



WASTE VALORISATION GUIDE

Turning food and drink
by-products into revenue
for Kent Businesses



A collaboration between:





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Executive Summary

Converting Food Waste into Wealth

For food and drink enterprises across Kent and Medway, the concept of 'waste' is increasingly being redefined as a secondary inventory of untapped value. This guide shows you how to transform everyday food system by-products into higher-value products, proving that environmental action makes clear financial sense. Read on for practical 'easy wins' and inspiring local case studies to help you start turning waste into profit today.



The Business Case: Why Cutting Waste Boosts Your Bottom Line

Nearly 6.5 million tonnes of edible food, worth £21 billion, is wasted annually in the UK.¹ Including non-edible waste increases this figure to 10 million tonnes. While households waste the majority, 40% of food waste occurs before the supermarket (Figure 1).² This represents a huge challenge, and potentially opportunity, for the food supply chain.

The value of non-edible crop waste, including cereal straw, oilseed rape stems, and potato leaves, is harder to quantify, but over 850 million tonnes are produced in Europe annually.³ That's not to mention non-crop organic farm waste, like coconut coir and bamboo canes. Exploiting this value can improve your business's sustainability while generating revenue.

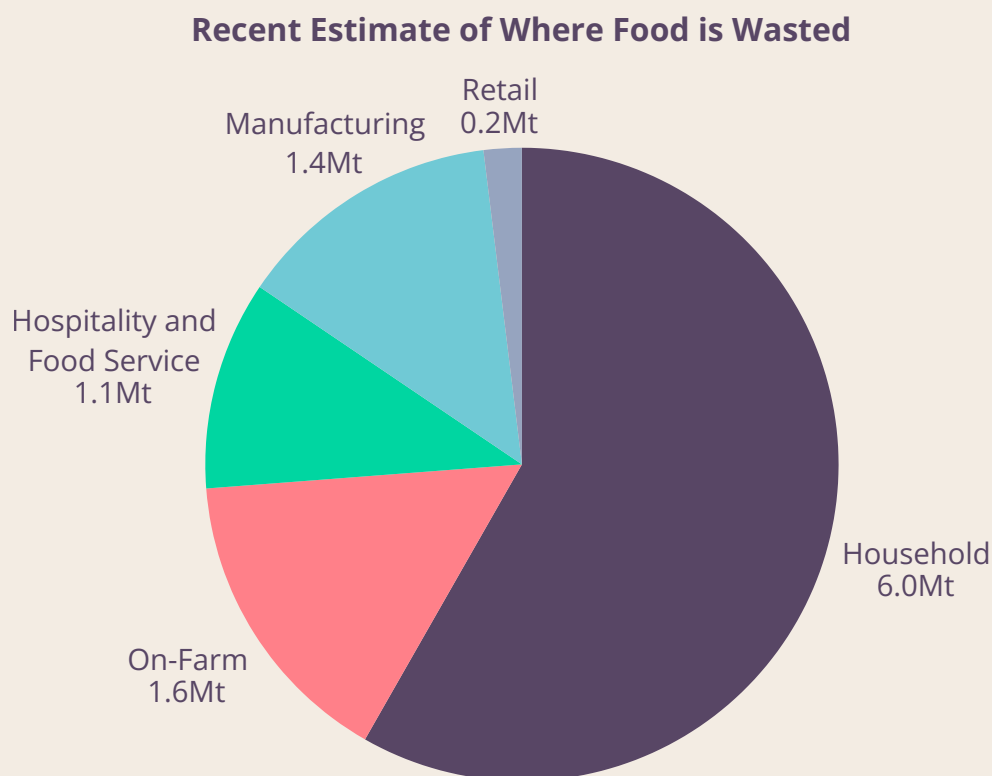


Figure 1. Breakdown of UK food waste by sector (2021–2022). Out of an estimated 10.2 million tonnes (Mt) total, households account for the majority at 6.0 Mt. However, early supply chain stages are significant contributors, with farming (1.6 Mt) and manufacturing (1.4 Mt) making up nearly 40% of the overall waste. Source: WRAP, [UK Food Waste & Food Surplus – Key Facts](#).

¹ WRAP, [UK Food and Drink Pact: Food Waste Reduction Roadmap](#)

² WRAP, [UK Food Waste & Food Surplus – Key Facts](#)

³ Industrial Crops and Products, [Management of crop residues with special reference to the on-farm utilization methods: A review](#)

Why Customers Expect Green Businesses and the Cost of Doing Nothing

Businesses are under increasing pressure from government, consumers, and supply chains to adopt sustainable practices. The environment is now the third most frequently cited top priority for consumers choosing food, and is the fastest-growing driver of choice (Figure 2). Continuing with “Business as Usual” also risks exposing the UK to £2.6 billion in increased food commodity costs by 2050.⁴

However, 86% of businesses report facing barriers to improving their sustainability, with cost as the most cited barrier for SMEs (53%).⁵ Waste valorisation – converting waste, residues, or by-products into higher-value products – offers a rare opportunity to turn the financial and environmental cost of waste into new revenue streams.

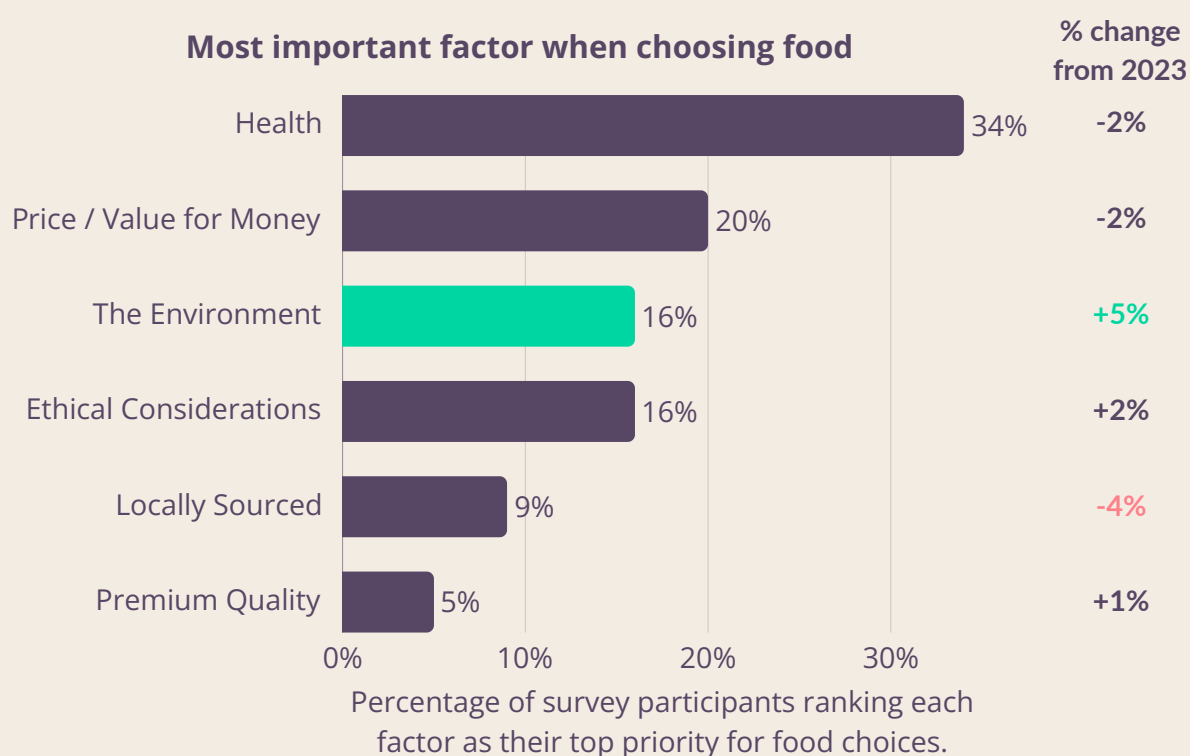


Figure 2. Primary Drivers in Consumer Food Choice. This AHDB chart shows the most important factors for consumers when choosing food. The environment saw the most significant growth compared to 2023, rising by 5% to reach a total of 16%. Source: AHDB, [Environment and buying sustainably drives consumer focus](#).

¹ IGD, [A climate risk assessment of the UK food system](#)

² BSI, [Net Zero Barometer Report 2025](#)

A Step-by-Step Roadmap: Real Examples from Kent & Medway

This guide provides a solution-oriented roadmap towards generating value from your business's waste. Inside, you will find information on how to conduct an audit of your business's waste production. We also include a checklist of low-cost interventions and a series of inspiring case studies based on successful Growing Green projects.

Growing Green was a sustainability training and small grant programme, developed collaboratively between **Growing Kent & Medway** and **Low Carbon Kent** (Kent County Council).⁶



Overcoming the Costs: Practical Help for Small Businesses

We recognise that most UK small businesses are already striving to become more sustainable; 94% have already taken at least one step to reduce their environmental impact.⁷ However, we also know that thin margins and a lack of practical information remain significant barriers.⁸ This guide exists to break down those barriers.

Since 2021, Growing Kent & Medway has worked with hundreds of founders who are constantly asked to do more with less. We understand that pressure, which is why we lead with low-cost, practical solutions you can implement today. For those ready to go further, our in-depth case studies offer a blueprint for more ambitious waste valorisation.

⁶ Growing Kent & Medway, *Reducing the Carbon Footprint of our Food System in Kent and Medway*.

⁷ British Business Bank, *Smaller businesses and the transition to net zero*

⁸ BSI, *Net Zero Barometer Report 2025*

Waste Strategy

Turning Low-Hanging Fruit into Profit

Some sustainability changes require extensive investments of time and money, presenting a significant barrier to positive change for many food businesses. Fortunately, waste valorisation offers a unique opportunity to grow a sustainable business using resources your enterprise has already paid for, while generating entirely new revenue streams.

However, the golden rule of waste strategy is simple: reduce before you valorise. It is far easier to stop wasting resources than it is to find a secondary market for them. The goal of this section is to help you strip out preventable waste first, leaving you with a clean, consistent by-product stream ready to be transformed into a high-value asset.

The Power of the Audit

Demystifying a waste audit comes down to moving away from abstract carbon footprints and focusing on physical mass, resource streams, and money. For a small food business, a practical audit requires just three steps over a standard production week:



1. Map the Decision Points

Identify exactly where raw ingredients, packaging, water, or energy change hands or states within your facility and wider supply chain.



2. Log the Losses

Quantify what is wasted at each point: whether it is weighing food loss, tracking rejected packaging, or monitoring wasted water and uncaptured heat.



3. Attach a Cost

Calculate where resources are being lost and exactly how much money is spent dealing with that waste, including disposal fees and collection costs.

Seeing the true financial value of what enters your bins or escapes your processing lines provides the exact data needed to reduce food loss, meet supply chain sustainability requirements, and protect your margins. Agrifood businesses stand to benefit immensely from this process because sector waste is generally high value and often preventable.

Immediate Waste 'Easy Wins'

Before looking for complex secondary uses, implement these immediate, low-cost process adjustments from our sustainability checklist to stop food and packaging from being lost in the first place:

- ***Divert Out-of-Spec Inventory***

Review demand data to adjust your planting, harvesting, or production processes. Early identification of misshapen produce allows you to route "shop seconds" into alternative internal lines: such as soups, sauces, vegetable boxes, or frozen ranges: or arrange structured donations to local community networks.



- ***Optimise Storage Microclimates***

Spoilage is often just a symptom of poor climate control. Improve cold and ambient store management by monitoring temperature inconsistencies, managing airflow between pallets, ensuring consistent labelling, and reducing the time doors are left open.



- ***Transition to Lean Packaging***

Eliminate unnecessary plastics, liners, and films by standardising your container sizes with suppliers. Where possible, shift to reusable transit crates and boxes that circulate efficiently through the supply chain.



Scaling Up: Turning 'Easy Wins' into Long-Term Profit

Tackling these initial process-driven steps is about more than immediate savings; it is about building the financial confidence to pursue larger sustainability projects. Many of our Growing Green businesses have used this gradual approach to great effect.

For example, Nimisha Raja MBE, founder of Nim's Naturally, started by addressing the costly issue of storing damaged fruit surplus. By investing in a food grinder, she transformed that waste into a powdered ingredient line that now accounts for 13% of her total revenue.



Kent Success Stories

Profiting from the Circular Economy

Trufflus Case Study:

Turning Cacao Husks into High-Value Chocolate Tea

Trufflus
craft • chocolate

The Challenge: Commercial Loss from Discarded Cacao Husks

Small-scale chocolate production typically discards nutrient-rich cacao husks. These account for 12–15% of the cacao bean's total weight, meaning artisanal confectioners lose a significant portion of their raw materials to the bin. This is not only wasteful; it means producers are losing significant value while paying a premium for high-grade ingredients.

Founders also need to stand out in a crowded market. Modern consumers are increasingly seeking clean-label, plant-based products that reflect their values around health and environmental sustainability, putting pressure on makers to innovate. Trufflus identified this as an opportunity and applied for a Growing Green grant to derisk their project.

The Innovative Idea: Developing Circular Cacao Tea Lines

To tackle this waste and stand out in a saturated market, Trufflus founder, Ryan Pays, decided to use the entire cacao bean, including previously discarded husks. Using new equipment part-funded by Growing Green, he developed two distinct circular product lines: a premium, plant-based bean-to-bar chocolate and a zero-waste cacao husk tea.

The project was supported by targeted training and expert guidance from the Growing Kent & Medway ecosystem. By working with specialists at the Medway Food Innovation Centre on food safety for preparing and processing cacao beans, Trufflus successfully transformed an overlooked waste stream into a new revenue source.

The Results: Market Sell-out and Entrepreneurial Confidence

The pilot project provided a powerful proof of concept, with both the bean-to-bar chocolate and the zero-waste cacao husk tea pouches completely selling out at local Kent markets. Ryan found that explaining the sustainable, grant-supported nature of the tea strongly resonated with customers and actively boosted sales of other Trufflus products.

This success has given Ryan the confidence to scale up his business's production. Reflecting on the impact of the support he received, Ryan noted: "I've moved from thinking purely like a maker to now thinking like a full-blown business owner". This shows how relatively small sustainability investments can produce outsized results.

Proven Impact: Proof of Demand and Circular Market Entry

Aim	Outcome
Inventory Turnover	<i>The pilot project achieved a 100% sell-out rate for both the bean-to-bar chocolate and the cacao husk tea pouches across multiple Kent markets.</i>
Portfolio Expansion	<i>The grant enabled the immediate launch of two entirely new product lines, transitioning the business from a chocolate "maker" to a primary "producer".</i>
Customer Conversion	<i>Feedback indicated that the zero-waste narrative served as a primary driver of purchase, actively boosting sales of existing Trufflus products.</i>
Strategic Outlook	<i>The project successfully proved market demand for circular by-products, removing the financial risk of initial production.</i>

See it Differently: Trufflus Video Case Study



Root Mylk Case Study: Creating New Flour Lines from Leftover Plant Pulp



The Challenge: Perishability Barriers in Tiger Nut Processing

Root Mylk, an African-inspired wellness brand focused on tiger nut-based products, faced a significant sustainability hurdle within its beverage production. The manufacturing process left behind substantial quantities of tiger nut pulp. Potentially valuable and nutrient-rich, this pulp is a highly perishable by-product that proved difficult to process or preserve.

For many small food businesses, such unavoidable by-products are often treated as waste rather than a resource. Without a clear processing pathway, this material represented a missed economic opportunity and a growing disposal burden for a business operating with thin margins. Root Mylk's founder, Winifred Ayeni, turned to Growing Green for help.

The Innovative Idea: Science-Led By-product Upcycling

Supported by a small grant, Root Mylk adopted a science-led approach to transform this nutrient-rich tiger nut pulp into a range of high-value functional flours. This project focused specifically on the technical valorisation of by-products through advanced drying and milling trials, utilising expertise within our Kent-based innovation ecosystem.

The brand collaborated closely with food scientists at the Medway Food Innovation Centre (University of Greenwich) to evaluate the functional properties of the waste material. Together, they worked to identify optimal blending and processing techniques to create stable, retail-ready flour formulations.



The Results: Validating Retail-Ready Circular Formulations

The project successfully delivered three distinct functional flour concepts: a multipurpose baking flour, a porridge flour blend, and a savoury meal flour. These outputs validated the technical feasibility of upcycling tiger nut pulp into differentiated, value-added products for the mass market, diversifying Root Mylk's product offering.

Beyond the new product range, the grant helped derisk the transition to pilot-scale production and built significant technical confidence within the business. Root Mylk is now positioning to launch these circular innovations, turning a previous waste stream into a sustainable opportunity.

Proven Impact: Strategic R&D and Technical De-risking

Aim	Outcome
Product Diversification	<i>The project delivered three stable, distinct functional flour formulations ready for pilot-scale production.</i>
Knowledge Assets	<i>The collaboration with the Medway Food Innovation Centre generated proprietary insights into moisture reduction, texture, and flowability of tiger nut pulp.</i>
Scale-up Potential	<i>The value of food innovation often resides in these initial technical breakthroughs; Root Mylk is now positioned to move from lab-scale R&D to commercial market readiness.</i>

See it Differently: Root Mylk Video Case Study



Canterbury Brewers & Distillers Case Study: Growing Gourmet Mushrooms with Brewery Waste



The Challenge: Managing Growing Volumes of Brewery Waste

Canterbury Brewers & Distillers' sustainability journey began with a simple but effective energy-saving project: a system that captures energy from distillation to heat their restaurant and bar. This reduced their heating bills and proved that repurposing unavoidable by-products delivers immediate financial benefits.

As the business expanded, it faced a larger-scale challenge: managing the tonnes of spent grain and wastewater generated annually. Simply disposing of these growing volumes was no longer viable for a business aiming for net-zero resource efficiency. Fortunately, co-founders Jon and Jodie Mills saw the potential value in this waste.

The Innovative Idea: Integrated Distillation-to-Mushroom Ecosystems

An initial project, supported by a Growing Kent & Medway grant, demonstrated that whiskey by-products – brewers spent grain, water, and CO₂ – could serve as essentially free inputs for growing gourmet mushrooms. This not only produced high-value ingredients for their restaurant but provided a sustainable proof of concept that continued to snowball.

Following this success, the business secured a Growing Green grant to scale their waste valorisation and mushroom production with a purpose-built grow room. By also investing in specialised extraction equipment, they have developed even higher-value functional tinctures and upcycled vinegars.



The Results: Scaling High-Profit Circular Revenue Streams

This gradual step-up in innovation has delivered substantial commercial results, with mushroom trials achieving a 100% success rate. Individual whiskey batches are now capable of yielding 160 kg of gourmet mushrooms weekly. The new product lines are estimated to generate significant new revenue for the business.

The project serves as a powerful example that starting with small, practical interventions can provide the foundation for ambitious, high-profit sustainability models. By reinvesting the success of their initial waste valorisation into more complex systems, Canterbury Brewers & Distillers has built a resilient business.

Proven Impact: Award-Winning Circular Innovation and ROI

Growing Green	Outcome
<i>Without Growing Green</i>	<i>Annual ROI: 110%–400%; Payback Period: Approximately 3–11 months.</i>
<i>With Growing Green</i>	<i>Annual ROI: 180%–645%; Payback Period: Approximately 2–7 months.</i>

Note: These figures are based on the business's estimated revenue from mushroom production. However, the long-term ROI is likely to increase as Canterbury Brewers & Distillers refine their production techniques at a new, larger scale and bring their new high-value products, such as brewery-waste vinegar and functional tinctures, to market.

See it Differently: Canterbury Brewers & Distillers Video Case Study





Research and Support

for Kent Food Businesses

The case studies featured above were made possible by Growing Green, a collaborative sustainability training and grant programme. This initiative was funded by Growing Kent & Medway, a UKRI-funded innovation cluster supporting the region's horticultural and plant-based food sectors.

To deliver this programme, we partnered with Low Carbon Kent (Kent County Council). Established to help Kent businesses adapt to climate change and embrace the circular economy, their resources – including ISEP-accredited environmental training and the Sustainable Business Toolkit – can help turn your sustainability ambitions into reality.



Next Steps

Turning Your Waste into Wealth

We hope the practical checklists and Growing Green case studies in this guide inspire you to make your business more sustainable and profitable through waste valorisation. The examples provided here demonstrate that transforming waste into higher-value products is an achievable strategy for any business willing to challenge traditional disposal methods.

Explore Further Sustainability Resources

Improving waste valorisation is about generating value from resources your business has already paid for. If waste valorisation is a primary goal for your business, we highly recommend reading our more in-depth Waste Valorisation Report and its accompanying mini-reports for crop-specific guidance. If you are looking to tackle multiple projects to become holistically sustainable, our other guides on Water Resilience and Energy Efficiency offer similar evidence-based blueprints.

To take your next step, explore the regional expertise and funding networks that support circular economy innovation across Kent and Medway.

Growing Kent & Medway



Visit our [website](#) for further crop-specific reports, technical expertise, and research facilities: or contact us directly to connect with our network for specific support.



Low Carbon Kent (Kent County Council)



Visit their [website](#) to access the Comprehensive Business Sustainability Toolkit and explore success stories from the LoCASE project.



Kent & Medway Growth Hub

Visit their [website](#) and social media channels to navigate the local funding landscape and identify grants for sustainability projects.



**UK Research
and Innovation**

UK Research and Innovation

Growing Kent & Medway is funded by UKRI's Strength in Places Fund to invest in sustainable innovation within the horticulture and food sectors across Kent and Medway.



Concluding Remarks

Adopting a circular economy framework is a direct pathway to commercial growth. By learning to treat your unpreventable by-products as an untapped secondary inventory, you turn costly disposal fees into entirely new revenue lines.

This guide was conceptualised, written, and designed by Dr Dominic Hill (Growing Kent & Medway), with practical waste strategy contributions from Richard Izzard (Low Carbon Kent).

Join the Growing Kent & Medway Ecosystem

Ready to turn your by-products into profit? Our innovation cluster bridges the gap between ambitious local founders and world-class scientific expertise to make sustainable food systems commercially viable.

Take Action Today:

- For highly granular, crop-specific advice, download our dedicated In-Depth [Waste Valorisation Report](#). To optimise your other core inputs, view our companion Energy Efficiency Guide and Water Resilience Guide.
- Connect with Us: Visit growingkentandmedway.co.uk to join our 700-strong member network, access local funding, and start your first valorisation project today.

THANK YOU FOR WORKING WITH US TO BUILD A
MORE RESILIENT, SUSTAINABLE, AND PROSPEROUS
FUTURE FOR THE KENT AND MEDWAY FOOD SYSTEM.

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