud of the fact that they are powered by their own Solar panels and water turbines.



MILLSTREAM RECYCLING

*much of this
“waste” was not
really waste at
all, it had a
value*

- Founder, Robert Hogg



SUSTAINABILITY

Millstream Recycling is excelling in sustainability by turning food waste into valuable animal feed, reducing landfill waste and supporting a circular economy. Their process also ensures that the material source companies are meeting their sustainability challenges and regulations. Their food waste hierarchy approach minimises environmental impact but also provides a sustainable solution for managing food industry waste, contributing positively to the broader sustainability goals of reducing waste and promoting resource efficiency.



AWARDS/SUCCESS

Millstream Recycling places great importance on adhering to certifications and regulatory standards, which ensures the safety and quality of their animal feed products.

They are certified by the Department of Agriculture, Food and the Marine (DAFM) and operate under strict EU regulations, including the Animal By-Products Regulations and the Animal Feed Hygiene Regulation. These credentials demonstrate their commitment to maintaining high industry standards, ensuring that their processes are safe, sustainable, and environmentally responsible, thereby building trust with their clients and contributing to a circular economy.

USEFUL LINKS

- [Website](#)
- [Facebook](#)
- [LinkedIn](#)





ABOUT

FoodCloud is a social enterprise that is addressing food loss and waste, as well as food poverty through surplus food redistribution. FoodCloud was established in 2013 by Iseult Ward and Aoibheann O'Brien, who have a shared vision of no good food going to waste.



INNOVATION/TECHNOLOGICAL APPROACH

FoodCloud's business model is based upon an innovative platform that operates by facilitating the donation of surplus food from businesses to charities through a streamlined and efficient process. Here's how it works:

Business Registration: Businesses, such as supermarkets, food producers, and retailers, register on the FoodCloud platform. These businesses typically have surplus food that is still safe and nutritious but cannot be sold due to overproduction, close-to-expiry dates, or cosmetic imperfections.

Food Donation Alerts: When a business has surplus food available, they use the FoodCloud platform to post a donation alert. This alert includes details about the type and quantity of food, as well as the location and time frame for collection.

Charity Matching: Charities and community groups that have also registered on the platform receive notifications of available food donations in their area. They can then choose to accept the donation based on their needs and capacity to distribute the food.

Collection and Distribution: Once a charity accepts a donation, they arrange for the collection of the food directly from the business. This ensures that the food reaches those in need quickly, minimising waste and maximising its impact.

Tracking and Reporting: The platform also tracks all transactions, providing businesses with reports on the amount of food donated, the environmental impact (e.g., reduced carbon emissions), and the social impact (e.g., the number of meals provided). This data is useful for businesses to demonstrate their commitment to sustainability and corporate social responsibility.

FoodCloud's platform therefore leverages technology to create a simple, scalable solution that addresses both food waste and food insecurity, benefiting both businesses and communities. However, along with this they also use their platform as a digital hub for knowledge sharing. They have created and developed a diverse array of resources designed to enlighten, engage, and encourage positive change in our communities. Their comprehensive range of educational materials is curated to suit learners of all levels. Whether for a curious individual, a community group/nonprofit, a food retailer, or a passionate advocate, they have something relevant for all.

FOODCLOUD



SUSTAINABILITY

FoodCloud's impact on sustainability is substantial, particularly in its efforts to reduce food waste and minimise environmental harm. As of recent reports, FoodCloud has successfully redistributed almost 300 million meals, equivalent to saving over 100,000 tonnes of food from going to waste. This achievement translates to a reduction of over 382,000 tonnes of CO₂ equivalent emissions, showcasing their role in mitigating the environmental impacts associated with food waste.

By redirecting surplus food from businesses to charities, FoodCloud not only conserves the resources involved in food production—such as water, energy, and labour—but also prevents the generation of greenhouse gases that would result from food decomposing in landfills. Their efforts are a prime example of how leveraging technology can create a more sustainable food system and contribute to the fight against climate change.



AWARDS/SUCCESS

FoodCloud has received several significant awards over the past decade, highlighting its impact and innovation in reducing food waste and promoting sustainability:

- **Impact Award from Social Entrepreneurs Ireland (2014):** This award recognized FoodCloud's innovative approach to tackling food waste and its potential for creating substantial social impact across Ireland.
- **Rethink Ireland Social Enterprise Development Fund Award (2018):** FoodCloud received this award as part of a partnership with Rethink Ireland, which supports high-potential social enterprises across the country.
- **Women of Concern Award (2018):** Co-founder Iseult Ward was honoured with this inaugural award, which recognises female leaders who make significant contributions to social justice and gender equality.
- **Partnership Awards:** FoodCloud has been recognised multiple times for its successful partnerships with major retailers like Tesco, Aldi, and Lidl, which have been instrumental in expanding their food redistribution efforts across Ireland and the UK.



USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [LinkedIn](#)
- [Twitter / X](#)





ABOUT

Too Good To Go is a social impact company that aims to reduce food waste by connecting consumers with restaurants, cafes, and stores that have surplus food at the end of the day. Through their app, users can purchase "Surprise Bags" of unsold food at a significantly reduced price, preventing it from being discarded. This not only helps to reduce food waste but also makes food more accessible and affordable for consumers.

Too Good To Go operates in several countries, including Ireland, and has a strong focus on sustainability and community engagement. The company is part of a broader movement to promote a circular economy by turning potential waste into a valuable resource. Through their efforts, Too Good To Go has saved millions of meals from going to waste, contributing to the global fight against food waste and environmental impact.



INNOVATION/TECHNOLOGICAL APPROACH

Too Good To Go employs several innovative and technological approaches to combat food waste including:

Mobile App Platform: The core of Too Good To Go's innovation lies in its mobile app, which connects users with local businesses that have surplus food. The app uses geolocation technology to show users nearby restaurants, cafes, and stores offering "Surprise Bags" of unsold food at discounted prices. This makes it easy for consumers to find deals and helps businesses efficiently manage their excess inventory.

Data Analytics: Too Good To Go leverages data analytics to optimise the food waste reduction process. By analysing data on consumer behaviour, food waste patterns, and business operations, they help participating businesses better predict surplus, thus reducing waste before it happens.

Real-Time Inventory Updates: The app allows businesses to update their surplus food availability in real-time. This ensures that customers always have access to the latest information on what's available, maximising the chances of selling surplus food before it goes to waste.

Sustainability Tracking: Users of the app can track the environmental impact of their purchases, such as the amount of CO₂ emissions saved by rescuing food. This feature encourages continued participation by highlighting the positive impact of their actions on the planet.

Integration with POS Systems: Too Good To Go integrates with businesses' point-of-sale (POS) systems to streamline the process of identifying and listing surplus food. This reduces the manual effort required by businesses to participate in the platform, making it easier for them to contribute to food waste reduction.

TOO GOOD TO GO



SUSTAINABILITY

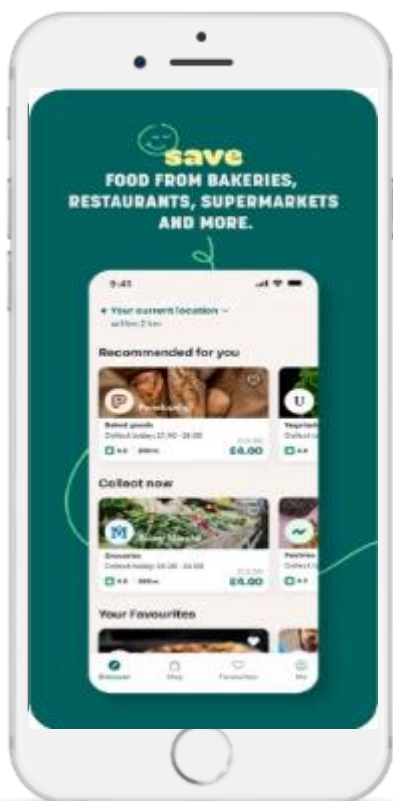
Too Good To Go is making significant strides in sustainability by tackling food waste, a major environmental issue. The platform rescues millions of meals from being wasted, significantly reducing CO₂ emissions and conserving resources. By promoting a circular economy, the company ensures that surplus food is redistributed rather than discarded, helping both businesses and the environment.

Too Good To Go also raises awareness about food waste through its app, educating users on the impact of their actions. Operating in multiple countries, the company mobilises millions of people and thousands of businesses in the fight against food waste, amplifying its sustainability impact globally. These efforts make Too Good To Go a leader in sustainability, combining innovative technology with broad community engagement to reduce food waste on a global scale.



AWARDS/SUCCESS

B Corp Certification: Too Good To Go is a certified B Corporation, meaning it meets high standards of social and environmental performance, accountability, and transparency. The real success story though lies in the numbers. Since its launch, Too Good To Go has expanded to 17 countries and saved over 330 million meals from going to waste, they have 95 million users and 160,000 Business partners demonstrating its global impact and success in sustainability.



USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [LinkedIn](#)
- [Twitter / X](#)





ESCATAFOOD



ABOUT

The anchovy industry generates a significant amount of waste during the salting and curing process. Catalan chef Pere Planagumà has found a way to transform the discarded parts of the process, like guts, bones, blood, and trimmings, into flavourful products like modern 'garum'. Instead of the traditionally practice of discarding these parts or using them for fishmeal and animal feed, these by-products are now utilised to create a gastronomic treasure that captures the essence of the Mediterranean.



INNOVATION/TECHNOLOGICAL APPROACH

Anchovy fillet production waste products are now transformed into a range of new, sustainable Mediterranean flavours. These flavours provide pure glutamic acid and enhance the taste of food. Chefs can create more unique and authentic dishes with intensified flavours using these products.

The raw material, *Engraulis encrasicolus*, is decapitated, and placed in blue drums with brine, and anchovy. The drum is closed for several months to allow the process of enzymatic degradation of the protein to occur, then the fish is recovered and the remaining concoction is now used to create a contemporary garum.



SUSTAINABILITY

Escatafood ensures the source of secondary products from fish salting without putting pressure on its suppliers, promoting the circular economy's essence.



AWARDS/SUCCESS

Pere Planagumà, a renowned Spanish chef, has revolutionised the non-televised food industry by using sustainable ingredients. His innovative firm, Escatafood, is now present in France, Germany, Italy, Norway, and England. Planagumà also serves as executive chef at Pilar y Juanito in Valencia and plans to start consulting in Dubai.

USEFUL LINKS



- [Instagram](#)
- [El Pais Article](#)
- [An interesting Article](#)





VÄCKA



ABOUT

Ana Luz and Maxime Boniface founded a foodtech company in Barcelona, Spain, focusing on innovative vegetable cheese production using olive oil and fermented melon seed milk. Their products, Mözza and Pumpkin Cheddar, have an improved taste and exhibit sustainability, and valorisation of Food waste in a circular way.



INNOVATION/TECHNOLOGICAL APPROACH

Väcka uses Melon seeds to extract a vegetable drink as an alternative to animal milk to use in its melting products, and to gradually incorporate it into all its offerings.

Melon seeds are used in Väcka's pre-prepared convenience food business to create a vegetable drink with a milky taste, flavours, and nutrients. The seeds also provide a higher melting capacity than almond-based vegetable drinks. Väcka's innovative R&D approach focuses on changing the status quo of plant-derived fermentation, unlocking the potential of unutilised waste-streams. They collaborate with institutes and universities to access a large microbiology biobank, identifying microorganisms capable of fermenting and processing plant-derived substrates and proteins.

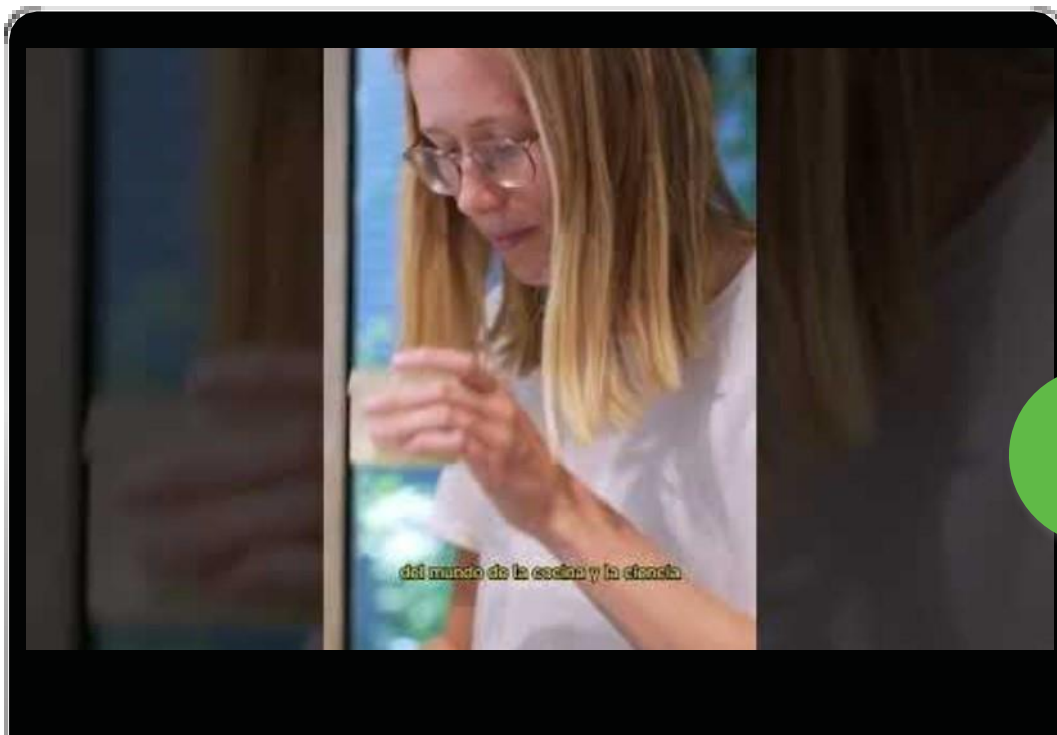


SUSTAINABILITY

Väcka, the vegan cheese company, has partnered with Peris to create a new supply chain. The company's CEO, Luz Sanz, believes that Peris shares Väcka's vision of sustainability and environmental responsibility. By revaluing by-products from quality food, Väcka contributes to mitigating environmental problems and providing value and nutrition. As a food technology start-up, Väcka seeks investment partners who share their values and vision, focusing on financial, production, and distribution layers to make a sustainable impact on the food supply.



VÄCKA



AWARDS/SUCCESS

In five years, Väcka aims to become market leaders in cheese alternatives, generating 1.1 million euros in February 2023. Their ambition is to reach the maximum number of people through retail chains and foodservice and aim to be heard in all languages and seen as a quality supplier.



USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [The Vegconomist Article](#)
- [An interesting Article](#)





paturpat[®]

procesados de patata by **udapa**



ABOUT

Paturpat was created in 2016 by Udapa and it is a cooperative made up of agricultural producers, business managers and workers, to facilitate the use of potatoes with high culinary quality, but with a less attractive visual appearance.

Paturpat develops ready-to-eat products with these 'non-attractive' potatoes, the so-called 5th range products for retail, horeca and the food industry. Since its creation they started with the premise of manufacturing ready-to-eat potato products with high organoleptic quality standards, realising that consumers demand quick and easy-to-prepare foods, but are not willing to lose the value of traditional cuisine.

In 2020, a new brand was born UDAPA FÁCILA, a range of convenience products tasty, quick and easy to use. In 2024 they expect to make new investments to increase their industrial capacity.



INNOVATION/TECHNOLOGICAL APPROACH

In 1993, Udapa, a cooperative project combining agricultural producers', workers, and credit cooperatives, was established to enhance and streamline the production and marketing of fresh potatoes.

In 2016, Paturpat was established through extensive research and collaboration with agri-food technology centers to cater to evolving consumer trends. This company with cooperative values, emphasises human involvement and circular economy principles. It adapts to market needs and trends, setting a benchmark for innovation and sustainability as its products made by the cooperative from Álava not only offer convenience and health benefits to consumers, **but also tackle the problem of food waste, revaluing those tubers which, although nutritious, are discarded because they do not meet aesthetic standards.**

The creation of Paturpat has generated a significant economic impact, evidenced by the increase in employment generation and business growth achieved in a very short period of time. The Udapa subsidiary has demonstrated its ability to identify new market opportunities, expanding its presence both in the food industry sector and the HORECA channel, as well as in retail with the Udapa fácil brand.



SUSTAINABILITY

Paturpat, which produces products for convenience and health, has significantly impacted the economy by increasing employment and business growth. The Udapa subsidiary has identified new market opportunities in the food industry, HORECA channel, and retail with the Udapa fácil brand

PATURPAT



AWARDS/SUCCESS

Paturpat won the Lanzadera Prize at Fruit Attraction in 2017, recognising its outstanding innovation and entrepreneurship project in the fruit and vegetable sector.

Paturpat receives BTEM 2024 award in the category of Market Innovation for its innovative ready-to-eat 5th range potato, addressing food waste and providing convenience and health benefits while repurposing nutritious tubers that are often discarded.

The jury praised Paturpat's economic impact, citing increased employment and business growth. Udapa's subsidiary identified new market opportunities in food, HORECA, and retail, demonstrating its ability to identify new market opportunities.

Paturpat's growth projections until 2026 indicate potential and ambition, with a turnover of over 20 million euros since its creation seven years ago.

The BTEM Awards

BTEM awards, promoted by BASQUE FOOD CLUSTER and AZTI, acknowledge the innovative efforts of Basque food companies in the region.



USEFUL LINKS

- [Paturpat Website](#)
- [LinkedIn](#)
- [Facebook](#)
- [Udapa Website](#)





ABOUT

DeliKatetxe is a local company selling broths for the hotel and catering trade in Basque Country and Navarre, available in shops, butcheries, charcuteries, gourmet shops, and supermarkets. All products are made with free-range hens from Basque and Navarrese farmhouses – Baserritarras.



INNOVATION/TECHNOLOGICAL APPROACH

Baserritarras (*Basque farmers in the Basque language*) breed hens with special care (on small farms with natural feed and dedication), offering the [Eusko Label](#), [Reyno Gourmet](#), and organic eggs. The **Eusko Label** is a mark of guarantee and superior quality whose graphic sign is the K and is used to identify agri-food products produced, and processed in the Autonomous Community of Euskadi, whose quality, specificity or singularity exceeds the general average.

In 2019, DeliKatetxe, a food processing cooperative, aimed to capitalise on the limited commercial sale of chicken meat after the egg-laying cycle. It is a free-range hen meat company, that was founded after a Baserritarra woman recommended it. The co-founder, Edurne García Arrieta, transformed the hens into chicken broth and started a production factory in Elorrio in 2021.

The Hen, once a highly prized meat, had disappeared from our kitchens due to the cost-effectiveness of large-scale chicken farming. Hens, with their firmer nature and longer cooking times, result in a nutritious, high-protein meat with a rich flavour profile. DeliKatetxe offers slow-cooked, free-range chicken from local family farms, suitable for enhancing dishes or enjoying on its own. They use a natural skim method to create clarified broths, which has gained attention from brands, and they now distribute chicken and meat consommé under the Eroski Seleqtia brand, a sterilised, dry product that doesn't need cold storage. The chicken off-cuts are used for various products, including confits, meatballs, sauces, and bone broth for pets. After obtaining broth for human consumption, bones are further treated for over 20 hours to create pet broth.



DELIKATETXE



SUSTAINABILITY

The company sources ingredients from local producers, baserri, who raise animals with care, respecting the environment, and use meat and vegetables from factories in Elorrio, certified for animal welfare.

We use 100% free-range hens with the Eusko Label, organic, or Reyno Gourmet eggs, raised on local farms with pasture access and certified in animal welfare.

A large factory in the Basque Country generates energy using solar panels and reduces their energy consumption through innovative production processes. They source the chickens/hens from small producers and use solar-powered pots to cook chicken, meat, and vegetables for a tasty broth, promoting a circular economy and traditional recipes, and establishing a cooperative for this ambitious project.

Thanks to this combination of tradition and modernity, they can produce their products using as few resources as possible.

AWARDS/SUCCESS



In 2024, Eroski Seleqtia started to distribute chicken and meat consommé, a sterilised, dry product developed as part of the Straight2Market project by EIT Food, a leading European innovation community in the agri-food sector.

DeliKatetxe has launched Weso, a dog and cat food line with bone broth, aiming to improve digestion and joint health. The brand is now distributed in Spain and Portugal, with potential exports to Europe, the US, and South America.

The co-founder of DeliKatetxe plans to collaborate with Leartiker to create chicken pâté, produce pickled chicken legs with local organic vinegar producer, and produce vegetable broths for Weso brand. They aim to grow organically alongside their projects.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [Article 1](#)
- [Article 2](#)





ABOUT

Calor Renove belongs to an energy group with more than 25 years of experience related to the distribution of oil energies. It was founded in 2012 by José Domínguez Cazorla in Cordoba, Spain, and is exclusively dedicated to renewable and ecological energies, respectful of the environment, reducing our dependence on external sources and providing considerable economic savings while also protecting Spain's forest resources.



INNOVATION/TECHNOLOGICAL APPROACH

The company focuses on the supply and installation of various biomass heating systems such as the pellet stoves, a popular form of biomass heating. Pellet stoves burn pellets made from compressed organic waste materials like wood shavings, sawdust, and other biomass residues such as almond husks and olive pits. These stoves are designed to be efficient and environmentally friendly, providing a sustainable heating solution.

Calor Renove also offers a range of biomass fuels, which are essential for operating their heating systems and these include:

- 1. Wood Pellets:** Made from compressed sawdust obtained as waste from the timber industry, forest cleaning, pruning, etc., they are a common and efficient biomass fuel. They are known for their high energy density and low moisture content, which makes them an efficient source of heat.
- 2. Olive stones:** Olive stones, are a by-product of olive oil production. They are valued for their high calorific value and are a sustainable way to repurpose agricultural waste. The energy obtained from Olive pits costs 90% less than that of diesel. Its supply is guaranteed due to the large production of olives in the Andalusian agricultural sector.
- 3. Almond Shells:** Almond shells, which are typically discarded as agricultural waste, can also be used as biomass fuel. They provide an efficient, renewable and eco-friendly heating option, leveraging local agricultural by-products to generate energy.



CALOR RENOVE

Turn a tree into firewood and it may burn for you, but it will no longer blossom or produce fruit.

- Rabindranath Tagore

USEFUL LINKS

- [Website](#)
- [Twitter / X](#)
- [Facebook](#)



SUSTAINABILITY

Calor Renove is a company committed to sustainability, particularly in the production of biomass fuels. Their sustainability efforts include: **Sustainable Sourcing:** Calor Renove prioritises the use of locally sourced biomass materials, reducing transportation emissions and supporting local economies. They use residual biomass from agricultural and forestry activities, ensuring that the raw materials are renewable and do not contribute to deforestation.

Reduction of Carbon Footprint: The production process at Calor Renove is designed to minimise carbon emissions. By using biomass, the company contributes to reducing the overall carbon footprint compared to fossil fuels.

Energy Efficiency: They have invested in modern, energy-efficient production facilities. These facilities are optimised to reduce energy consumption during the production of biomass fuels, further enhancing the sustainability of their operations.

Waste Minimisation: This is done throughout its production process. By using by-products and ensuring that every part of the biomass is used effectively, Calor Renove reduces the amount of waste generated and promotes a circular economy.

Community Engagement and Education: Calor Renove actively engages with the community to promote the benefits of biomass fuels and educate the public about sustainable energy practices. The company supports initiatives that encourage the adoption of renewable energy sources and works to raise awareness about the environmental impact of energy choices.



AWARDS/SUCCESS

Certifications and Compliance: The company adheres to strict environmental regulations and holds certifications that verify the sustainability of their biomass products. These certifications provide assurance to consumers that Calor Renove's products are environmentally friendly and produced responsibly and this resonates well with the growing demand for sustainable energy solutions in Spain.



Zelai Txiki



ABOUT

Zelai Txiki, located in the hills above the Gros neighborhood in Donostia/San Sebastián, is a well-regarded restaurant known for its Basque cuisine and spectacular city views from its terrace. Under the direction of chef Juan Carlos Caro, Zelai Txiki offers signature cuisine that integrates sustainable practices. The menu features standout dishes such as creamy rice with clams, grilled wild turbot with garlic and olive oil, and Segovia-style suckling pig. These dishes, along with the scenic dining experience, keep locals and visitors coming back.



INNOVATION/TECHNOLOGICAL APPROACH

The Zelai Txiki restaurant was transformed into a zero-waste establishment in the wake of the pandemic, thanks to a deep reflection on how to improve during the temporary closure. With the help of colleagues in the sector, they implemented strategies to minimise waste and maximise sustainability.

The **practices** that benefit both the environment and the business are:

- Own vegetable garden: they reclaimed vacant land to grow their own vegetables, managed according to Michael Gros' lunar calendar.
- Rainwater harvesting: Implemented a system to collect and store rainwater.
- Solar panels: These panels will cover 35-40% of the electricity consumption, further reducing energy expenditure and carbon footprint.
- Wood and pellet oven: They use a wood-fired oven that runs on pellets, using the residual heat for low-temperature cooking and water heating.
- Energy efficiency: Installation of LED luminaires to reduce electricity consumption.
- Recycling and reuse: They recycle used oil to make soap, use ashes from the grill to produce bleach and separate and recycle plastics, cardboard and glass.
- Composting: They use vegetable waste to create compost, enriching the soil in their vegetable garden. Their coffee grinds are also used in the garden.
- Organic waste management: Agreement with the municipality for the proper management of fish and meat waste.
- Animal feed: Bread and vegetable leftovers are fed to the chickens.

They also employ **innovative techniques** to enhance sustainability, such as:

- reducing water usage through advanced cooking methods.
- innovating in food preservation and preparation to minimize waste.
- collaborating with scientists and environmentalists to improve practices.

The Zelai Txiki team has worked hard to change their mindset and ensure the correct implementation of these practices, facing challenges such as bureaucracy but moving steadily towards their goals of sustainability and efficiency.

ZELAI TXIKI



SUSTAINABILITY

The restaurant **demonstrates** a strong commitment to sustainability, focusing on environmental responsibility and sustainable gastronomy.

They **implement** practices that reduce waste, lower carbon footprints, and promote the use of local and organic ingredients. This includes:

- Sourcing ingredients locally to reduce transportation emissions.
- Using seasonal produce to minimize environmental impact.
- Employing waste reduction techniques, such as composting and recycling.
- Utilising energy-efficient kitchen equipment and sustainable energy sources.

They **engage** in ethical practices, such as fair treatment of staff, sourcing ingredients from suppliers who prioritise animal welfare, and engage with the local community to support sustainable food systems.

They educate their customers and the public about sustainability by

- providing information about the sourcing of their ingredients.
- sharing their sustainability initiatives and goals with patrons.
- hosting workshops or events to raise awareness about sustainable practices.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [Twitter / X](#)
- [Vimeo](#)



AWARDS/SUCCESS

It received a Green Michelin Star in 2024, an accolade introduced by the Michelin Guide to recognize restaurants that are at the forefront of sustainable practices. It indicates that a restaurant not only excels in culinary excellence but also leads the way in promoting and practicing sustainability. It is a mark of distinction that highlights the restaurant's dedication to preserving the environment and supporting sustainable food systems as the Zelai Txiki restaurant.





ABOUT

Ley® is an Italian brand from the sustainable company *Circular Food*, a company whose goal is to transform waste materials into healthy and tasty food products. *Circular Food* firmly believes in upcycling, seeing it as an opportunity to 'do more with less' by making a contribution to the health of the planet and people, ensuring food security and saving the planet's limited resources. The most difficult challenge for **Circular Food** right now is to educate the public and reassure them that products derived from food waste are good and good for people and the environment, leading to a more sustainable consumption model for our civilisation. The end of one cycle can be the beginning of the next. LEY is proof of this



INNOVATION/TECHNOLOGICAL APPROACH

Using a patented process, they dry spent brewers' grains to produce a flour that contains a high percentage of fiber, is rich in protein and is a source of iron. To produce Ley they collect wet spent grain, consisting of fermented barley & malt, thus recovering a processing residue and helping breweries dispose of it.

Using an innovative drying process, *Circular Food* significantly reduce processing time and costs, ensuring that the organoleptic properties of the product are fully respected and contributing to the well-being of the planet.

Once milled, the beer thresh is transformed into an excellent flour ready to become a healthy and innovative ingredient for making bread, cookies, pizza, pasta and other recipes with an unmistakable taste



SUSTAINABILITY

As its name suggests, *Circular Food* is based on the concept of circularity. It is an anti-waste, sustainable, circular and cooperative method that revolves around the desire to put food industry by-products that still have a lot of value or worth back into the food chain.





AWARDS/SUCCESS

The success lies not only in the idea, already praiseworthy in itself, of giving a second life to the residues of malted barley that fermentation has not transformed into beer, but also in the use of technologically advanced plants capable of radically changing the traditional production model by reducing production times and enhancing the organoleptic qualities of the product, while maintaining its nutritional values intact. All this with a 60% saving in energy requirements, reduced CO₂ impact, recovery of extracted water, and no use of fossil fuels.



USEFUL LINKS



- [Website](#)
- [Facebook](#)
- [Instagram](#)
- [LinkedIn](#)





BIOVA PROJECT



ABOUT

Biova project is an Italian innovative start-up that focuses on reducing food waste by creating products that follow the principles of the circular economy and upcycling. The business is built on the model where it collects unsold bread (pasta pulp or even rice) from large-scale retail outlets or from local entities with which it has established a relationship and uses it to replace up to 30 percent of the raw material traditionally used to make beer: barley malt. The beer is brewed in existing local breweries and co-branded through the same supply channels as unsold bread, with a label indicating the origin of the bread used. But the circle does not end there, as the Biova Project has found ways to also reuse beer waste to produce snacks and to make the packaging for the products themselves.



INNOVATION/TECHNOLOGICAL APPROACH

For every 150 kilogrammes of bread recovered, they produce 2,500 liters of premium beer at their nearest partner brewery, saving 30% of the needed raw material barley malt, and saving 1,365 kilograms of CO₂ emissions to the environment.

After giving this fantastic serving, the remaining barley malt is called "thresh" and is still wonderfully full of protein, fiber, and minerals, but much lower in sugar. In this way Ri-Snack wins on all fronts: it is more sustainable (since it uses 30% less raw materials), it is healthier, it is NEVER fried, and it tastes great! A win-win strategy through and through! From waste new value is being generated, this is the ethos of Biova as they transform food surplus into products with new value first the beer, then the snacks. The Biova Project's Ri-Snack™ is a crunchy barley malt snack.

In addition to the snacks, they have also thought of reusing the spent grains, which are brewing waste, in another way, to make bioplastic and biopolymers with which to make the labels or bowls that will contain the snacks. They are well underway: the study of the material is already completed, it has obtained food certification, and the mold is ready. They try to do as much food upcycling as possible with a type of reuse that includes unexpected contexts.



BIOVA PROJECT



SUSTAINABILITY

Bread is much more efficient than malt because it replaces a very energy-intensive raw material. So, by using it in its "second life," that is, when it has now become waste for the system, Biova go on to recover a very high source of sugars. They can therefore say that they recover a real source of energy, simply by extending the life cycle of a food. By reducing primary barley malt there is also financial saving, since the barley has to be grown, with related expenditures of land, water and energy, transported (it is often sent to Germany for malting even when it is grown in Italy) and packaged. Even the activity of recovering bread, which has to be processed so that it can be preserved, stored, made suitable for brewing, shredded and then used, is a very short supply chain because it takes place in centers set up in the local area and has a limited impact on emissions.

A circular economy model: beer can be made from bread, and this beer is repurposed to those same entities that have provided the surplus bread and thus are able to communicate their participation in a project of reuse, upcycling and reduction of raw material use through co-branding activities thus creates community awareness.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
- [Facebook](#)
- [YouTube](#)
- [LinkedIn](#)



AWARDS/SUCCESS

Circularity goals achieved by Biova Project in one year of operations are: 4,500 kilograms of CO₂ saved from managing unsold bread; 5,000 kilograms of CO₂ saved from barley malt reduction; 3,000 kilograms of unsold bread recovered; 3,000 euros donated to nonprofit organizations; 54.20 tons of bottles and cans recycled; 1,076 euros of public money saved from not sending waste to landfills.

The company is now a certified B Corp with a score of 98.3. This means they have been verified by B Lab to meet high standards of social and environmental performance, transparency, and accountability.





ORANGE FIBER



ABOUT

Orange Fiber creates sustainable and innovative fashion materials from by-products of the citrus juice industry, using innovative and patented processes and collaborating with industry leaders. They strive to create good circular practices throughout the fashion textile supply chain, helping to shape a new concept of luxury based on an ethical and sustainable lifestyle.



INNOVATION/TECHNOLOGICAL APPROACH

Upcycling: TENCEL™ & Orange Fiber

Orange Fiber and the Lenzing Group, the world's leading producer of specialty textile fibres from wood, collaborate to produce the first TENCEL™ branded lyocell fibre made from orange cellulose and wood cellulose. Produced using the same award-winning closed-loop production process as standard TENCEL™ Lyocell fibres, TENCEL™ Limited Edition x Orange Fiber helps promote sustainability in the textile and apparel supply chain and redefine the boundaries of innovation in cellulosic fibre production.

At the plants in Sicily, the company derives cellulose from citrus pulp, the disposal of which would instead have a significant economic and environmental cost. Thanks to a partnership with the Lenzing Group, the citrus pulp is processed into the textile fiber that is the beating heart of this circular fabrics: the TENCEL™ Limited Edition x Orange Fiber. Orange Fiber's cellulose extraction patent, filed in 2014 in Italy, has also been extended to major citrus juice producing countries with the aim of applying their technology in the most promising markets, thus increasing its impact. In 2014, orange fiber registered their trademark, which identifies products containing their exclusive yarns and fabrics. Through dedicated labels, end customers can recognise garments and furnishings from brands that have chosen this citrus fabrics for their creations.



ORANGE FIBER



SUSTAINABILITY

Since their beginning Orange Fiber's mission has been to create circular fabrics from citrus fruit waste from Italy, to contribute actively to an increasingly environmentally friendly future of the textile industry. The "pastazzo" - i.e. what remains after the production of citrus juice - accounts for 60 per cent of the weight of the fresh fruit and through their patented processes and transparent supply chain is transformed into yarn and fabric for brands and designers who care about sustainability.



AWARDS/SUCCESS

From its foundation in 2014 to today, Orange Fiber has achieved major milestones and has grown from a startup into an innovative SME recognised internationally for its commitment to innovative and sustainable textile production. Over the years, the company has received numerous awards and recognitions including the Social Innovation Tournament by EIB Institute (finalist), Mass Challenge Switzerland, MF Supply Chain Awards, Fashion for Good Accelerator program, Global Change Award, Elle Impact 2 For Women Award Italia, Ideas for Change Award and the Green Carpet Fashion Awards. In 2020, the company was selected as a nominator for the global Earthshot Prize initiative of the Royal Foundation of the Duke and Duchess of Cambridge.

USEFUL LINKS

- [Website](#)
- [Instagram](#)
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REBORN naste BEAUTY



ABOUT

The Naste beauty products give a second life to agri-food by-products resulting from production processes. After careful studies and advanced technological processes, these cosmetics are formulated and combined with other natural ingredients to take advantage of the properties of the raw material used and ensure the highest effectiveness for facial and body skin.



INNOVATION/TECHNOLOGICAL APPROACH

Apple peels and seeds, which are discarded in the organic juice production process, are turned into apple paste, a functional and naturally antioxidant ingredient.

Thanks to advanced technological processes, a functional and naturally antioxidant ingredient is obtained due to the certified presence of natural nutrients, including polyphenols, fiber, catechins and sugars. The benefits of apple paste on the skin are many: naturally purifying and antioxidant, its natural properties provide radiance and firmness to all skin types.

One of the basic ingredients of NASTE Beauty's cosmetic line is apple paste. 100% upcycled, it is obtained by recovering the peels and seeds of Slow Food Presidium apples.

Naste also formulated the first circular economy hair line using a hazelnut extract derived from processing the fruit's de-oiled flour-a normally unused component. The hazelnut is combined with natural ingredients and plant keratin to make treatments that restructure, brighten and protect the hair film.

To further reduce environmental impact, the products are formulated with metered foam to minimise water consumption.



NASTE BEAUTY



SUSTAINABILITY

The cosmetics, vegan and certified organic, are made with renewable energy using a process that recovers water used in processing. The jars of the cream and face mask are made of recycled glass, one of the materials with the lowest impact throughout its life cycle, while the packaging of all products is made of recycled materials that are easily recyclable in turn.



AWARDS/SUCCESS

THE IMPORTANCE OF MAKING A DIFFERENCE

"The factory cannot only look at the profit index. It must distribute wealth, culture, services, democracy. I believe in factory for men, not men for the factory." Adriano Olivetti

Naste beauty followed this famous sentence and focused on building a network of relationships to continue this principle along the path of entrepreneurial growth.

This led to the collaboration with the "Dalla Stessa Parte" a social cooperative, which has been present in the Piedmont region for over 40 years. The cooperative was created by Franco Malerba, a young entrepreneur who had become paralytic and who had experienced first-hand all the dramatic marginalisation of people with disabilities. The cooperative's mission is to set up conditions and implement interventions so that the empowerment of those with disabilities is successful and discrimination no longer occurs.

Naste Beauty shares the same mission as Dalla Stessa Parte: to generate social impact and work to make the world of work fair and respectful. This is why they have started to rely on Dalla Stessa Parte and its team who, on a daily basis, manage all the logistics and shipping of the orders that arrive directly on-site. Helping to give those that need it, a chance to get back into the game and feel essential to society is a source of great pride and happiness for the company and a fundamental and enjoyable part of our work.

USEFUL LINKS

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ABOUT

Banco Alimentare's activity, like that of all Food Banks in Europe, aims to contribute to alleviating the problem of hunger, marginalisation and poverty, as well as to promote the fight against food waste, in cooperation with national and European institutions. To do this, Banco Alimentare coordinates donations and helps organise the recovery of surpluses from the food supply chain, by Food Bank Organisations (FBOs) who in turn distribute the food free of charge to Territorial Partner Organisations (TPOs)

Today, Banco Alimentare comprises 21 Banco Alimentare Organisations throughout the country and the Foundation, which sets the strategic guidelines and maintains institutional relations, and has a representative role at the national and international level. There are several benefits from the activities of Banco Alimentare, these include:

- **social:** food will be collected and distributed to people in need
- **economic:** companies who donate food will have less cost for storing or disposal
- **environmental:** these actions reduce the creation of waste and therefore the carbon footprint
- **education:** "Sharing our needs in order to share the meaning of life."



INNOVATION/TECHNOLOGICAL APPROACH

Banco Alimentare demonstrates innovation in several key areas related to food waste avoidance:

Advanced Technology: They use digital platforms and AI to optimise food recovery, matching surplus food with charitable organisations in real time.

Startups Collaboration: Partnering with food tech startups, they pilot innovative solutions like apps that connect donors with recipients and advanced food preservation techniques.

Circular Economy Practices: They convert inedible food waste into bioenergy or compost, extending the value chain of food products.

Educational Platforms: Banco Alimentare uses interactive online tools to educate the public about food waste and provide tailored reduction tips.

Dynamic Supply Chain: Their adaptable supply chain management quickly responds to fluctuations in food donations, ensuring minimal waste.

Corporate Collaborations: They pioneer "Food Sharing" initiatives and work with supermarkets on innovative strategies to reduce waste at the retail level.



BANCO ALIMENTARE

*Every day we recover
food for those who need
it most...*

119.138
Tonnes of food in 2023

1.793.612
People helped in 2023



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SUSTAINABILITY

Banco Alimentare, is aligned with the Sustainable development goals and the 2030 agenda and demonstrates this through several key initiatives:

Food Recovery and Redistribution: The organisation recovers surplus food from the agri-food industry, retail chains, and events, redistributing it to charities supporting those in need, thus preventing waste and aiding vulnerable populations.

Partnerships: They collaborate with food producers, distributors, and retailers to divert unsold or near-expiry food from landfills to those who need it.

Circular Economy Promotion: By reusing food that would otherwise be wasted, they reduce environmental impact and extend the lifecycle of food products.

Education: They raise public awareness of food waste and sustainability, encouraging responsible consumption.

Efficient Logistics: Their optimised logistics network ensures food reaches beneficiaries quickly and safely, minimising waste.

Banco Alimentare's efforts reduce landfill waste, lower greenhouse gas emissions, and support food security.



AWARDS/SUCCESS

In 2022 Fight against Waste: Banco Alimentare was awarded the Grand Prize Sustainable Development ad honorem. - Financial Services for SDGs, the historic event that encourages the Italian financial system towards sustainable development issues.

In 2022 it received the Impact Award: The initiative was created on the occasion of the CSR Show's 10th anniversary to reward organisations capable of measuring and evaluating the environmental and social impact generated by projects that make a concrete contribution to sustainable development.





Ricehouse[®]



ABOUT

Ricehouse Benefit Corporation, began its journey as startup in 2016 with the goal of creating a positive impact on society by promoting responsible change. Tiziana Monterisi, co-founder and CEO, through her twenty years of experience as an architect set up this project together with Alessio Colombo, geologist, COO, and co-founder.

Ricehouse is a complete model of circular economy, which develops a full range of building products, exploiting rice agriculture processing. This accomplishment solves environmental problems directly related to their disposal practices.

Ricehouse's mission is to build a house made of rice and everything that accommodates humans: from the micro to the macro, using rice by-products. Ricehouse is a link between agriculture and architecture, through the industrial and artisan realities of the area. To make the products ready for the market, Ricehouse always looks for new offers to satisfy a very demanding and constantly evolving market. Their stated goal is "changing the world" and the focus of their actions is "being aware of social responsibility."



INNOVATION/TECHNOLOGICAL APPROACH

Ricehouse has developed a prefabricated technological system that fully expresses the values and characteristics of Ricehouse: it is a prefabricated but insulated masonry that allows the house to be passive. Instead of having a wooden prefabrication structure, it has a concrete-style, but made of a natural structure. In fact, 92 per cent of the panel is composed of rice husks mixed with natural cement, so called because the marl from which it is made is natural, it does not need any additives.

In sustainable and circular construction, 'vegetal chemistry' is of great importance: Ricehouse starts with two waste materials, rice husks and straw, and combines them with different mixtures depending on what needs to be done. Depending on the use, they create completely different mixtures, from mineral binders to bioplastic ones such as polymers based on maize, lime and clay.

The added value of the solutions conceived and realised by Ricehouse is their availability: "we have the raw material available in almost infinite quantities and it is easy to find. Today we produce within a 400 km radius between Biella, Pavia, Lombardy and Veneto. It is fully made in Italy and a very restricted supply chain of both the raw material and the finished product.

In 2024 Ricehouse has entered the world of design, developing mixtures to make tiles or tables that do not need to go into a blast furnace: they are made with a geopolymer binder that silicifies rice husks.

RICE HOUSE

“Only by the way we look at the world, we will have the opportunity to truly change it.”



USEFUL LINKS

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- [Newspaper Article](#)



SUSTAINABILITY

We can benefit from waste: It is possible to achieve energy efficiency standards through waste processing from the rice supply chain

- We can avoid the environmental impact, by using something already present in nature
- Rice is the only bio-resource presents in all five continents, and it is the food for two-thirds of the world's population
- the entire life cycle of the individual elements and the entire building can reduce the environmental and social impact;
- using preferably local materials, with the active and proactive involvement of local businesses;

Housing structures are designed as natural ecosystems that are durable over time, but also sustainable from an economic, social, and environmental point of view



AWARDS/SUCCESS

Ricehouse won in 2022 the [Eni Award](#) for the best innovative and sustainable business ideas.

In 2022 they won the Golden Compass a prize that recognises the pioneers of Italian industrial design in advance.





HELSENI



ABOUT

The Helsieni farm in Karjaa is a pioneer of urban modular mushroom farming in Finland. For them, modularity means flexible production that can be scaled up or down, unlike big factories, as demand fluctuates. They are developing and using low-tech solutions for growing food in the cities. They are incorporating circular economy principles in all elements of their business. The Helsieni farm is continuously developed based on the research they carry out in these areas.



INNOVATION/TECHNOLOGICAL APPROACH

Helsieni aims to grow mushrooms with as low a carbon impact as possible. Using side streams from cities or agriculture, Helsieni is constantly improving the mushroom substrate, or growing medium. Helsieni also operates a webstore and offers workshops and consulting to teach people how to grow their own mushrooms, this empowers them to learn a new skill in a fun and engaging way. Helsieni has pioneered growing mushrooms in Finnish gardens by introducing the mushroom bed as a commercial product. The popularity is mainly due to the ease of growing and the abundant crops that customers can receive. The product also embodies their core value of circular economy, putting a value on waste from their farm, the spent substrate.



SUSTAINABILITY

In the natural world, there is no concept of “waste”, everything is food for something. In this organisation they intend to maximise the use of organic materials for mushroom production. They use coffee ground waste from restaurants, offices and cafés as a part of the substrate for the mycelium. After producing mushrooms at the farm our spent substrate is used in outdoor mushroom growing – like in mushroom beds – or in garden work or composted. So, in the end all the organic material returns to the soil. Their environmental impact can be reduced if they treat non-organic materials as precious and try to reduce, reuse, repair them. They aim to grow mushrooms using as little plastic as possible and using commonly available tools and equipment instead of high-cost specialised mushroom equipment.





AWARDS/SUCCESS

Helsieni offers consulting services concerning building configuration and setting up a low-tech oyster mushroom farm, with minimal capital investments. Although they have most of their experience in the Finnish context, a lot of the knowledge applies no matter where you are. Whether you need technical assistance and are thinking about how to design your humidity or air-flow systems or want to know more about substrate production and farm layout, they are happy to help. They operate virtual / phone sessions or can host you at their farm in Karjaa. As well as this they now create and sell Grown-your-own home starter kits to encourage more people to grow their own food. Thus, they are creating a greater awareness of food origin and by drying the substrate into pellets they are keeping those coffee grinds in the food cycle longer.

USEFUL LINKS

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[Earthrise: Feeding the billions - Helsieni's solutions for mushroom cultivation \(extract\) \(youtube.com\)](#)



ABOUT

The new Pirkka Kaffe products that have arrived on K store shelves, use coffee grounds produced at Neste K service stations. Pirkka Kaffe growing soil and Pirkka Kaffe growing nutrient are results of an open-minded circular economy cooperation between K Group and Berner.



INNOVATION/TECHNOLOGICAL APPROACH

Garden products from coffee grounds utilize side streams. Coffee pods are collected from Neste K traffic stations along with normal return logistics to K Group's central warehouse in Vantaa, so collecting them does not cause additional transportation. From there, the coffee pods continue their journey using the existing transport routes to the production facility of Berner's GreenCare brand partner in Saarijärvi, where, in addition to domestic fibrous hemp, the nutrient-rich cow bean husk, which is a byproduct of Raisio's Beanit bean products, is added to the coffee waste material. These make the dense material more airy and thus facilitate the composting of the coffee grounds. The ground coffee mixture is composted and used in the production of Pirkka Kaffe products. Thanks to these coffee grounds, the use of growing peat can be reduced by up to 30%. Coffee grounds from 70 coffee cups are used in one five-liter bag of Pirkka Kaffe growing soil. Millions of cups of coffee are drunk at Neste K stations every year, so there is enough raw material for industrial production.

Strengthening the circular economy is K Group's strategic orientation. "One visible and important part of what we do for our customers is the sale of processed products from side streams of our own operations. During 2022, we collected 81,000 kilos of coffee grounds from Neste K service stations, from which 55,000 bags of Pirkka Kaffe growing soil have already been produced. Collecting coffee grounds has become part of everyday life at the stations," says Timo Jäske, Vice President of Sustainability for K Group's grocery trade division. Promoting the circular economy is also important at Berner. "We are open-mindedly looking for opportunities to strengthen the circular economy, and this worldclass project with Kesko is an excellent example of that," says Jussi Petäjä, Category Manager at GreenCare, Berner.





SUSTAINABILITY

Unique products tested by a customer panel - Growing soil and nutrient made from coffee grounds are used like conventional products. Coffee 'soil' contains the right amount of nutrients, has a durable structure and its microorganisms are alive, as good soil should be.



AWARDS/SUCCESS

Before entering the stores, Pirkka Kaffe growth soil was tested by a customer panel made up of members of the K-Kylä customer community. "The members of the consumer test group carried out in autumn 2022 were satisfied with the composition and the structure of the soil. In the consumer group, special praise was given to the germination of the plant seeds and the success of the plants in the growing medium, especially considering the timing of the test in the dark season," Petäjä says. Pirkka Kaffe growth soil and Pirkka Kaffe growth nutrient are available at Neste K service stations and K grocery stores. The products have a key label, which indicates that they are made in Finland.

Pirkka Kaffe growing soil also won "The sustainable product of the year" award in the European Private Label Awards in 2024.

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RESQ CLUB



ABOUT

ResQ Club is a Finnish company connecting sustainable restaurants, cafes, and grocery stores with consumers who appreciate eating affordable quality food. ResQ partners can drastically reduce their food waste with the proprietary location-based mobile and web service, as it enables consumers to find and rescue surplus food in their neighbourhood.



INNOVATION/TECHNOLOGICAL APPROACH

ResQ Club uses an innovative approach to reduce food waste by connecting consumers with restaurants, cafes and grocery stores offering surplus meals at discounted prices. Through their app, users can browse and purchase unsold food that would otherwise go to waste. This not only helps businesses reduce waste but also provides consumers with affordable meals. The app's real-time updates and easy-to-use interface make it a convenient solution for both businesses and customers, promoting sustainability and responsible consumption.



SUSTAINABILITY

ResQ Club has a significant sustainability impact by directly addressing food waste. The platform reduces waste by enabling food retail businesses to sell surplus food at discounted prices, preventing it from being discarded. This not only conserves resources but also lowers the environmental impact associated with food production and waste, such as CO₂ emissions. By fostering a culture of responsible consumption and reducing food waste, ResQ Club contributes positively to environmental sustainability and promotes a circular economy.



AWARDS/SUCCESS

ResQ Club's success as a company can be measured by its impact on reducing food waste and promoting sustainability, as well as its growing user base and expanding network of partner businesses. By offering a platform that efficiently connects consumers with surplus food from restaurants, ResQ Club has managed to save significant amounts of food from going to waste, directly contributing to environmental sustainability. Additionally, their user-friendly app has attracted a large and loyal customer base, leading to increased adoption by food establishments across 110 Finnish cities and they have expanded into Sweden, Estonia and Germany.

USEFUL LINKS

- [Website](#)
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HONKAJOKI



ABOUT

Honkajoki is Finland's leading processor and producer of animal by-products. They specialise in producing and manufacturing pure raw materials from an animal origin. Via their operations, they help to ensure that animal-derived raw materials return to the cycle of nature, in line with the principles of a circular economy. Their organic raw materials are used in the manufacturing of fertilisers and as a source of nutrients in pet foods and feed products for livestock and fur animals. In addition to pure proteins, their processes recover fat, which can be used as a raw material for biodiesel and in the production of cosmetics and industrial greases.



INNOVATION/TECHNOLOGICAL APPROACH

Further processing of raw materials of animal origin. Honkajoki Oy offers its customers responsibly produced high-quality renewable raw materials for animal nutrition, biofuels and fertilisers.



SUSTAINABILITY

Here they manufacture high-quality, clean and safe products for various industries from the organic non-food by-products, that emerge from animal-based food production. Thus, sustainable circular economy products replace virgin raw materials and thus conserve limited natural resources.



AWARDS/SUCCESS

Their mission is to recycle the by-products of the food industry safely and responsibly. Our most important mission is to supply our customers with high-quality, up-cycled products that are 100% pure and safe. It is a prerequisite for our business and strongest competitive advantage. Their operations are certified in accordance with ISO and EU standards

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SOIL FOOD



ABOUT

The Best Solutions for the Land - Soilfood is a circular economy company, whose goal is to replace virgin raw materials with recycled materials in large volumes and quickly. At the same time, they work in co-operation with their customers to reduce emissions and increase carbon removals with help from the soil.



INNOVATION/TECHNOLOGICAL APPROACH

Soil Food handles the side streams of over 40 industrial customers in the Nordic region. Customers include the world's leading paper, pulp and bio-energy industry companies as well as food and biogas plants. For farmers they offer organic fertilisers, effective limes, and soil improvement fibers, as well as agronomic expertise in product use, highlighting that the most sustainable choice can also be the most profitable.



SUSTAINABILITY

Soil Food is a sustainable way to improve factory profitability, as they offer side stream processing services, which help companies achieve their emissions and recycling targets. They refine nutrient, fiber, lime and carbon-based side streams into high-quality fertilisers and soil improvers. Soilfood uses industrial waste streams as a material and not as a fuel. It is a true circular economy, where materials are given a new life. Their promise to industry is to provide an easy, sustainable way to improve plant profitability: 1) Optimal lifecycle profits or minimal lifecycle costs. 2) The most responsible and sustainable reuse. 3) The most reliable and safest comprehensive service.



AWARDS/SUCCESS

Soilfood is an example of how crisis awareness and the desire to change the world become business. They know that it takes a large industrial scale to drive a significant change in the manufacturing of agricultural products and the material efficiency of industry. In 2015, they set out to make the idea a reality. They set up this circular economy company whose role is to make changing the world as easy as possible for farmers and industry. When the most sustainable is also the most profitable, it is a win-win for everyone.



USEFUL LINKS



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ABOUT

Biopallo is a Finnish company with the patented, unique technology of a biosphere, which converts organic side streams into raw materials for soil improvement and recycled fertiliser products within 24 hours.



INNOVATION/TECHNOLOGICAL APPROACH

The Biopallo process breaks down macro-organic material in an aerobic microbiological environment (reactor), where the material becomes hygienic via high temperature. The choice of raw industrial organic materials, the speed of the microbiological process, and the addition of the appropriate bacterial strains in the Biopallo biosphere result in the creation of safe, fibrous, decomposed organic matter. This hygienic humus acts as a soil conditioner and provides rich nutrients and beneficial bacteria for plants and the natural living ecosystem. Biopallo Technological vision is to provide technology that can prevent soil erosion and safeguard food production. Healthy living soil can both save people from starvation and clean and restore nature, water and the climate.



SUSTAINABILITY

Industrial manufacturing processes generate several different waste streams, which today are called side streams. After the Landfill Act was amended in 2013, industrial side streams are now directed to the circular economy. With the automated technology of the biosphere, industrial side streams (organic waste) are hygienised in the Biosphere reactor into organic humus. The effectiveness of organic composting products and soil improvers has been extensively proven to improve soil structure, sequester carbon and carbon dioxide, improve crop quality and quantity and lead to healthy waterways - a process that is cost-effective and achieves a sustainable circular economy.



AWARDS/SUCCESS

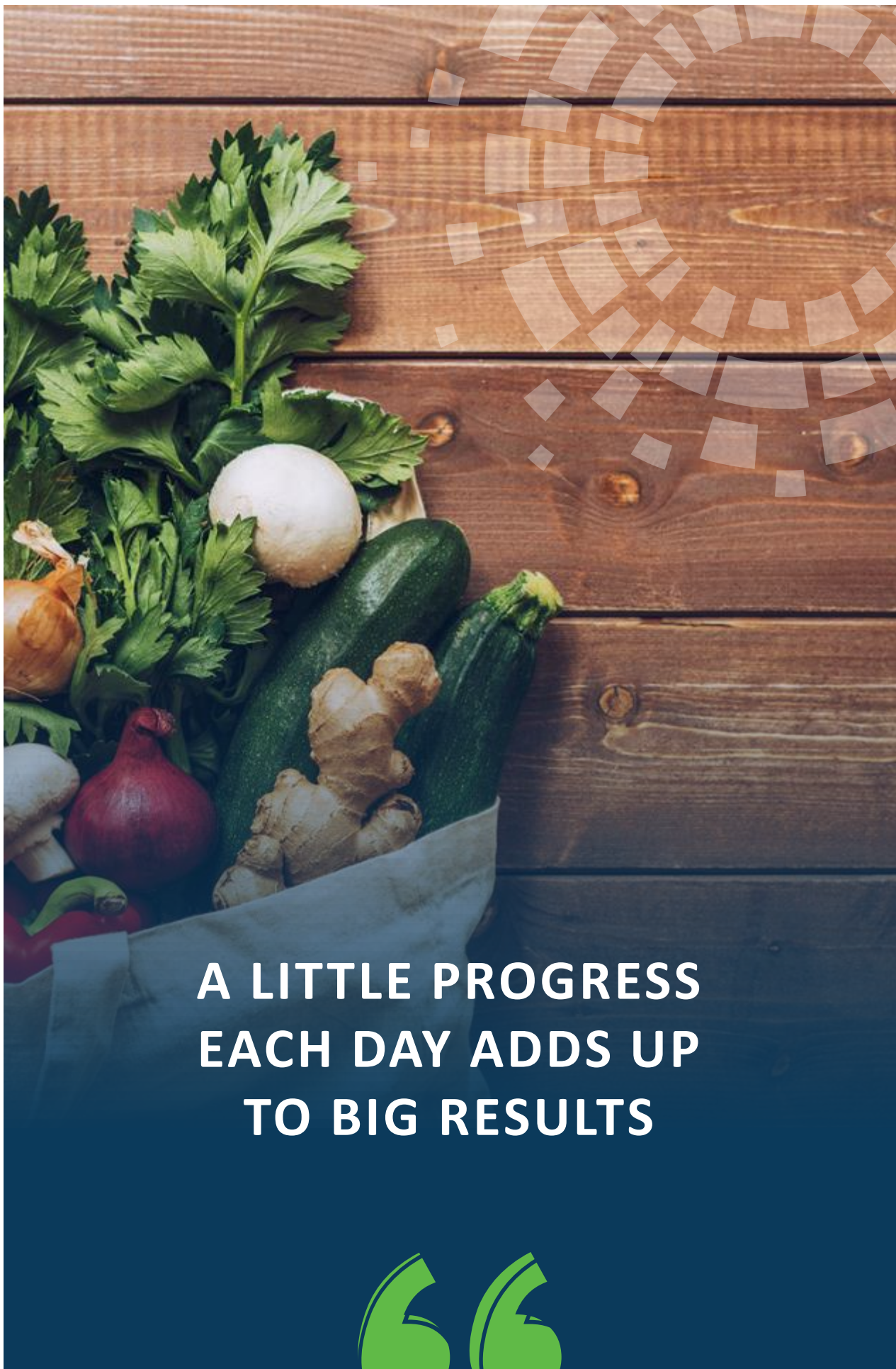
Biopallo Technological mission is to enable a new genuine circular economy of green industry and nutrient recycling. The mission of their technology is to help the Earth reach a carbon-negative state.



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**A LITTLE PROGRESS
EACH DAY ADDS UP
TO BIG RESULTS**



07 | CONCLUSION

As mentioned in the introduction of this compendium of good practices, food production is the human activity with the single biggest impact on our planet. We grow our food at huge environmental cost and then we waste around a third of all food produced around the world. Food waste represents a tragic loss of precious resources such as land and water – this is a climate change issue, and we cannot tackle climate change if we do not build a food system that nourishes the planet. Again, let us emphasise that a safe and just transition of food waste is urgently needed to ensure a healthy and thriving environment for future generations.


By putting together these good practices we have aimed to show that big efforts are being made by many countries to reduce food waste and as you have already read, it is evident the various practices have one main thing in common - circular economy.

Our selected practices have proven to be effective in achieving specific objectives and have had a positive impact on communities. They are environmentally, economically and socially sustainable, meeting current needs without compromising the ability to meet future needs. They are easy to learn and implement, replicable and adaptable to similar objectives in different situations and they

contribute to climate mitigation, enhancing resilience.

By adopting these good practices, businesses could become more sustainable and resilient, and thus become valuable pedagogical tools for educators and entrepreneurs in the food sector, tools that show the application of theories or concepts in real situations. The practices foster empathy with the main characters and are relevant to readers by relating challenges that need to be solved. They promote active learning and the development of key skills such as problem-solving and decision-making in complex situations.

It is very important to emphasise the need for a multifaceted technical approach focused on education, community engagement, and practical workshops to valorise food waste. Strategies should involve teaching sustainable cooking techniques, food preservation methods, and composting practices to minimise food waste at the source. Centers that promote learning and innovation, such as Food Cloud in Ireland and Banco Alimentare in Italy, are attracting businesses, students, and professionals interested in sustainability, and thereby they foster a strong community around environmental conservation and social benefit.



...we waste around a third of all food produced around the world

Our examples of best practices have shown us that ingredients derived from food 'waste' or perfectly edible food that would normally be thrown out (as it is not aesthetically pleasing), create unique and authentic dishes with great flavours, vegetable drinks with a milky taste and nutrients, tasty chicken broth etc., all and all delicious products ready for sale at the supermarket promoting a circular economy and traditional recipes. Thanks to the combination of tradition and modernity, our entrepreneurs are able to produce their products using as few resources as possible.

But there are also cases in which thanks to advanced technological processes other purposes have been given to food waste such as creating textile fibers or functional and naturally antioxidant ingredients for our face and body.

Every each one of the creators of our best practices care a great deal for our environment and the people who live in it and strives to make highly nutritious, zero-waste products that are easily accessible. They are fighting back against typical processed foods and their low nutritional value. Their products are designed to help us make better food & life choices in the simplest way possible. Not only are these new food products good for us but they also taste great.


It is worth mentioning that drastic changes in the hospitality sector during the Covid pandemic have pushed restaurant owners into deep reflection on how to improve during the temporary closures. With the help of colleagues in the sector, they implemented strategies to minimise waste and

maximise sustainability such as the Zelai Txiki restaurant which now has been transformed into a zero-waste establishment.

Food waste can be converted into new food, textile or cosmetic products, but it can also be an important source of usable biogas and a liquid bio-fertiliser. The biogas can be used directly in your home or business for cooking or heating and the liquid bio-fertiliser can be used for growing food.

To sum up all of the best practices of W2W are driven by the passion of supporting customers in eliminating the negative environmental impacts associated with the disposal of food waste. Entire businesses are built on creating a circular economy where materials are given a new life that have generated a significant 'worth' or economic impact, evidenced by the increase in employment generation and business growth achieved in a very short period of time. It can't get much better than that.

The W2W project is a crucial initiative in addressing food waste and promoting sustainability. By equipping key stakeholders with the necessary tools and knowledge, the project not only contributes to environmental protection but also enhances the economic viability and social responsibility of food SMEs. Through collaborative efforts and the adoption of circular economy practices, W2W sets the foundation for a more sustainable future for the food industry in Europe.



...the creators of our best practices care a great deal for our environment and the people who live in it



Follow Our Journey



www.waste2worth.eu