

# BUSINESS MODELS

## D 3.4.1

**Related WP:** 3

**Related Activity:** 3.4 Business model development for IDLCASS

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## 1. Introduction

D 3.4.1 is a part of Activity A 3.4 »Business model development for IDLCASS«. Within this activity, one business model for each partner country (AT, DE, SI, FR, IT) was prepared to ensure long-term usability of the developed FoodCycle.ai. Models consider country-specific financials, strategy, policy aspects, and benefits provided to stakeholders.

## 2. Circular economy

The concept of the circular economy (CE) was developed and disseminated by the Ellen MacArthur Foundation already in 2010. However, today's understanding of CE is a result of several influences and contributions over the last decades. According to the Ellen MacArthur Foundation, CE is a system in which materials never become waste and nature is regenerated. In CE, products and materials are kept in circulation through processes such as maintenance, reuse, refurbishment, remanufacturing, recycling, and composting. CE tackles climate change and other global challenges, like biodiversity loss, (bio-)waste, and pollution, by decoupling economic activity from the consumption of finite resources. According to the European Parliament, the CE is a model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible. In this way, the product life cycle is extended. In practice, it implies reducing waste to a minimum.

The CE is based on three principles<sup>1</sup>:

- Eliminate waste and pollution by designing products, materials, and infrastructure to go back into the economy after their use;
- Keep products and materials in use by maintaining, reusing, and refurbishing them. If they can't be used anymore, take them apart, remanufacture them, and, as a last resort, recycle them;
- Regenerate natural systems by improving natural environments and building biodiversity, rather than focusing on what can be taken.

CE uses the 10 R framework, a strategic R-scale from reducing to recycling. The 10 R principles are<sup>2</sup>:

- **Refuse:** prevent the use of resources in the development of goods, processes or services;

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<sup>1</sup> Ellen MacArthur Foundation: Circular economy principles. Available at: <https://www.ellenmacarthurfoundation.org/circular-economy-principles>

<sup>2</sup> Circularise: R-Strategies for a Circular Economy. Available at: <https://www.circularise.com/blogs/r-strategies-for-a-circular-economy>

- **Rethink:** reconsider ownership, use and maintenance of goods;
- **Reduce:** decrease the use of resources in products, processes or services;
- **Reuse:** secondary use of goods by another owner for the same intended purpose;
- **Repair:** Maintain and restore existing goods for extended use;
- **Refurbish:** restore and improve goods to a satisfactory condition for extended use;
- **Remanufacture:** make goods with the same purpose as discarded products or parts;
- **Repurpose:** make goods with a different purpose with discarded products or parts;
- **Recycle:** process wastes into new materials or goods;
- **Recovery:** process wastes to recover energy.

## 1.1 Circular business model strategies

Proposed business model strategies that contribute to circular businesses are, according to Bocken *et al.*<sup>3</sup>, divided into two concepts:

- **business model strategies for slowing resource loops** and
- **business model strategies for closing loops.**

Business model strategies for closing loops capture value from what is considered in a linear business approach, byproducts or waste. There are two key models: extending resource value and industrial symbiosis. Design strategies to close resource loops are:

- design for a technological cycle (suitable for products that deliver a service),
- design for a biological cycle (suitable for products of consumption) and
- design for dis- and reassembly.

## 1.2 Strategic alignment with the EU Green Deal and CE policies

The business models developed under D.3.4.1 directly align with the key priorities of the EU Green Deal, the EU Circular Economy Action Plan (CEAP), and the broader European climate-neutrality goals. These models, tailored to the specific conditions in Austria, Germany, Slovenia, France, and Italy, contribute to the transition from a linear to a circular food system by exploring how digital tools and local collaborations can transform waste into value.

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<sup>3</sup> Bocken, Nancy M. P.; Pauw, Ingrid de, Grinten, Conny Bakker & Bram van der. (2016). Product design and business model strategies for a circular economy, *Journal of Industrial and Production Engineering*, 33:5, 308-320, DOI: 10.1080/21681015.2016.1172124.

At the heart of the EU Green Deal lies the ambition to decouple economic growth from resource use while ensuring no person or region is left behind. The CEFoodCycle pilots embody this by involving local SMEs, food producers, waste managers, and public authorities in circular food loops, fostering both resource efficiency and local socio-economic resilience. This aligns with the CEAP (2020), which promotes the adoption of circular practices in high-impact sectors such as food, textiles, construction, and plastics.

The business models further reflect the 10 R strategies of circularity, especially reuse, repurpose, recycle, and recover, through practical applications such as insect bioconversion, the valorisation of baked goods, and byproduct cosmetics. Our pilots demonstrate business model strategies for closing loops, as defined by Bocken *et al.*, especially through extending resource value and forming industrial symbiosis between actors that previously operated independently within the food value chain.

Moreover, each national model includes recommendations for policy integration that support alignment with the Farm to Fork Strategy, part of the Green Deal, which aims to make food systems fair, healthy, and environmentally friendly. For instance, the Slovenian model advocates regulatory recognition of insect proteins for feed, while the German and Austrian models explore enabling frameworks for distillation byproducts and food redistribution.

Lastly, the use of the FoodCycle.ai digital tool, embedded within each business model, contributes to the Digital Transition pillar of the Green Deal by leveraging technology for B2B matchmaking, transparency, and real-time data sharing. It acts as a scalable enabler of circularity and supports the data-driven governance promoted by EU policies.

Together, these business models illustrate how bottom-up pilot action, stakeholder co-creation, and digital facilitation can operationalise the EU's CE vision in the food sector, paving the way for more sustainable, localised, and resilient food systems across Alpine regions and beyond.

### 3. Methodology

#### 2.1 Scenario approach

Scenario analysis was used as a forward-looking tool to evaluate sustainability pathways, based on partner feedback and strategic priorities. Three scenarios were co-developed by project partners to reflect different levels of tool integration and future operational ambition. Each country and project partner reflected on their local context and selected the most suitable scenario for long-term implementation. Three main scenarios served as reference points to assess feasibility and alignment with national and regional CE strategies.

Scenario 1: <b>Expiration</b>	Scenario 2: <b>Bare Minimum</b>	Scenario 3: <b>Further Enhancement</b>
<ul style="list-style-type: none"> <li><b>X</b> no access to tool</li> <li><b>X</b> no further development</li> <li><b>X</b> no further support</li> <li><b>X</b> no new data</li> <li><b>X</b> no VCG integration</li> </ul>	<ul style="list-style-type: none"> <li><b>✓</b> access to tool</li> <li><b>X</b> no further development</li> <li><b>X</b> no further support</li> <li><b>X</b> no new data</li> <li><b>X</b> no VCG integration</li> </ul>	<ul style="list-style-type: none"> <li><b>✓</b> access to tool</li> <li><b>✓</b> further development</li> <li><b>✓</b> further support</li> <li><b>✓</b> new data integration</li> <li><b>?</b> VCG integration</li> </ul>
<p><i>Additional Costs:</i> none</p>	<p><i>Additional Costs:</i>  <small>- API: 100 requests per day at approx. 1 cent per request equals approx. 360 € per year                      - Cookie banner (Clickstobst): approx. 70 € per year                      - Domain (foodcycle.ai): approx. 100 € per year                      - Hosting: provided by the IT department of the UAS and therefore does not incur any additional costs</small>  <b>530 € per year</b></p> <p><i>Additional required Skills:</i>  <b>none (hosted at FH Salzburg)</b></p>	<p><i>Additional Costs:</i>  <b>&gt; 530 € per year</b>  <b>Additional project funding required</b></p> <p><i>Additional required Skills:</i>  <b>Software Developer</b>  <b>Hosting outside FH Salzburg</b></p>

Figure 1. Three main scenarios - future of the tool

### Scenario 1 – Expiration

This scenario foresees the complete discontinuation of FoodCycle.ai. The platform becomes inaccessible; no further development or support is provided; and no additional data or integrations are added. Although there are no ongoing costs, the tool's potential and value are entirely lost.

### Scenario 2 – Bare minimum

In this scenario, the FoodCycle.ai remains accessible online with minimal maintenance, hosted by a project partner. Active development, improvements, or integration of new datasets or features are not planned. User support is not guaranteed. The approximate annual operational cost is around €530, covering essential items such as API access, domain registration, and legal compliance.

### Scenario 3 – Further enhancement

This scenario involves continuous maintenance and strategic development of the tool, including integration of new datasets and possibly connectivity with external systems (e.g., VCG system). Achieving this scenario requires securing additional funding, technical resources, and staffing, including a dedicated software developer and external hosting solutions. Under this scenario, FoodCycle.ai could effectively support broader regional and European-level CE initiatives.

## 2.2 Questionnaire design

To support scenario selection, a structured questionnaire was developed and distributed to pilot partners. The questionnaire included both quantitative and qualitative elements to evaluate the tool's usability, stakeholder feedback, perceived barriers, and potential for integration into future business models. Open-ended questions captured narratives around user engagement, digital readiness, and sustainability potential. Responses were analysed to identify common patterns, regional differences, and to inform policy recommendations and scaling strategies.

## 4. Findings from partners

### AUSTRIA



#### Preferred scenario

FoodCycle.ai is a great tool and deserves to be preserved. FH-Salzburg supports Scenario 3, as it aligns best with their commitment to advancing circular food systems while leveraging digital tools. As an academic institution, FoodCycle.ai is a valuable educational and research tool showcasing the complexities of circular solutions.

#### Future role of partners

FHS Business & Tourism and PLUS aim to include FoodCycle.ai in their CE lectures, thereby fulfilling their roles as disseminators and propagating the ideas underlying the tool and overall project outcomes.

FH-Salzburg can host the FoodCycle.ai platform on an internal FH-Salzburg server, covering the costs of the FoodCycle.ai domain, API access and legal compliance. This is not guaranteed and is subject to changes within the relevant departments at FH Salzburg, but it has currently been approved until October 2026. They also envision their role as a regional promoter, raising awareness by sharing FoodCycle.ai within their network and promoting its benefits to relevant stakeholders.

#### Available resources

Financial (running costs) and staff contribution (server maintenance) for the tool. However, FH-Salzburg can realistically provide in-kind support through dissemination, including lectures and other student formats, particularly leveraging staff expertise and communication channels.

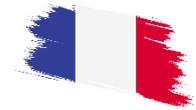
#### Potential funding channels

Unknown and not planned.

#### Adoption and promotion incentives

Due to limited financial resources, our organisation is currently unable to adopt or promote FoodCycle.ai in the long term.

## FRANCE



### Preferred scenario

Given the organisation's priorities and capabilities, CCI NCA would choose Scenario 2. During testing of the FoodCycle.ai tool, they realised that their targets and stakeholders (Cafés, hotels, and restaurants - CHR) had already identified various service providers and organisations specialising in bio-waste management (Veolia, Transcan, Apeyron, etc.). It should be noted that in the Alpes-Maritimes department and, more broadly, in the PACA region, there is a wide variety of service providers specialising in bio-waste management, from raw material supply to recycling.

### Future role of partners

Given the scenario consortium is likely to face in reality, and that CCI NCA targets and stakeholders already have access to the offerings/services of numerous providers specialising in bio-waste management, it won't be easy to choose a specific role for the development of the FoodCycle.ai tool after the end of the European CEFoodCycle project. Nevertheless, depending on the tool's development and life cycle, CCI NCA will be able to relay the latest information, features, and updates to their targets and stakeholders via the CEFoodCycle hub.

### Available resources

To support the tool, CCI NCA will utilise its communication channels, particularly its hub, to share the latest information and news about FoodCycle.ai.

### Potential funding channels

At present, CCI NCA has not identified any funding opportunities within their organisation or potential collaborations with other European projects to support the future development and sustainability of FoodCycle.ai.

### Adoption and promotion incentives

The FoodCycle.ai tool offers compelling features and has real potential in the fight against food waste. However, given that CHR stakeholders and target groups have already identified the various providers and organisations specialising in bio-waste management, CCI NCA will most likely experience some difficulties in encouraging the use of the tool for this function. Nevertheless, CCI NCA will continue their communication efforts to promote the FoodCycle.ai tool as effectively as possible.

## GERMANY



### Preferred scenario

Germany partners support Scenario 3, which aligns best with their commitment to advancing circular food systems. As an academic institution, HM views FoodCycle.ai as a practical platform for facilitating B2B connections around food byproducts but also as a valuable educational and research tool. Continuing to develop it opens new possibilities for integration with regional innovation ecosystems, supports new pilot projects, and extends its impact beyond the project's initial duration.

### Future role of partners

HM can act as a strategic partner and regional promoter, using the tool in research, involving students, engaging local businesses, and feeding results into curricula. UCB can promote FoodCycle.ai across its channels, explore adaptations for other CE topics, contribute new content, and support startups and companies in presenting solutions on the platform.

### Available resources

HM can offer student engagement and academic supervision, resources for testing and piloting new features, expertise in CE, sustainability and business models, communication channels within the university and local innovation network, and EU project and proposal-writing experience to help secure future funding. UCB can offer media and event promotion, CE expertise, use and promotion of the tool in other (inter)national projects, and new contacts and best practices gained through its network and events.

### Potential funding channels

Erasmus+, Horizon Europe (Green Deal), Interreg, German innovation programmes (BayFor, BayInnovativ, ZIM), public-private agri-food and CE partnerships, and foundations for food and climate innovation (e.g., EIT Food, UTum, BMW Foundation).

### Adoption and promotion incentives

Key conditions for long-term use and promotion of FoodCycle.ai include policy integration, clear governance and funding, ongoing technical support and roadmap, capacity building, co-branding and visibility, industry collaboration, and recognition for users. UCB also expressed needs for clarity on ownership and development rights, transferability to future projects, and plans for policy engagement.

## ITALY



### **Preferred scenario**

LAMORO currently lacks the financial and technical capacity to manage the tool beyond the project and therefore sees Scenario 1 as the only realistic option. However, they are open to collaborative solutions and would reconsider their role if new funding or partnerships emerge, as they recognise the tool's local CE value. IDM South Tyrol prefers Scenario 3, aiming to build on existing work and use digital CE solutions to better connect all relevant stakeholders.

### **Future role of partners**

LAMORO could continue promoting the tool among regional stakeholders, and IDM could act as a strategic partner in further developing the tool, serve as an active promoter, and raise awareness of its use.

### **Available resources**

LAMORO could use its regional and interregional communication channels and networks to promote the tool, raise awareness of its CE benefits, and stimulate interest, engagement and future collaboration. IDM could provide expert input to maximise added value for companies and partners, promote the tool through its channels, inform stakeholders about its use, and dedicate limited funds to communication and awareness-raising.

### **Potential funding channels**

Regional public funding is unlikely, so financing would probably need to come from participating companies and stakeholders (e.g. the University of Gastronomic Sciences), possibly with support from trade associations. Technical development should ideally be funded via an EU project, with future costs covered by user licence fees once the tool is live.

### **Adoption and promotion incentives**

The challenge primarily lies in limited financial and technical resources. To actively promote the tool in Italy, professional technical support from an IT service provider is essential. Only if smooth, reliable functionality can be guaranteed will the tool have a chance to generate real added value.

## SLOVENIA



### Preferred scenario

Partners from Slovenia see clear potential to continue developing the FoodCycle.ai tool beyond the project duration (Scenario 3). The platform supports their work in promoting food waste valorisation, mapping resource flows, and connecting stakeholders across sectors. With more funding and technical partners, the tool could integrate real-time data, stakeholder profiles, and enable partner matchmaking.

### Future role of partners

E-Institute is ready to act as both a strategic partner for further tool development and European project integration (Interreg, Horizon Europe), and a regional promoter, providing a decision-support tool for waste management and sustainable sourcing. It would also use the tool as a knowledge-sharing and educational platform in CE training activities.

### Available resources

E-Institute can provide in-kind staff support for promotion, testing, and co-design of future modules; access to networks in the food, agri-waste, and bioeconomy sectors in Slovenia and the wider Alpine region; project management and communication capacities for further EU-funded activities involving the tool; content contributions (e.g., pilot data, stakeholder use cases, best practices in circular food loops).

### Potential funding channels

Slovenian partners see alignment with Horizon Europe (Cluster 6) and Interreg Alpine Space follow-up projects, EIT Food or Bio-Based Industries Joint Undertaking (BBI JU) for scale-up pilots, Slovenian national green transition and bioeconomy funding, public-private partnerships with food SMEs and chambers of agriculture.

### Adoption and promotion incentives

Key conditions to ensure continued use and promotion of FoodCycle.ai are:

- ongoing technical support and a clear roadmap,
- integration into public policies,
- a multilingual interface, including full Slovenian support,
- capacity-building resources, such as toolkits and case studies for facilitators,
- visibility and co-branding in Alpine and EU-wide networks and platforms (e.g., Circular4.0, REPPnet).

**Table 1:** Comparative analysis of scenarios by countries (1 Expiration, 2 Bare minimum, 3 Further enhancement)

Country	Scenario	Partner	Role	Key resources	Adoption conditions
	2	CCI NCA	Food hub coordination	Communication & awareness raising	Low added value for stakeholders; upgraded features (list, infrastructure and routes info on public services)
	2	AVITEM	Regional promoter		
	2	AIE	Regional promoter	Staff time, awareness raising	No funds; limited active use
	3	FHS	Food hub coordination	Server, curriculum, dissemination	Needs educational integration; potential hosting support until 2026
	3	HM	Strategic partner, educator	Students and staff engagement, curricula, R&D	Policy integration, education; R&D support; new partner co-development
	3	UCB	Content contributor, promoter	Promotion, CE expertise	Clarified governance & ownership; ability to reuse for new topics
	3	E-zavod	Strategic partner, regional lead	Project management, CE networks	Needs roadmap, training, multilingual support
	3	BSC Kranj	Food hub coordination	Local stakeholder network	Alignment with national food waste policies
	2	LAMORO	Regional promoter	Communication & awareness raising	Needs external co-funding or strong private sector buy-in
	3	IDM	Food hub coordination	Network support, awareness raising	Needs technical support; user license model possible

*The project is co-funded by European Union under the Interreg Alpine Space Programme.  
The stated opinions reflect the opinions of the authors and not the opinion of the EC.*

#### 4.1 Cross-country patterns and differences

Germany, Slovenia, and Italy expressed their support for Scenario 3, which envisages upgrading the FoodCycle.ai tool into a long-term digital platform for connecting stakeholders in the CE. The partners perceive the tool as a valuable aid for B2B networking, awareness raising, and upgrading existing pilots.

On the other hand, France and Austria opted for Scenario 2, which envisages moderate expansion and continued use of the tool, primarily to support current users and introduce it to selected sectors. **These differences reflect varying degrees of digital readiness, institutional support, and partners' long-term ambitions for the digital management of food side streams.**

All business models highlight the benefits of reuse, local processing of biological residues, and stakeholder cooperation. These aspects support the broader objectives of the Green Deal and the EU Circular Economy Strategy.

Most partners see FoodCycle.ai as a tool that goes beyond its informational function; it can become a digital platform for testing new business models, collecting data, raising awareness, and potentially supporting market scaling. The tool's utility value was greater where a local network of stakeholders already existed. In these cases, the tool served as a digital complement to existing connections.

## 4.2 Governance and ownership

Different pilots worked with different types of data (material types, quantities, suppliers, etc.). Clarification is needed on:

- Who owns the contributed data?
- Can data be used for research, policy or commercial purposes?
- How is sensitive business information protected?

Ownership is currently unclear. Some partners (e.g., Slovenia's E-zavod, Germany's UCB) expressed willingness to continue supporting or developing the platform, while others view it as a public good but lack the capacity to assume direct ownership. The absence of a designated operator or institutional host raises questions about sustainability and accountability.

The platform could benefit from a multi-stakeholder governance model, including:

- a lead technical administrator (e.g., academic or IT institution),
- national or regional food hubs as content providers,
- advisory board, including policy, business and user representatives
- contributors to national/local datasets

Such a structure can ensure transparency, distribute responsibilities, and enhance legitimacy among user groups.

For the platform to remain relevant, regular content updates, quality control and feature upgrades are necessary. This raises the issue of:

- Who manages user onboarding and verification?
- Who maintains/upgrades the technical infrastructure?
- Who handles data privacy, user feedback and moderation?

Business models combine public funding (e.g., from EU or national CE budgets), membership models (e.g., for verified B2B users), and integration into existing national platforms (e.g., waste registries, bioeconomy observatories). However, no country has yet defined a fully funded commitment. This is a major barrier to long-term use.

## 5. Scenario impact assessment

This section evaluates the three scenarios for the FoodCycle.ai tool across four key dimensions — environmental impact, social impact, innovation and scalability, and risk management and resilience — while also reflecting the EU Do No Significant Harm (DNSH) principle. The DNSH assessment ensures that the continuation or expansion of the tool does not undermine EU environmental objectives (climate change mitigation, climate change adaptation, water and marine resources, CE, pollution prevention, and biodiversity protection).

### ENVIRONMENTAL IMPACT

**Scenario 1:** No direct negative environmental impacts, but a lost opportunity to reduce food waste and valorise side streams. This represents a “harm by omission,” as potential environmental benefits are forgone.

**Scenario 2:** Maintains some positive impact through awareness raising and basic use of the tool, but lacks capacity for scaling. Environmental contribution remains marginal.

**Scenario 3:** Strongest environmental potential. By integrating real-time data, valorisation pathways, and supporting industrial symbiosis (e.g., bioconversion in SI, redistribution in AT, niche valorisation in IT), this scenario maximises food waste reduction. It contributes positively to the DNSH criteria on CE and climate mitigation.

All countries aim to reduce food waste, but use different methods (bioconversion, redistribution, and separation). The potential impact depends on the model's prevalence and the volume of processed flows.

### SOCIAL IMPACT

**Scenario 1:** Loss of community benefits and capacity-building opportunities. No further awareness raising or stakeholder engagement.

**Scenario 2:** Some continued social value, particularly where local networks are already established (AT, FR). It can still serve as a tool for communication and awareness-raising, but its impact is limited.

**Scenario 3:** Strongest potential for new jobs, education, and training opportunities (e.g., through integration into curricula in DE, or regional promotion in SI and IT). Promotes local networks, awareness campaigns, and cross-border cooperation. Aligns with DNSH by avoiding harm to social cohesion while contributing to inclusion and skills development.

The French model focuses on awareness-raising; the Austrian and Slovenian models more directly support the involvement of local communities and the creation of new jobs; the Italian model adds value in niche markets (cosmetics, wellbeing).

## INNOVATION AND SCALABILITY

**Scenario 1:** Innovation is halted, and all prior development is lost. No scalability is possible.

**Scenario 2:** Tool remains functional, but innovation stagnates. Limited capacity for replication or integration with other systems.

**Scenario 3:** Significant innovation potential through digitalisation, AI-based data integration, and expansion into new thematic areas (e.g., biomass, construction waste). Scalability across Alpine regions and EU markets is possible. DNSH principle is supported by focusing on digital tools that reduce resource use and promote systemic innovation.

Innovations are most pronounced in bioconversion and digital integration (SI, AT). France and Germany currently have no strong innovation attempts within the platform, but the potential remains.

## RISK MANAGEMENT

**Scenario 1:** Financial risk is minimal, but reputational risk is high, as the project's investment is lost. No resilience to shocks, disruptions, or future policy needs.

**Scenario 2:** Operational risks remain (dependence on a single hosting partner, uncertain governance), with limited capacity to adapt to new regulations. Some resilience comes from continuity, but it is fragile.

**Scenario 3:** Higher financial and operational demands, but also higher resilience through distributed governance, secured funding, and continuous development. Risks related to logistics (AT), legislation (SI, DE), or operational issues (FR) can be mitigated through flexible design and governance. Alignment with DNSH ensures that risk management considers environmental safeguards and long-term resilience.

Slovenia and Germany highlight legislation as a key obstacle; France points to operational difficulties; Austria points to logistics and coordination. The tool's flexibility is key to mitigating these risks.

## 6. Recommendations

The experience of developing and piloting the FoodCycle.ai tool across five Alpine countries offers valuable insights and lessons for other stakeholders and partners in similar consortiums looking to initiate or scale up CE business models in the food sector. The following recommendations focus on ensuring long-term impact, operational viability, and cross-sectoral cooperation.

Future initiatives should define a **clear governance responsibility** early, including ownership of data, decision-making mechanisms, technical maintenance, and user onboarding. A multi-stakeholder governance structure (including public authorities, academic institutions, and business associations) increases legitimacy and long-term viability.

Business models relying solely on public project funding face sustainability risks. Future tools should build in **diverse funding streams**, including EU and national funds (e.g., Horizon Europe, Interreg, LIFE), membership or licensing models, public-private partnerships, and integration into existing policy instruments (e.g., green procurement or waste management plans).

Tools like FoodCycle.ai should be built as **modular systems**. This allows for **integration** with other sectors (e.g., textiles, cosmetics, energy), customisable interfaces for different user groups (e.g., farmers, municipalities, social enterprises), and thematic add-ons (e.g., CO<sub>2</sub> calculators, LCA indicators, pricing models).

Effective user adoption of circular food economy tools and practices depends on **continuous awareness-raising** and **capacity-building**. This requires the early involvement of universities, vocational training providers, and business support organisations to ensure that circular principles are integrated into educational pathways and professional development. Providing **ready-to-use content** such as tutorials, practical case studies, and guidance documents can significantly lower entry barriers. Additionally, **co-branding** with trusted regional initiatives can help build credibility, strengthen stakeholder engagement, and enhance the visibility of circular solutions across sectors.

Showcasing impact is crucial. Tools should integrate **monitoring indicators** for environmental benefits (waste reduction, reuse rate), social impact (jobs created, community events), and economic results (cost savings, new markets). Regular **communication** of these outcomes encourages wider adoption and policy support.

The experience of the CEFoodCycle project shows that openly shared tools, templates, and case studies can enable **replication in other regions**. Where possible, develop **open-access packages** or **replicability toolkits** to facilitate this.

## Appendix A - Questionnaire template

### **FoodCycle.ai tool – sustainability and future scenarios**

This document is part of Deliverable D3.4.1 and aims to collect feedback from partners regarding the future sustainability, use, and further development of the FoodCycle.ai tool beyond the project duration. Below are three possible scenarios describing potential futures for the tool:

#### **Scenario 1 – Expiration**

This scenario foresees the complete discontinuation of the FoodCycle.ai tool. The platform becomes inaccessible; no further development or support is provided; and no additional data or integrations are added. Although there are no ongoing costs, the tool's potential and value are entirely lost.

#### **Scenario 2 – Bare minimum**

In this scenario, the FoodCycle.ai tool remains accessible online with minimal maintenance, hosted by a project partner. Active development, improvements, or integration of new datasets or features are not planned. User support is not guaranteed. The approximate annual operational cost is around 530 €, covering essential items such as API access, domain registration, and legal compliance.

#### **Scenario 3 – Further enhancement**

This scenario involves continuous maintenance and strategic development of the tool, including integration of new datasets and possibly connectivity with external systems (e.g., VCG system). Achieving this scenario requires securing additional funding, technical resources, and staffing, including a dedicated software developer and external hosting solutions. Under this scenario, FoodCycle.ai could effectively support broader regional and European-level CE initiatives.

To help us define a feasible and realistic future for FoodCycle.ai, please answer the following questions clearly and concisely. Your answers should reflect the specific context, opportunities, and resources available within your organisation or food hub.

Please indicate your perspective clearly:

Responding as a Food Hub (please specify hub name): \_\_\_\_\_

Responding as a Project Partner (please specify partner name): \_\_\_\_\_

### 1. Preferred scenario

Which scenario (Expiration, Bare Minimum, or Further Enhancement) best aligns with your organisation's priorities and capacities, and why?

*(Please briefly explain your choice, referencing your strategic objectives, available resources, and expected benefits.)*

### 2. Future role of your organisation

How does your organisation envision contributing to FoodCycle.ai after the project ends and way?

*(Please specify your role clearly, e.g., active user, regional promoter, data provider, host, developer, or strategic partner.)*

### 3. Available resources

What type of resources (financial contributions, in-kind support, staff expertise, communication channels, technical resources) could your organisation realistically provide to support or co-own the tool?

*(Please briefly outline specific resources or capacities.)*

### 4. Potential funding channels

Which funding opportunities or collaboration frameworks do you consider most suitable for supporting the future development and sustainability of FoodCycle.ai?

*(Please mention specific programs or opportunities, e.g., EU projects, national or regional funding schemes, foundations, or public-private partnerships.)*



## 5. Adoption and promotion incentives

What conditions or incentives would make your organisation more willing or able to adopt and actively promote FoodCycle.ai long-term? (E.g. technical support, increased visibility, policy alignment, co-branding opportunities, training or capacity-building opportunities.)