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cities2030

D5.5 Innovation action deployment programme and action plan



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Deliverable D5.5_Innovation action deployment programme and action plan

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Document history

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V0	4.10.2022	The document has been edited and harmonised. The English language check has been conducted by an external service provider. Document ready for peer review.	SLEAN P14, IAAD P05, UPM P20, partners informed at Table 1
V0	7.10.2022	Peer review feedback: The authors and contributors have prepared a very good deliverable with a systematic overview of all the main activities and goals of the LLs. There are no major issues identified in our review, just a few tiny technical issues noted in the attached version.	Viktorija Ilieva, AGFT P27
V0	10.10.2022	D5.5 Submission to the PMO	SLEAN P14
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Version – November, 2022

Table of content

Executive Summary	5
Introduction	5
1. Background and context	6
1.1 Cities2030 Innovation Stream and Framework	6
1.2 Innovation landscape	7
1.3 Unlocking the potential of city region innovation	10
2. CRFS Living Labs' partners and authors	12
3. CRFS Living Labs SMART Goals and Action Plans [M25-M48]	13
3.1 1-Brugge	14
3.2 2-Velika Gorica	18
3.3 3-Troodos	21
3.4 4-Vejle	22
3.5 5-Seinäjoki	25
3.6 6-Bremerhaven	28
3.7 7-Quart de Poblet	32
3.8 8-Vidzeme	34
3.9 9-IASI	37
3.10 10-Murska Sobota	41
3.11 11-Vicenza	43
3.12 12-Haarlem	44
3.13 13-Venice	47
3.14 14-Cilento region	52
3.15 15-Marseille	56
3.16 16-Arganda	60
3.17 17-WINE@SICÓ	63
4. The exploitation of Living Labs' innovation action results	65
4.1 Living Labs' continuous reporting of the innovation actions and results	65
4.2 Continuous monitoring and analysis of the innovation actions and achieved results, and further processing at WP8	65
4.3 Partners' exploitation plans to secure results uptake, deployment continuity and maximise the potential scale-up at WP5	66
5. "CRFS SeedInvest" investment action programme	66
5.1 Landscape	67
5.2 Engagement mechanisms	71
5.3 Coaction for funding	75
6. References	77

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Abbreviations

CRFS	City Region Food System
TRL	Technology Readiness Level
EIP	Extended Innovation Pattern
LL	Living Lab
UFSE	Urban Food System Environment
SDG	Sustainable Development Goals
EUAC	The European Union and 'Associated Countries'
F2M	Flexible Multi-Partner Mechanism
TSP	Tailored Support Programmes
NLP	Natural Language processing
ANN	Artificial Neural Network

ANNEX

A - City Region Food System Sustransition Matrix, rev. 0

Executive Summary

The deployment program is a comprehensive provision that incorporates the piloting CRFS Living Labs' visions, objectives, and strategies to renew the City Region Food System to meet challenges and build resilience. The Living Labs' policies are aligned with the EU FOOD 2030¹ and UN-SDG11² policy frameworks of reference.

The piloting CRFS Living Labs introduce action plans, which define available resources, e.g., staff, stakeholders, types of equipment, instruments, innovation facilitators, facilities.

The Living Labs' action plans cover practical and real-life environment innovation actions and implementation mechanisms, e.g., experiments, capacity-building, investments, and other measures. Cities2030 implements small systemic changes at the local level and, per the specific context of the city/country, effectively contributes to the implementation of changes towards a larger transformation process.

The innovation actions fall into the CRFS Sustransition Matrix that is demonstrated in the Annex A, rev.0. The term "sustransition" is a combination of the two words: sustainability and transition.

- X-axel of the matrix covers the 5 key specific objectives of Cities2030: secure healthy and sustainable food, stop food poverty and insecurity, protect and preserve natural resources, enhance circularity and local food belts, develop food culture and skills.
- Y-axel of the matrix encompasses 10 thematic groups: production, processing, distribution, markets, consumption, waste, security, ecosystem services, livelihood & growth, inclusion & equity.

The "CRFS SeedInvest" investment action program brings the critical factor into the deployment program: the money. The additional financial resources facilitate ongoing and future innovation actions and transformation processes towards impactful and sustainable transformation.

Introduction

The Cities2030 innovation action deployment program is a compendium that includes the CRFS Living Labs' action plans, SeedInvest investment action program, and a review of necessary key tasks that support exploiting innovation action results in the project and beyond until 2030.

The implementation of the deployment program facilitates the Cities2030 consortium in structuring sustainable CRFS at the European level.

The CRFS innovation action deployment program embraces Cities2030 Innovation Stream and Framework, and it involves all seven technical work packages (see chapter 1.1). Chapter 1.2 positions how the Cities2030's 5 key specific objectives drive the innovations, how 10 thematic categories are related to the existing innovations, and what the desired Technology Readiness Level (TRL) is, which enables solution deployment

¹ EU Food 2030 policy, https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030_en

² United Nations, Make cities and human settlements inclusive, safe, resilient and sustainable, <https://sdgs.un.org/goals/goal11>

and scales up at the city-region level. Chapter 1.3 draws out the key tasks of work package five to unlock innovation potential and support innovation in the city region. The core activities are capacity-building measures, Living Lab innovation actions, aligned with the Extended Innovation Pattern (EIP), and ensuring financial resources to enable continuity. Chapter 1.3 also introduces the principles for Open Science, Open Innovation and Responsible Innovation. The purpose is to strengthen practice-oriented research and evidence-based decision-making to achieve socially and environmentally sustainable and responsible results.

The Living Labs' action plans in chapter 3 cover the challenge statements, experiments, innovation process, reflections and assessments of the results, and plans and actions on exploitation and scaling up. LLs' action plans are driven by real-life needs and are backed by practice-oriented research in the city regions. Action plans are ideated in a multi-actor and participatory workspace that applies principles of open science, open innovation, and responsible innovation.

Chapter 4 introduces how Living Labs' partners report innovation action results. It also presents how the reported results are analysed, shared, and exploited in two project work packages to elaborate a sustainable CRFS at the European level.

Chapter 5 defines the "CRFS SeedInvest" investment action program. The program describes the landscape, engagement methods, and the coaction for funding.

1. Background and context

1.1 Cities2030 Innovation Stream and Framework

Innovation Stream

The Innovation Stream covers 4 years of the project time frame (image 1).

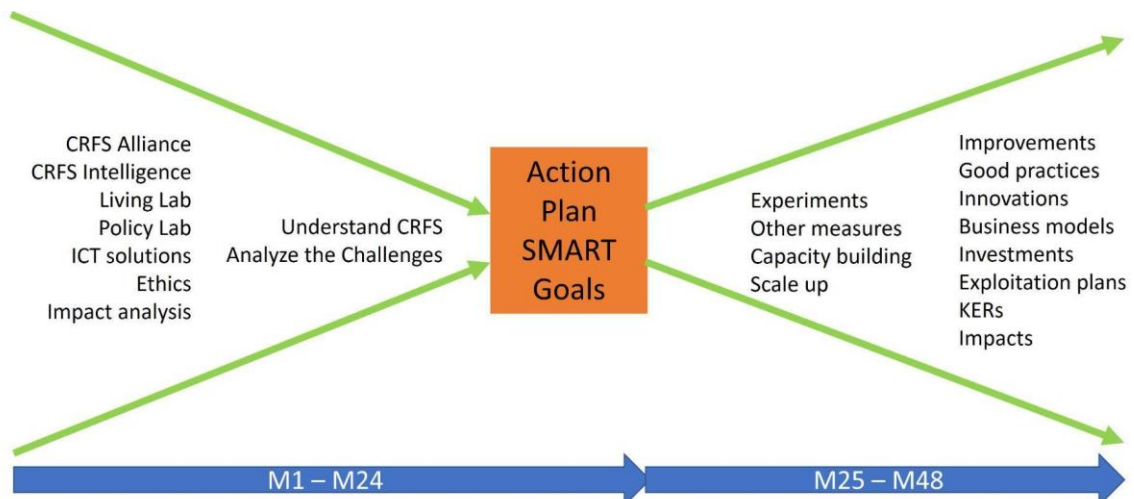


Image 1: Cities2030 Innovation Stream

The first project year is to build capacity and resources — both human and methods — for beneficiaries, stakeholders, and for the project. Work package 3 is responsible for carrying out the first phase of the

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Innovation Stream in the first year of the project. The conspicuous feature and requirement of the work package 3 is the participatory approach. All beneficiaries are engaged to participate and contribute to the tasks of work package 3. Project beneficiaries' and stakeholders' engagement and involvement in all phases of the Innovation Stream are essential. They co-study, co-create, co-define, and co-build the intelligence in work package 3 during the first year of the project (M1-M12). The beneficiaries and stakeholders capture the knowledge and bring it with them "in their heads" to work package 5 and to Living Labs to create value and facilitate the transformation of the City Region Food System (CRFS) toward the FOOD2030 policy.

The second project year is to establish CRFS Living Labs and start to implement the Extended Innovation Pattern (see image 6) in line with the Handbook guidance at WP5. The Handbook is a guide for CRFS Living Labs' innovation actions. It covers task 5.2 innovation actions from year 2 up to year 4. The content of the Handbook is defined in detail in the annex of deliverable D5.2.

During the second year of the project, Living Labs locally will carry out communication and capacity-building actions to boost community building and innovative thinking. Beneficiaries, together with stakeholders, explore CRFS, co-define, and analyse challenges to end up with SMART Goals and action plans for the next two years and beyond.

The years 3 and 4 are for implementing the Living Lab action plan. Implementation focuses on executing innovation actions and simultaneous exploitation planning, which is coordinated at task 5.3, to identify and conceptualise the results aka improvements, best practices and innovations.

At this phase of the Innovation Stream the partners put effort into exploring additional funding options for post-project actions, according to the "CRFS SeedInvest" investment action programme (see chapter 4). Work package 7 contributes to the utilisation by means of communication, dissemination and exploitation actions to maximise the scale-up opportunities.

Innovation Framework

The Cities2030 Innovation Framework is a broader concept compared to the Innovation Stream. In addition to Innovation Stream, it also embraces the provision of work package 1, i.e. impact assessment provision, work package 2, i.e. ethics findings, work package 4, i.e. policy framework, work package 6, i.e. ICT and data-driven solutions, work package 8, which is responsible for internal communication, progress and performance monitoring and analysis and knowledge management, and work package 9, which safeguards ethical project execution.

All work packages support the activities that beneficiaries, in cooperation with stakeholders, are conducting along with the Innovation Stream to promote and nudge a local and EU-level CRFS transformation.

1.2 Innovation landscape

Cities2030 objectives

To achieve the 5 specific objectives (Image 2), Cities2030 started by gathering intelligence at WP3 to secure the establishment of accurate CRFS Policy Labs (WP4) and Living Labs (WP5), within which participatory activities will develop to deliver evidence-based answers to identified needs, i.e. challenges in these 5 specific areas with policies frameworks and innovation pathways.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022



Image 2: Cities2030 5 specific objectives (Source: GA, chapter 1.1 Objectives)

Then, Cities2030 is organised to generate an actionable and structured knowledge basis at WP3 to establish and enhance city region food systems (CRFS); establish or enhance existing CRFS policy labs (CRFS PL), which will pave the way toward sustainable policy frameworks for food systems transition (WP4); establish or enhance existing CRFS living labs (CRFS LL), which will generate innovative systems to support food systems transition (WP5); deliver a cradle-to-cradle data-driven CRFS management digital platform based on blockchain technology: Single Click CRFS Platform (S2CP) at WP6.

Rather than systematically creating new developments that require a substantial number of resources, Cities2030 implements small systemic changes at a local level, which, per the specific context of the city/country, effectively contributes to the implementation of changes towards a larger transformation process towards EU FOOD2030 and UN-SDG11 policy framework of reference.

Existing innovations to form the landscape

The project deliverable D3.7 – 100 Innovation frameworks for CRFS – provides a stepping stone, inspiration and learning resource for actors and agents in the city region to transform City Region Food Systems. The collected innovations are demonstrated at the Cities2030 good practice platform³ (Image 3).

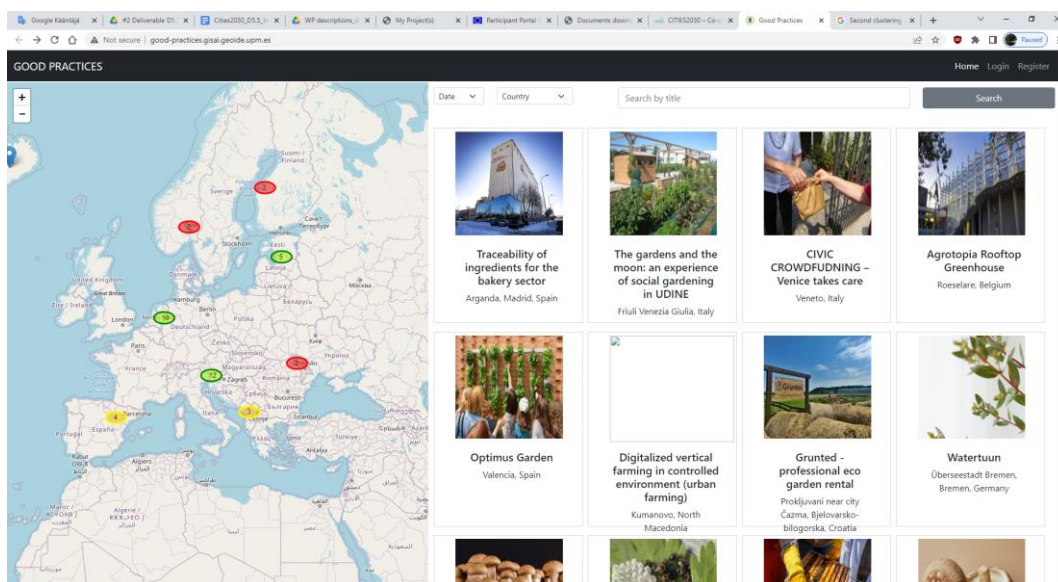


Image 3: Best practices platform

³Cities2030 good practice platform, <http://good-practices.gisai.geoide.upm.es/>

In the deliverable D3.7, the collected innovations are clustered into 10 thematic categories that are adopting the food value chain (Image 4): food production, processing, distribution, markets, consumption, waste, food security, social inclusion & equality, ecosystem services and livelihood & growth. 10 thematic categories cover the 5 aforementioned specific objectives.

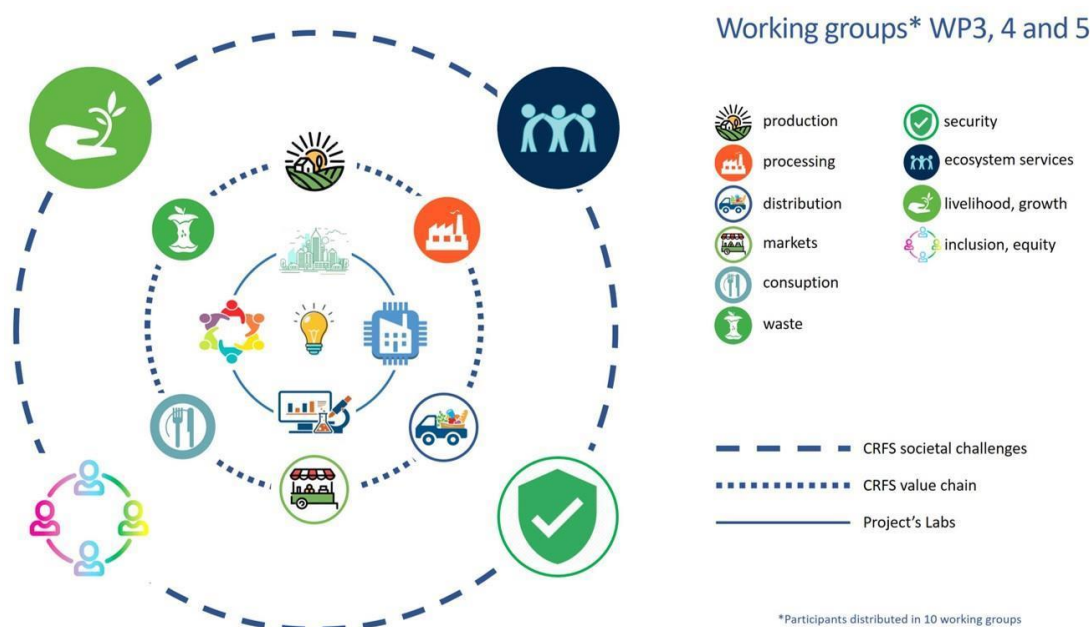


Image 4: Thematic categories for working groups (Source: GA, chapter 1.1 Objectives)

The collected 100+ innovations could also have been clustered according to the project's five specific objectives. It would have given a different perspective for CRFS actors and agents.

Technology Readiness Level (TRL) to enhance deployment

*"Technology readiness levels are levels on a scale that can be used for estimating the maturity of a given technology. There are nine levels, each of which represent a state in the development of technology, from the first thoughts to the final technology"*⁴. TRLs measure the maturity level of technology throughout its research, development and deployment phase progression (Image 5).

In Cities2030, the aim is to deliver innovations, best practices, and improvements in a Technology Readiness Level (TRL) from 5 to 8, depending on the nature of the solution (ref: GA: (a).11 Positioning). To enhance the novel solutions deployment, the high TRL 7-9 is the target.

⁴ Technology Readiness Levels explained: <https://s3food.eu/technology-readiness-levels/>

TECHNOLOGY READINESS LEVEL (TRL)

RESEARCH	9	ACTUAL SYSTEM PROVEN IN OPERATIONAL ENVIRONMENT
	8	SYSTEM COMPLETE AND QUALIFIED
	7	SYSTEM PROTOTYPE DEMONSTRATION IN OPERATIONAL ENVIRONMENT
DEVELOPMENT	6	TECHNOLOGY DEMONSTRATED IN RELEVANT ENVIRONMENT
	5	TECHNOLOGY VALIDATED IN RELEVANT ENVIRONMENT
	4	TECHNOLOGY VALIDATED IN LAB
DEPLOYMENT	3	EXPERIMENTAL PROOF OF CONCEPT
	2	TECHNOLOGY CONCEPT FORMULATED
	1	BASIC PRINCIPLES OBSERVED

Image 5: Technology Readiness Level (TRL)

1.3 Unlocking the potential of city region innovation

WP5 is one of the three main work packages in the Innovation Stream (image 1). Driven by a comprehensive and diverse set of agents of the Urban Food System Environment (UFSE), WP5 delivers a structured process and environment to future-proof and sustainable City Region Food Systems (CRFS), in order to unlock the city region innovation potential.

WP5 builds capacities in all agents of the UFSE to generate sustainable CRFS that are aligned with local needs and FOOD 2030 policy. Task 5.1 delivers the Capacity Building Programme. Maximising the capacity to innovate is realised at each of CRFS Living Labs through a localised capacity-building program. An innovative mindset is stimulated by a multi-actor approach that invites and engages public bodies, businesses, non-profit organisations, academia, research-, development- and innovation institutions, and citizens to solve CRFS challenges at Living Labs in participatory working methods.

WP5 and task 5.2 identifies, structures and accelerates an Extended Innovation Pattern (see image 6), that incorporates the design, pilot, validation, and deployment of cutting-edge food-related innovations. The innovations are associated with social-, technological-, business-, and science fields. WP5 explores CRFS as a system, challenges from CRFS and real-life food value chains. WP5 implements experiments on products, services and mechanisms at the city region level, and eventually generates sustainable and responsible results and exploitation plans (ref. task 5.3).

Deliverable D5.5_Innovation action deployment programme and action plan

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Version – November, 2022

Finally, WP5 puts effort into identifying and activating funding schemes to support the structured and sustainable development of aforementioned innovations. The “CRFS SeedInvest” investment action is defined at task 5.4.

Living Labs’ elaboration on the SMART Goals and action plan at the Extended Innovation Pattern

Extended Innovation Pattern (see Image 6) phases #1 Understand CRFS and #2 Analyse the Challenge precede the definition of SMART Goals and action plans.

During the first two phases, Living Lab actors seek, explore and sense the current state of CRFS. Within a multi-actor workspace at Living Lab, they generate the future vision of City Region Food System 2030 together. They define and analyse the challenges that need to be solved in a way toward the CRFS vision 2030.

As a result of previously conducted multi-actor, participatory and practice-oriented research, LL is equipped to form SMART Goals and Action Plans for the project period and also take a stand on how to scale up, expand and share best practices and innovations to foster sustainable food system transformation.

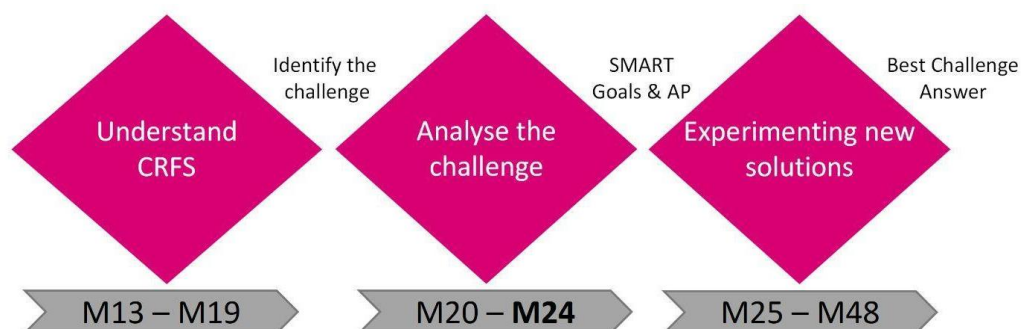


Image 6: Extended Innovation Pattern (EIP)

Open Science, Open Innovation and Responsible Innovation

Principles of Open Science, Open Innovation and Responsible Innovation are applied in all phases of the Extended Innovation Pattern to achieve sustainable and responsible results and solutions for CRFS.

Open Science can be firstly viewed as Open Access. The concept of open access is directly linked to the following purpose: “make the primary outputs of publicly funded research results — publications and the research data — publicly accessible in digital format with no or minimal restriction as a means for accelerating research”⁵. The project outputs will be freely accessible abiding an Open Science format through digital hubs of Open Educational Resources, such as OERcommons⁶, as well as a series of identified platforms.

⁵ OECD. <https://www.oecd-ilibrary.org/docserver/5jrs2f963zs1-en.pdf?expires=1578565196&id=id&accname=guest&checksum=49F8B30DC889F400941C3D64E9C92E3D>

⁶ OERcommons, 2019, <https://www.oercommons.org/>

Open Innovation has the potential to widen the space for value creation. It is a more distributed, more participatory, more decentralised approach to innovation. The successful open innovation procedure requires that a) participants forget about the IP for a moment, b) actors put effort into a combination of hard and soft incentives to motivate internal and external collaborators, and c) actors stress the urgency that leads to the transformation.

The Responsible Innovation process seeks to achieve a social or environmental benefit. The Responsible Innovation process assesses and effectively prioritises the social, ethical, environmental and cultural impacts, risks and opportunities, alongside the technical and commercial.

Living Labs will promote, pay attention to, analyse, screen and harvest findings and results that they have delivered in the experimenting phase of the Extended Innovation Pattern in months M25-M48. The findings and results are classified into improvements, good practices, and innovations. The results that the project partners assess as sustainable, responsible, exploitable, replicable, and scalable beyond the project time frame are to be reported in the deliverable D7.5.

2. CRFS Living Labs' partners and authors

CRFS Living Labs 1-12: The role of 10 front-runner cities and 2 regions is defined in the Cities2030 GA (chapter 1.3. (a).5, (a).6.). In work package 5, 10 cities and 2 regions establish a corresponding number of CRFS Living Labs, structure CRFS vision 2030, define challenges for themselves, build capacity among LL, and carry out experiments to find feasible, scalable and replicable solutions to the challenges.

CRFS "Bonus" Living Labs 13-17: Table 1 also lists 5 front-runner and "bonus" CRFS Living Labs that have not been mentioned in the GA but which beneficiaries have established during the project. The "bonus" LLs carry out the same procedures as the 12 CRFS LLs. In two LLs, which are 16-Arganda and 17-PRIM, the implementation scope is limited due to the low number of person-months.

Table 1 lists the CRFS Living Labs and the people who have contributed to the deliverable D5.5.

Table 1: List of deliverable authors

CRFS Living Lab	Partner no	Partner name	Contributors' names
1-Brugge	3	GEMEENTEBESTUUR BRUGGE	n/a
1-Brugge	3a	LTP - Ruddersstove	Annelies Feurbaey, Lieven Astaes
1-Brugge	3a	LTP - Mintus	n/a
1-Brugge	4	VIVES University College	Barbara Plovie, Sam Van Damme
2-VelicaGorica	8	Razvojna agencije Grada Velika Gorica VE-GO-RA	n/a
2-VelicaGorica	9	Inventivna rjesenja	Mario Konic
3-Troodos	7	EREVNITIKO IDRIMA P.L. (UNRF)	n/a

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

3-Trodos	36	UNION OF CYPRUS COMMUNITIES	n/a
4-Vejle	10	VEJLE KOMMUNE	Ida Haarby Drevald
5-Seinäjoki	12	Into Seinäjoki Oy	Elina Koivisto
5-Seinäjoki	13	PROAGRIA ETELA-POHJANMAA RY	Terhi Välisalo, Asta Asunmaa
6-Bremenhaven	15	Magistrat der Stadt Bremerhaven	Claudia Harms
6-Bremenhaven	16	Verein Zur For. Des Tech. An Der Hoch. Bremerhaven Ev	Linda Böhm
6-Bremenhaven	17	BIOZOOM GMBH	Darleen Genuttis
7-Quart de Poblet	18	AYUNTAMIENTO DE QUART DE POBLET	Dana Maini, Alberto Martínez
7-Quart de Poblet	19	SOCIALINNO LABS	n/a
8-Vidzeme	24	VIDZEME PLANNING REGION	n/a
8-Vidzeme	25	LATVIAN LAUKU FORUMS (LLF)	Zane Siliņa
9-IASI	28	CITY HALL OF IASI	Popisa Mihaela
9-IASI	29	Academia Romana – Filiala Iasi	Codrin Dinu Vasiliu, Ioan Sebastian Brumă, Lucian Tanasă
10-Murska Sobota	30	ITC – INNOV. TECHNOLOGY CLUSTER MURSKA SOBOTA	Tomaz Zadavec
10-Murska Sobota	34	Mestna občina Murska Sobota	n/a
11-Vicenza	32	COMUNE DI VICENZA	Mara Mignone
11-Vicenza	32a	LTP - La Vigna	Chiara Guglielmi
11-Vicenza	2	EPC - European Project Consulting Srl	Raffaella Lioce, Francesca Borga
11-Vicenza	1	Ca' Foscari University of Venice	n/a
12-Haarlem	33	STICHTING VU	n/a
12-Haarlem	41	Gemeente Haarlem	Christiana van Lammerren
13-Venice	38	UNIVERSITÀ IUAV DI VENEZIA	n/a
13-Venice	2	EPC - European Project Consulting Srl	n/a
14-Cilento region	23	FUTURE FOOD INSTITUTE	Elisa Carioli
15-CITAG	40	Cité de l'Agriculture	Vincent Kulesza
16-Arganda	20	UNIVERSIDAD POLITECNICA DE MADRID	Ramon Alcarria
17-Wine@Sico	37	Primelayer, Unipessoal, Lda	Pedro Caridade

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

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3. CRFS Living Labs SMART Goals and Action Plans [M25-M48]

The piloting CRFS Living Labs have gathered data and intelligence, analysed data, debated with stakeholder members, drawn conclusions, tested the conclusions with stakeholders, and co-created the action plan for themselves for the remaining 24 months of the project and beyond.

3.1 1-Brugge

1. CRFS vision 2030 and challenge statements

Region: Brugge is a historic Belgian city at the North Sea with 118K inhabitants. A blend of industry, tourism and care facilities & institutions. Culinary hotspot with 10 Michelin stars and 2 famous cooking schools. This action plan for the experiments of the Brugge Living Lab is based on the CRFS vision and challenges. We summarised it into 3 CRFS visions and 3 CRFS challenges, based on the climate-, food- and policy strategy of Brugge, added with the findings of the focus groups with the stakeholders.

Vision and challenges:

Brugge is a city where all inhabitants & residents are welcome and approached in an open and inclusive way. The food system is able to give every citizen easily access to food according to their needs & culture.

Brugge is a city region where it is healthy to work and live. So healthy food is accessible and promoted in order to support personal health & lifestyle, while contributing to the preservation of the environment.

Brugge is a city region where people do business with low impact on the environment. So the food supply is local and circularly organised. The process and the distribution is based on preserving the natural resources by using renewable energy.

2. Collaboration with stakeholders

Who are the 3 groups of main stakeholders? Our first group of stakeholders are the seniors (people who are between 66 and 98 years old). This group gave us insights and contributed to the ideation for the LL experiments we want to set up in order to meet the first challenge. This group is very interesting to include, because they are also our target group. The second group is the general public who is mostly addressed by the Foodlab of Brugge. We include them in a continuous process of open communication. We received input during events organised by the Foodlab. The 3rd group are businesses and companies who are active in the food supply. They have a huge impact on the CRFS as they play an important role in the supply chain.

3. Living Lab resources

In order to realise our vision & challenge statement, we go into permanent discussion with the target group. A contact list has been made for each of the stakeholder groups. For the biggest group, our seniors, we would definitely include all seniors. So we reached the active seniors by making a contact list from the community centres. The inactive seniors we could reach by making a list of all people receiving home meal delivery. We invited the potential participants by sending them a letter together with a leaflet of the project, linked to the topic where their participation & input is key to the process. We had several meetings.

Deliverable D5.5_Innovation action deployment programme and action plan

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We took the findings of these focus groups into account, but matched it with the outcome of the matching points from different existing policy plans. 'The Brugge multi-annual strategic plan 2019-2025, the 'climate plan of Brugge', the 'strategic food plan from the Brugge Foodlab' and the 'grant agreement Cities2030'.

4. Living Lab experiments

Experiment 1. Culinary variety upgrade on the spot

This first experiment is based on the first challenge: the food system is able to give every citizen easy access to food, according to their needs & culture. From the meetings with our target group, we understood that elderly people have access to a variety of food, but they miss out on the more 'culinary' experience because the meals are kept warm for delivery or are reheated in the microwave. Food that is served immediately after it's cooked, like a steak or freshly baked fish, would be an added value to their experience.

The aim of this experiment is to organise 'culinary variety meal upgrades on the spot' in public service centres on certain days. We hope to achieve two objectives. People eating together, out of their home, in a social environment would contribute to our first CRFS vision; All inhabitants & residents are welcome and approached in an open and inclusive way. It addresses the second Cities2030 key objective: Stop food poverty and insecurity. It covers thematics like consumption, livelihood, inclusion & equity.

The organisation of this experiment is quite challenging. The equipment and right people must be available in those moments in the public service centre, the communication to the target group must be appealing and inviting, and it has to be executed in a flexible manner, so we can adapt if we notice the need to implement changes. We will set it up and organise it once a week, for about a month. We can see and evaluate how popular this would be, how many people show up, how it's received, etc.

Experiment 2. Nutritional optimised meals with plant-based proteins

This second experiment is based on the second challenge: healthy food is accessible and promoted in order to support personal health & lifestyle, while contributing to the preservation of the environment. Again, the approach of this experiment is based on findings from the meeting with our target group, with the focus on vulnerable seniors. We want to experiment if the consumption of soups that are nutritional adjusted contribute to a more healthy, sustainable and positive way of living. It fits perfectly in the Protein shift and the more healthy and sustainable offer of meals.

The aim of this experiment is to offer soup or other dishes that are enriched with plant-based proteins to vulnerable seniors. In that way, we hope to enhance their health, their muscles and overall protein-intake without forcing them to eat huge amounts of food. By implementing it in dishes or meals they already know, it will be received more easily.

This experiment fits in our second vision: 'Brugge is a city where it is healthy to work and live'.

The Cities2030 key objective is 'secure healthy and sustainable food'. It covers thematics like consumption, livelihood, inclusion & equity.

For this experiment it is key to define which seniors would benefit the most from participating. Then, we need to define which products and brands have the best results and the best taste to include in the meals.

Experiment 3. Pilot study supplier vehicle sharing

This experiment is B2B oriented, but based on our third vision: 'People do business with low impact on the environment'. The challenge here is that 'the food supply must be local and is organised in a circular way. The process and the distribution is based on preserving the natural resources by using renewable energy'. Brugge has an ancient centre area with a lot of hotels, pubs, tearooms, restaurants and shops. To deliver those companies, a lot of suppliers bring the food, drinks and non-food items with big trucks or vans (with cooling) all the way through the small, ancient streets.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

In this experiment, we want to research if it would be possible to set up an 'electrical vehicle sharing platform'. The zero-emission vehicles with cooling, used for the meal delivery of the elderly, are used in the morning but are standing still and unused in the afternoon. Maybe we can set up a collaboration with other firms to share those vehicles. The aim is to create a delivery system in the city that is more sustainable, with a lower impact on CO₂. In that way, we contribute to Cities2030 key objectives 'Enhance circularity and local food belts' and thematic working group 'processing' and 'distribution'.

We will investigate which companies are willing to set up a test pilot and try to convince them to cooperate. When the experiment is running, we can easily calculate the CO₂ impact on the environment.

Experiment 4. Home delivery by bike

In this experiment, we combine vision 2 and 3: 'Brugge is a city where it is healthy to work and live & people do business with low impact on the environment'. This is a relatively big experiment, but the aim is to centralise the meal home delivery system for the elderly. By bringing the meals to a central service centre and organising the delivery from there, we can deliver the people in that area by cargobike. In that way, the delivery is more sustainable and it will lower the CO₂ impact, but also, if the experiment is successful, it would imply that less cars are needed for the normal delivery system. It helps to raise awareness about ecological delivery.

The target group here is the general public (employees & workers) & seniors. This zero emission way of delivery will impact the environment in a healthy way, but it will also have a positive impact on the employees. Instead of driving a car, they will be riding a bike. In that way, this experiment tackles the Cities2030 key objective 'secure healthy and sustainable food', 'protect and preserve natural resources' and it works on thematic groups 'distribution', 'ecosystem services' and 'livelihood'.

The approach of this experiment is to define a region around a service centre where an amount of home meal delivery customers are living. There has to be an investigation about the possibilities of the cargo bike type, and that will allow to put all the logistic measures in motion. All actors and clients will have to be informed and aware of the expectations.

When it's successful, it can be scaled up to other regions and other service centres.

Experiment 5. Food for thought (intergenerational meal happenings)

Every person has a story. Elder people have more stories. This includes a lifetime of experience in how they prepared food, what is healthy to them and what makes them happy. We aim to interview the elderly in community centres in the context of a course on food and social work. In the next event with primary schools, the elders are encouraged to read their life's food story to the children in order to inspire them with life lessons through sensitising them to the importance of food. In the second phase, the project looks into perhaps sharing cooking classes with an assigned "food granddad or grandmother" in the school's canteen kitchen. In the third phase, we look into the potential of printing a book of "old lost recipes" in line with lost local traditions.

5. Other Living Lab's measures

At this point, we don't see other measures needed but constant re-evaluation will be important.

6. SMART Goals

SMART GOAL	AIM	NOW	GOAL
SMART GOAL 1	we want to increase the satisfaction about the food in general with vulnerable elderly	good, but with limitations of (re)heated meals	better by offering a possibility to variety
SMART GOAL 2	we want to increase the awareness about sustainable and ecological meal delivery	not top of mind within the target group	significant increase of knowledge
SMART GOAL 3	We want to offer more soups enriched with additional plant-based proteins that are taken and validated for large scale production.	no enriched soups or components are offered at the moment	at least 2 components are implemented in the daily meals on large scale
SMART GOAL 4	With experiment 2, we aim to significantly raise the knowledge by the elderly of the nutritional value of meals enhanced with plant-based proteins.	now there is no knowledge or acceptance of the added value from extra plant-based proteins in meals	more people that are aware of the benefits from added plant-based proteins.
SMART GOAL 5	We want to start cooking sessions with the guest cook in the community center	no sessions	2 sessions / week
SMART GOAL 6	With experiment 3, we aim to significantly increase the knowledge with distributors in order to increase shared transport vehicles for food delivery to decrease the CO2 pollution	There is no knowledge of the possibilities	all of our suppliers have heard about the possibilities
SMART GOAL 7	We want to set up a durable arrangement with at least 2 suppliers in sharing the electrical vehicles	no suppliers are using the vehicles	2 suppliers are using the vehicles for their delivery
SMART GOAL 8	With experiment 4, we want to increase the amount of driven kms by bike and stimulate movement for the health of our delivery drivers	no delivery by bike, so no kms are performed in a day.	The delivery driver has to drive 30 km a day.
SMART GOAL 9	With experiment 5, we aim to significantly increase the amount of elderly people coming for the first time to elderly care centres in order to strengthen their mental resilience	there is an average of only 2 new seniors per service center in a month	there are 10 new seniors coming in for the first time every month
SMART GOAL 10	With experiment 5, we aim to significantly increase the amount of shared food activities for elderly people and youngsters	now there is no such thing	a durable set up of activities to connect the elderly with young people

7. Communication, dissemination and exploitation

The partners of the LL Brugge will post the outcome of each experiment on their website as a news item. Also, as for internal communication, the employees will be informed about the experiments as they are ambassadors of our organisations.

Ruddersstove will make a monthly newsletter during the experiment period with an estimated duration of 3 months per experiment to inform the involved target group. So this will be at the start, intermediate and at the end of each experiment.

A closing event will be organised at the end of the project period to disseminate to representatives of the 3 target groups. The report will be offered to the stakeholders of our Policy lab as inspiration for the coming elections.

8. Continuity- and scale-up measures

For experiment 1, a business model will be developed with the target to be break-even. Additionally, a roll out plan will be made up to implement the concept to our 12 social service centres. For experiment 2, we

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

will study the possibility to integrate plant-based proteins as an enrichment tool in other meal components than only soup, thus more impact will be realised.

For experiment 3, a sustainable business model for last mile delivery to lower the CO2 in Brugge will be necessary before scale up. When the experiment is positive, not only suppliers connected to Riddersstove will get access to the ZE vans. We will cooperate with a lease company to roll out the formula to other cities. For the continuity of experiment 4, we will invest in more E-cargo bikes if the SMART goal for this experiment is reached. Cooperation with non-food/parcel deliveries will be studied in the historic part of the city of Brugge. About experiment 5, we will try to turn this experiment into an extracurricular/after-school activity offered to the schools of Brugge. To lower the cost, ingredients will be offered by the social food distribution department of Riddersstove.

9. Risk assessment

Barrier / risk / limitation	High / medium / low	Elimination strategy
Lack of interest of the target group of the experiment	high	strong communication plan
High cost price of food or plant-based proteins	middle	looking for substitutes who are less expensive
lack of accommodation to execute the experiment	high	adapt the set-up of the experiment

3.2 2-Velika Gorica

1. CRFS vision 2030 and challenge statements

Our vision is to develop an efficient nutrition system of the Velika Gorica city and Zagreb county based on connecting consumers, strategic partners, civil society participants (existing and start-up companies), innovators and leading universities. The challenge we are facing is in connecting stakeholders and creating a functional CRFS and ecosystem in which all actors can define their needs and possibilities; this can bring in joint effort in creating a CRFS that has a more self-sustaining food supply system. The main issue we have identified is the non-existence of any cooperation between 10 stakeholder groups defined by Cities2030.

2. Collaboration with stakeholders

Main "stakeholder pool", in which LL nourishes multi-actor, participatory, open, gendered and responsible innovation activities, is called 2nd core team. It was assembled in July 2022 and consists of key players of our CRFS. Once a month this team gathers, presents major challenges and offers different perspectives and actions to be delivered as a response to CRFS's shortcomings. These discussions are done in a manner where every speaker, their perceptions and propositions are accounted for but at the same time, revised by different perspectives in order to test if the proposed solution stands. In the future work of this team, we expect to pool in more key stakeholders, which can contribute to LL objectives.

3. Living Lab resources

For the last 20 months, 2 partners (P8 and P9 make the so-called 1st core team) had weekly meetings and continue to have them. 4 people are actively engaged and considered as the main resource of LL Velika Gorica. Other resources, such as venues for meetings and presentations for stakeholders, are provided by P8 and bigger venues will be rented, which is already budgeted in costs of both partners. Noting that, depending on activities, possible small investments outside the Cities2030 grant are to be expected from Zagreb County. Other resources needed for LL are external experts, which will provide capacity building for selected stakeholders (primarily food producers and consumers/citizens) by workshops and other forms of informal education. Innovation facilitator is internal (P8) and she acts as a scanner for good examples and

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

suggests it to the rest of the 1st core team on a weekly basis, and then it is discussed if the topic can be used for our CRFS improvement.

4. Living Lab experiments

1. Discovering an interest for a new website, which aims to connect consumers and producers

We are testing the interest and need of producers and consumers for a website that would be a central point of connecting those two groups of our local CRFS. Objectives are, 1) to find out if there is an interest and need for creating a website on which consumers can discover, locate and contact local producers, and, 2) if there is a need and interest for local food producers to provide such information and to test what type of information would be useful for them (e.g. public tenders). In later stages, we would like to test if there is a need for a real virtual market. This experiment contributes to Cities2030's key objectives "Enhance circularity and local food belts" and is associated with Cities2030's 2 thematic working groups: production and consumption. First hypothesis is that producers are interested in new channels of sale. Second hypothesis is that consumers are interested in buying local food instead of buying any food in traditional places. Monitoring system consists of processed data gathered from questionnaires and will be used as a main input for making decisions to go with building a website (and how) or not. Timeframe for the experiment cycle: Ideation – 10/2022; Building – 10/2022 to 12/2022; Monitoring – 1/2023; Learning – 1/2023.

2. Zagreb County ECO school scheme

We are testing the interest of schools in participating in the ECO school scheme. The selected school should be a participant in both the national and ECO school scheme in order to determine the organisational differences and benefits of the regional school scheme compared to the national school scheme. First objective is to determine if the procedure of buying food can be simplified for the school's administrators. Second goal is to determine if food suppliers are willing to be a part of the regional school scheme. This experiment contributes to Cities2030's key objectives "Secure healthy and sustainable food" and associates with Cities2030's 3 thematic working groups: production, consumption and ecosystem services. Hypothesis is that, if a County takes over the schools' scheme financing, organising and monitoring, this institutionalised model of providing healthy foods to young citizens can be improved. Target groups are representatives of Zagreb County and City Velika Gorica representatives, kids and administrative staff of one Velika Gorica elementary school, local organic food producers. We will monitor data from questionnaires and find out the differences (pros and cons) between the standard national schools scheme and regional ECO schools scheme. Timeframe: Ideation – from 01/2023; Building – 02/2023 to 04/2023, Monitoring – 05/2023 and Learning – 05/2023.

3. Possibilities of connecting food donors and organisations for distributing food to socially vulnerable groups

This experiment is about testing if lab activities can influence better social sensitivity of potential food donors and about connecting food donors with organisations that collect and distribute food to socially vulnerable groups. This experiment contributes to Cities2030's key objectives "Stop food poverty and insecurity" and is associated with Cities2030's 6 thematic working groups: markets, consumption, waste, security, ecosystem services and inclusion/equity. The question of the study is: is it possible to create a social supermarket in Velika Gorica. Our hypothesis is that if all stakeholders are interested, there's a chance in creating such service. We assume that there will be enough donations that can keep the system running. The target groups are citizens, local food stores as donors and local NGOs. The monitoring system will measure the increase in the number of donors compared to the initial state and/or the amount of donated food and/or the number of beneficiaries. Timeframe: Ideation – 11/2022; Building – 12/2022 to 1/2023; Monitoring – from 1/2023; Learning – to 2/2023.

4. Strengthening the role of citizens in the city's food system through institutionalised linking of production and consumption

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

This experiment is about finding out what citizens know about CRFS, their preferences toward locally grown food and if they are willing to be the actors of our CRFS by introducing them in CSA examples. Educational activities will be held at gastro events organised by the city of Velika Gorica. This experiment contributes to Cities2030's key objectives "Develop food culture and skills" and is associated with Cities2030's 6 thematic working groups: production, consumption, security, ecosystem services and livelihood/growth. Study questions - 1) are citizens informed of the state of our CRFS and 2) are they interested in being more involved in CRFS development. The hypothesis is that the optimal way of including citizens in CRFS is by nudging them into being active in community supported agriculture activities formed by LL. The monitoring system consists of processed data gathered from questionnaires and will be used as the main input for creating the content of education. Timeframe: Ideation – 10/2022; Building – 11/2022; Monitoring – 11/2022, Learning – 12/2022.

5. Rural lab for producers

This experiment asks if local food producers can be empowered by providing them with tailored educational courses. The target group of the experiment are local food producers for which we will provide education that can build their internal capacities. The goal is to have a minimum of 10 participants per module which will be prepared by an expert. Topics will cover themes on entrepreneurship, marketing, accounting, planning and collaboration. This experiment contributes to Cities2030's key objectives to Secure healthy and sustainable food and Develop food culture and skills, and is associated with 3 Cities2030's thematic working groups: production, ecosystem services and livelihood/growth. Timeframe: Ideation – 12/2022; Building – 02/2023 and 3/2023; Monitoring – 3/2023; Learning – 3/2023.

5. Other Living Lab's actions

Establishing a supply chain monitoring system; Short value chains and locally produced food – how can the city/region/country procurement be a lever for more consumption of local food; Connecting food producers by showing them the benefits of collaboration; Creating a plan for self-sustainability associated with the plan/strategy of Velika Gorica city and Zagreb county's policies and goals; Creating environment and delivering know-how to particular stakeholders which can produce food for themselves.

6. SMART Goals

Indicator (described as goals, using SMART methodology)	Now	Goal
Design and conduct a survey that will include 20 producers and 30 consumers in order to find out their interest in creating a website	0 interviewed producers; 0 interviewed citizens	20 interviewed producers; 30 interviewed citizens by end 01/2023
Verification of the local organisation of the school scheme in which local and ECO agricultural producers will be involved - at least one school and one kindergarten included in the pilot project and at least 50 children/students	0 schools; 0 kids	1 schools; 50 kids by end of 05/2023
Measuring the increase in the number of donors compared to the initial state and/or the amount of donated food and/or the number of beneficiaries.	0 donators; 0 portions of food; 0 users of social supermarket	1 donator; 2 portions of food; 2 users of social supermarket by end 02/2023
Survey minimum 30 citizens on knowledge of the food system, test the interest in lectures on "community supported agriculture", monitor the number of presenters before/after lectures	0 interviewed citizens, 0 lectures held, 0 food presenters	30 interviewed citizens; 1 lectures held; 1 food presenter by end of 12/2022

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Organisation of 5 entrepreneurial modules for local entrepreneurs. The goal is to have a minimum of 10 participants per module	0 modules held; 0 educated entrepreneurs	5 modules held; 50 educated entrepreneurs by end 3/2023
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7. Communication, dissemination and exploitation

Living Lab has a few channels, which are used for communicating LL activities/experiments and dissemination of the project. Those are the webpages of partners, the webpage of the city of Velika Gorica, local news portals (2-3 of portals) and physical materials that are shared (roller banners, A4 flyers, promo material). In some cases, A3 posters will be used as well. There is a Facebook page in preparation as well.

8. Continuity- and scale-up measures

It is very important to emphasise that this action plan develops activities for the next 8 months. This is a piloting phase in which we want to confirm some major assumptions and learn from these experiments. When this phase is over, all LL activities will be fine tuned. To support continuity, we expect Zagreb County to open a clinic for rural development.

9. Risk assessment

Major risk we anticipate could happen is the low level of response from our citizens. Although that probability and severity is medium, we will answer on that by personally contacting stakeholders if possible, gathering input from them personally by interview.

Another risk is getting information on activities to food producers via digital media. The severity of this risk is medium-like probability. If we see only a few producers show up to the educational courses, we plan to make a campaign with printed materials which will be carried out in rural areas.

3.3 3-Troodos

1. CRFS vision 2030 and challenge statements

Write here..

2. Collaboration with stakeholders

Write here..

3. Living Lab resources

Write here..

4. Living Lab experiments (5+)

Write here..

5. Other Living Lab's measures

Write here..

6. SMART Goals

Write here..

7. Communication, dissemination and exploitation

Write here..

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022



8. Continuity- and scale-up measures

Write here..

9. Risk assessment

Write here..

3.4 4-Vejle

1. CRFS vision 2030 and challenge statements

Vision: "In Vejle, we want to show the way towards a more sustainable food system and take the lead in finding solutions that address global challenges – and that work in our local context. A sustainable food system contributes to our municipality's overall resilience, and we want to actively use our municipal platform to stimulate new solutions and innovation".

Challenges:

- In Vejle, as in many other places, we currently have too much food waste.
- We also consume foods and diets that are produced unsustainably.
- And, we are part of a food culture that contributes to more people suffering from lifestyle diseases, such as obesity and diabetes. There is a big difference in how citizens and social groups relate to food and sustainability. It is about knowledge, about skills, culture and socio-economic position.

2. Collaboration with stakeholders

Mobilisation of networks and partners: Engaging different stakeholders and involving them in activities help to define and shape experiments, based on their knowledge and understanding of needs. To strengthen and connect our current collaborations and networks.

Dialogue on policy and strategy levers: Involve public actors across our municipal administration, and seek to place the sustainable food system high on our political agenda. We work on a regional level and national strategic forums.

Experiments and innovation: We want to work towards tangible solutions that take us forward. We do so by stimulating iterative development processes with stakeholders that are related to our identified topics and interests.

There is a focus on creating Active synergy between politics and strategy on the one hand, and experiments and innovation on the other hand. It is through results and tangible solutions that we take actual steps to implement change.

3. Living Lab resources

To replicate the planned experiments that take place in the Cities2030 project, we need additional funding. There is a great demand for working with creativity and innovation among school students. We see a great effect and great potential in cooking competitions, where the best chefs work innovatively with local producers and local ingredients. It has great significance for restaurants and professional kitchens. On that note, we find it relevant to replicate the projects.

The total project team consists of:

Per Mandrup, food expert and network manager with responsibility for mobilising and engaging external and internal stakeholders. Per has a background in both gastronomy (a trained chef) and with technological

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

and business service to food companies. He is also an experienced teacher. Per is the daily manager of Culinary Institute.

Ida Haarby Drevald, knowledge and activity manager with responsibility for coordinating Living Lab activities, including planning, holding and documentation. Ida has recently completed a masters degree in pedagogy and, as a trained teacher, is experienced in facilitating learning and handling group dynamics.

Maibrit Lajgaard, quality manager and project controller with responsibility for finance and compliance, as well as possible synergy with other projects. Maibrit is a trained engineer in business development and experienced with both company acceleration, green business models and project management.

Morten Damgaard ensures the strategic integration of the project in the municipality's political work and promotes political visibility of the sustainable food system agenda. As the executive director of the department, he will lead the signing of the mayor's declaration MUFPP.

4. Living Lab experiments

Short description	The purpose	Cities2030 Specific objective	Thematic group	Target groups	The monitoring system	Timeframe
VM in Hotdog "Vejle championships in hotdogs" is a competition for elementary school students. The purpose of the competition is to get the students to rethink the classic hotdog based on the criteria: climate, health and taste. The students get the opportunity to express their creativity and innovation. The competition also provides learning material that the teachers can use in class.	The purpose of the event is to strengthen the students' understanding of the climate and their ability to explore their innovative sides. The main goal is to get the students to think and understand more about climate-friendly food. In addition, we also work with local sponsors, which means that we can highlight local producers through the event.	1. Secure healthy and sustainable food 2. Develop food culture and skills	1. Consumption 2. Ecosystem service 3. Production	School pupils in Vejle Municipality	We can't measure CO2 emissions directly in the short term. We can measure interaction on our SOME and websites via google analytic	Idea phase: February – March 2022 Build: March – May 2022 Implementation / monitoring: June 2022 (The event was hosted the 11 June 2022) Learn: June – July 2022 We will repeat the event in Jun. 2023
The inlet on the table: "Fjorden på bordet" / "The inlet on the table" is an event that takes place several times in different locations. For the event, we are handing out taste samples of soup made from invasive species from Vejle Fjord (Vejle inlet). For the event, we collaborate with local associations. At the event, we bring the message that the ecosystem in Vejle	The purpose of the event is to inspire others on how we can improve the ecosystem in Vejle Fjord (Inlet). It can both be referred to companies and others.	1. Enhance circularity and local food belts 2. Develop culture skills	1. Production 2. Markets 3. Consumption	Politicians, companies + the general citizen.	Same as the first experiment	The event was hosted over the period 13 June to 2 September. 2022. The preparation already took place in May 2022. We will repeat the event in January 2023

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Short description	The purpose	Cities2030 Specific objective	Thematic group	Target groups	The monitoring system	Timeframe
Fjord (Vejle inlet) is very challenged. We present the general citizen with an innovative idea for how to solve the problems in Vejle Fjord.						
Local Cooking: Local Cooking is a cooking competition where local chefs from the Triangle Region have to cook the best dish with local ingredients. Through storytelling, the chefs have to give the judges a well thought and thrilling description of the dish and the choices behind it.	The goal is to spread the message in the culinary field to use more local ingredients and emphasise the farmers and their work.	<ol style="list-style-type: none"> 1. Secure healthy and sustainable food 2. Develop food 3. Culture and skills 	<ol style="list-style-type: none"> 1. Consumption 2. Ecosystem service 3. Inclusion equity 	Chefs, Culinary Students of restaurants	Same	Idea phase: April 2022 Build: May – June – July - 2022 Implementation/ monitoring: August (The Event was hosted the 28 of August) Learn: September 2022 We will repeat the event in August 2023
Christmas Calendar about food waste: The Christmas calendar consists of 24 sections, where each section contains a food waste tip that shows how you can use leftovers from Christmas.	To spread the message about avoiding food waste at Christmas time. Improve the circular economy.	<ol style="list-style-type: none"> 1. Enhance circularity and local food belts 2. Develop food 3. Culture and skills 	<ol style="list-style-type: none"> 1. Waste 2. Production 	Professional kitchens, public kitchens, ordinary citizen	Same	We already started last year and will continue the production of videos in Oct. and Nov. 2022 and show them on our Instagram in December 2022.
Gastro Days: Gastro days is a series of events aimed at employees in Food Service. The employees are going to be introduced to a number of local producers and chefs who will inspire them to work more sustainably.	Create sustainable kitchens in public institutions, nursing homes and canteens in Vejle.	<ol style="list-style-type: none"> 1. Secure healthy and sustainable food 2. Develop food culture and skills 	<ol style="list-style-type: none"> 1. Production 2. Waste 3. Consumption 	Professional kitchens, public kitchens	Same	Idea phase: Sep. Okt. 2022 Build: May – Nov. 2022 Implementation / monitoring: 2023 Learn: Jan. 2024

5. Other Living Lab's measures

The Potato Week (week 42, oct.): A campaign where all public kitchens must serve potatoes instead of pasta and rice + activities with children about potatoes.

The Potato Award 2022 (23 oct.): A large and recognized cooking competition for the best chefs in Denmark. The chefs must serve a starter, main course and dessert where the potato is at the centre of the dish.

Climate day in Vejle (Jan. 2023)

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

6. SMART Goals

Specific: Our goals are contributing towards given targets for climate action and sustainable growth. Food as climate action: Vejle wants to reduce the Co2 emission from unsustainable food production and consumption. We want to impact through 1) Awareness and knowledge on how to live and consume climate friendly food. Food and sustainable growth: Vejle wants to be a spearhead for a future fit food industry and show how sustainable food is a sound business idea. 2) Local food products and short supply-chains. 3) Food and social resilience: Vejle wants to ensure that food is a part of our local identity and social cohesion. 4) Food skills for all.

Measurable: We have better knowledge about climate-friendly food. We have new ideas for how we use local ingredients in restaurants and professional kitchens. We have some concrete skills for how to solve food waste and improve the ecosystem in Vejle Fjord.

Achievable: The goals are attractive because we are in a situation where we have to act on more sustainable food systems. **Realistic:** We use our skills, network and know-how.

Timely: We spend the next two years doing Cities2030 activities, but continue to work with the goals.

7. Communication, dissemination and exploitation

All experiments are disseminated on the Culinary Institute's website: <https://culinaryinstitute.dk/> and social media: Instagram, Facebook, Youtube and LinkedIn. Through this, we can see how many people it reaches via Google Analytics.

8. Continuity- and scale-up measures

We would like to expand the experiments, which can be done by searching for national funds.

We could host "Fjorden på bordet" in several cities. We could spread the "VM in hotdog" to all schools in the country. We could make a new "Christmas calendar about food waste" every year or disseminate it on several holidays, for example Easter. We could make the Potato Award bigger with chefs from the Nordic countries. We could make the Potato Week a national event.

9. Risk assessment

There is a risk that the experiments cannot be repeated, due to time and money. We can also risk that there is not a good connection to the experiments. There may be a risk that there are no longer any problems in the fjord.

3.5 5-Seinäjoki

1. CRFS vision 2030 and challenge statements

Region. The Food Province of Finland (South Ostrobothnia), and its capital Seinäjoki, is a home to a nationally significant concentration of the food sector and food industry.

Vision: The City of Seinäjoki region's CRFS future vision 2030 is to be the Food City of the Nordic Countries. The City of Seinäjoki is Finland's strongest cluster of primary production and food industry. Diverse know-how, education, food logistic, governing skills improvement and national as well as international co-operation networks support the cluster's success and food system development in general. The City of Seinäjoki strengthens the city's food culture. Raising the amount of food export is a great possibility to the

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

city and for the whole Food Province of Finland. The City of Seinäjoki does the work with the determined value of responsibility, which includes responsibility of its inhabitants and enterprises, security, equality and sustainable development. (City of Seinäjoki, strategy 2018-2025)

The Cities2030 project will focus on the further development of a resilient and sustainable Seinäjoki City Region. More focus will be drawn into the themes of resiliency and sustainability of the food system. The co-operation and the exchange of information about sustainability will be developed among the actors. The city region's innovation potential and decision-making system will be harnessed to lead the ecological transition (low carbon, biodiversity) in the food sector and bioeconomy. The project's aim is also to improve consumer knowledge and increase consumer orientation in the product development of the food sector, especially within the themes of children and youth, nutrition and inclusion.

Challenge statements.

- The greatest challenge is to change the working culture to take in consideration the resilience and sustainability in all issues in the Seinäjoki city region food system.
- The Cities2030 project especially focuses on understanding the multifaceted role of nutrition in the overall health and well-being of residents, especially children and youth. At the moment, there are many actors that do not see their responsible role in children and youth's nutrition or do not see the possibilities to improve their work with it.
- There is a challenge to create food-related acts, that take in consideration the children and youth's opinions and, even further, change their roles from objects to actors in the city region food system (inclusion).

2. Collaboration with stakeholders

Seinäjoki pilot coordinates and implements four different Living Labs. Stakeholders engaged for those at the country level are the Ministry of Agriculture and Forestry of Finland, the City of Tampere and Tampere University of Applied Sciences. At the Regional level, the stakeholders are The City of Seinäjoki and the Healthy Kids of Seinäjoki steering group. Stakeholders in the Living Labs are chosen to enhance the multi-actor and participatory role of actors. The chosen stakeholders for each Living Labs separately are:

<p>The healthy snacks kiosk "Mahti-kiska"</p> <ul style="list-style-type: none"> • Seinäjoki soccer club SJK juniors • Seinäjoki Finnish baseball club Maila-Jussit • Grocery shop chain Eepee 	<p>The Food Business Club</p> <ul style="list-style-type: none"> • Junior high school "Seinäjoen lyseo" • 4H youth entrepreneurship, local association • The City of Seinäjoki • Municipality's health inspector
<p>Kids' Culture Festival "Pikkuprovinssi" into Culture and Food Festival</p> <ul style="list-style-type: none"> • The Pikkuprovinssi organising team from the City of Seinäjoki's culture department • Local farmers and food-related entrepreneurs • The Garden Club of the Province of South Ostrobothnia • The Association of the Community Garden Area of Seinäjoki 	<p>The School Canteens into Restaurants</p> <ul style="list-style-type: none"> • School restaurant environment development group • The student boards of the pilot schools

3. Living Lab resources

The pilot actions follow the idea of the quadruple Helix approach: there are stakeholders from the public sector, research, citizens, and companies. The Seinäjoki Team of Cities2030 (Including P12 Into and

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

P13Agria) works tightly together: one of the Team Seinäjoki members leads each lab, but all work in the background. Personnel to conduct actions are Elina Koivisto from INTO Seinäjoki (P12), Asta Asunmaa and Terhi Välisalo from ProAgria Etelä-Pohjanmaa / MKN (P13). There are allocated Living Lab resources in both of partners' budgets for consumables, external expertise, study visits and for other material.

4. Living Lab experiments

<p>1. The healthy snack kiosk "Mahti-kiska"</p> <ul style="list-style-type: none"> • Description of the actions: SJK junior's kiosk and local Finnish baseball association's pop-up-kiosks development • Objective is to improve healthy snacks and aim for better nutrition and empowerment of kids • LL experiment contributes to "Secure healthy and sustainable food" key objective • Thematic working groups: consumption and inclusion • Aim is to develop and enforce principles of engagement children, but also public actors and the private sector actors that produce food and beverages, to identify the incentives and disincentives that encourage actors across • To monitor how they make their food choices, in addition to documenting better practices and lessons learned promoted by children themselves • Timeframe: ideate (8-12/21), build (1-12/22), monitor (1-12/23), learn (1-6/24) 	<p>2. The Food Business Club</p> <ul style="list-style-type: none"> • Description of actions: New business hobby club for youngsters in Seinäjoki lyseo junior high school • Objective is to teach pupils to understand the importance of the circular economy and the utilisation of waste raw materials, importance of entrepreneurship education and highlight the cooperation • To monitor students' interest in utilising waste and earn their own money with it. Check whether the cooperation will be successful. • Timeframe: Service design (10-12/22), selling the idea to students and assembling the group. Education and training (1-3/23). Practice preparation (4-5, 8-12/23). Formation of a next group (8-12/23)
<p>3. Kids' Culture Festival "Pikkuprovinsi" into Culture and Food Festival</p> <ul style="list-style-type: none"> • Description of the actions: Existing children's culture and art happening "Pikkuprovinsi" will include the third theme – "food education" – in its program • Objective is to 1) create a new platform, children's festival, to do food education, 2) have the first festival in Finland, where the children are a special target group of the food theme, 3) strengthen the role of "The Food Province of Finland" by being the leader of the kids' food festivals • Theme of the action: includes food education related experiments, experiences and information about farming and domestic food growing for kids • Timeframe: Pikkuprovinsi 15-20.5.2023 	<p>4. The School Canteens into Restaurants</p> <ul style="list-style-type: none"> • Description of actions: Will to improve student's comfort and enjoyment of the food. Participate in a well-being working group and consult an interior designer. Involving the students speaking about for their ideas for a more comfortable dining area • One old school cantina tuned up • One newly built school's restaurant planning process • To monitor: can comfort influence the willingness to eat properly • Timeframe: 10/23, 2023-2024

5. Other Living Lab's measures

In order to have the work continued when the Cities2030 project is over, work needs to be done to have new excited actors to keep on working with the themes, create proper business plans and calculations or solve financing models of the acts prepared in the project. These actors and models should be found not

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

only from the City of Seinäjoki Area, but from the entire European Union. To achieve this goal, there is a need for a vast amount of co-operation, negotiations (e.g. Policy lab actions) and information sharing.

6. SMART Goals

Monitoring the food choices of children and parents, by collecting comprehensive information.

Healthy snacks kiosk: Four pilot kiosks done in different environments. Ensure that snacks provided to children by sports clubs are good nutritional quality and sustainable.

The Food Business Club: Encourage young people to become sustainable entrepreneurs and promote food industry and network with food companies.

Kids' culture festival "Pikkuprovinssi" into Culture and Food Festival: Create a sustainable food education content into the festival.

The School Canteens into Restaurants: Develop and innovate with children to create food canteen premises to be more attractive and more restaurant-style in order to support healthy eating.

Communication goals: 4 Youtube videos, 5 workshops, 8 blog posts, 8 press releases, 1 study visit.

7. Communication, dissemination and exploitation

Regular communication on activities to the Healthy Kids of Seinäjoki Steering Committee. Internal communication of Into and ProAgra/MKN on a daily basis. Disseminate the results to the public, stakeholders and decision makers in Seinäjoki but also in the EU area. Result-oriented analysis and real time interventions to ensure dissemination and communication actions are advancing and conducting the planned actions.

8. Continuity- and scale-up measures

The healthy snack kiosk "Mahti-kiska" <ul style="list-style-type: none"> Producing multiple short videos of the Healthy Snacks, Nutrition of kids, and instructions to establish a healthy food kiosks to events 	The Food Business Club <ul style="list-style-type: none"> One hobby club for youngsters in Seinäjoki lyseo junior high school
Kids' Culture Festival "Pikkuprovinssi" into Culture and Food Festival <ul style="list-style-type: none"> Cooperation with the labs with the theme city farming 	The School Canteens into Restaurants <ul style="list-style-type: none"> Improving the atmosphere of the school restaurants, increasing comfort, calming the dining situation

9. Risk assessment

All the Living Labs contain plenty of new ideas and new sights. There is a lot of new culture to launch in actors' work. It is a challenge for the labs to ensure actors change their ways.

3.6 6-Bremerhaven

1. CRFS vision 2030 and challenge statements

The general challenge is to support the development of a fair and regional food supply, especially in schools, colleges and kindergartens to promote a healthy lifestyle, support regional food producers and reduce waste with the aim of making Bremerhaven more sustainable. The idea is to start imparting knowledge as early as possible. In general, the knowledge and appreciation of CRFS must be increased within the citizens!

Based on the current situation in the region, the following priorities were chosen.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

1. **Consumers:** The consumer sub-challenge is to improve the regionality and sustainability of food and food products used in schools, colleges and kindergartens.
2. **Production:** The sub-challenge related to production is to increase the number of local customers and to facilitate the possibility to buy regional food and food products.
3. **Waste:** The sub-challenge related to waste is to reduce the amount of waste generated and the need for it.

2. Collaboration with stakeholders

The Bremerhaven Cities2030 team has already involved stakeholders from schools, producers, engaged citizens and external experts. More stakeholders ranging from caterers, producers, food processors, teachers, engaged citizens, external experts and more are expected to be involved. The close cooperation with the Bremerhaven Food Council also provides steady input from outside (from farmers, producers, etc.).

3. Living Lab resources

The constant cooperation between the three Bremerhaven Partners (P15, 16, 17) provides a constant exchange. The various activities of the 3 partners ensure continuous communication with the LL stakeholders. The resources for the experiments are secured through the budget of the three partners. However, the involvement of external partners is needed (external resources, e.g. working time of teachers, voluntary support of the food council).

4. Living Lab experiments

Experiments	working groups								key specific objectives						
	Production	Processing	Distribution	Markets	Consumption	Waste	Security	Ecosystem s.	Livelihood & growing	Inclusion	1 - Secure	2 - Stop food poverty	3 - Natural resources	4 - circularity & local food	5 - food and culture skills
Lehe in progress	x				x				x	x			x		x
Local bread for local kids	x	x	x								x			x	x
Kindergarden Waste recycling: My friend - the worm						x	x					x			x
Foodsharing fridge at the HS Bremerhaven							x				x	x			x
Casual Learning / Scavenger Hunt				x	x	x			x	x					x

Key specific objectives 1 = Secure healthy and sustainable food; 2 = Stop food poverty and insecurity; 3 = Protect and preserve natural resources; 4 = Enhance circularity and local food belts; 5 = Develop food and culture skills

1) "Lehe in progress" co-create a part of the participatory oasis „Pergolinchen“

Regular guided district walks on urban gardening: Activation and involvement of the population through an "excursion format". Each walk to a different place in the neighbourhood and doing or thinking about something together. One of the POI is the "Leher Pergolinchen".⁷

O&M	Involvement of the citizens via "excursion format", M: Number of participants; Development together with teachers a concept for an steady learning tool about sustainable and urban gardening, Number of teachers participating in Workshop
C	Lehe Neighbourhood Service, Leher Pausenhof, Schools

⁷The award winning Bremerhaven innovation „Urban Pergola“ was installed at a small scale in Bremerhaven Lehe as a green participatory oasis. Children, young people and residents can learn about plant growth, nutrient supply and "urban gardening" and get enthusiastic about it. The plants are planted with leaves or fruits that are suitable for consumption in the sense of urban gardening.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Q-H-A	Do people take responsibility for the “productive places” through this activation work? Are there people who are willing to do citizen science? Can the approach encourage pupils to adopt more sustainable eating habits? What is needed to integrate these issues into education?
TG	Students, People with ideas, Teachers
TF	Ongoing/running until March 2023

Key to above codes⁸

2) Local bread for local school kids – Lok-Lok-Schnitte (German)

Product development as co-creation with children and local bakery of a regional bread with added healthy value and target group-specific characteristics (children: no whole grains, soft consistency). Ideally with integration of “local superfood” or protein-rich legumes.

O&M	Development of the distribution and price structure as well as the costs in the local bakery (focus discussion). Results flow into PL; measurement of acceptance by the children. Preparation of a good marketing concept (by the local bakery), especially for parents
C	Local bakery, schools, food technologists
Q-H-A	Can bread that is developed together with children contribute to healthier eating habits? Can it also lead to a more sustainable local bread production in the long run?
TG	Children and young adults
TF	January 2024 to April 2024

3) Kindergarten waste recycling: My friend, the worm

Implementation of the Toolbox for recording of food waste in kindergartens of the consumer advice centre Bremen in combination/extension of the operation of a worm farm (new approach). Three day-care centres receive a worm farm and explore the formation of compost with their “own” waste over a period of 1-2 months.

O&M	Discover which food waste is suitable for an earthworm farm. How much waste was fed and thus “saved” (Circular Economy)? Easy questions for the kids at the beginning of the experiment and at the end, compare answers to see if knowledge has increased. Measurement of acceptance by the children and parents
C	Kindergartens, Consumer advice centre Bremen
Q-H-A	Can worm farms in kindergartens stimulate research? How great is the potential for participation and enthusiasm? Can a composter quickly become a normal part of everyday life and the daily disposal of organic waste – a nice ritual for the children?
TG	Children
TF	March 2023 to July 2023

4) Foodsharing fridge at the HS Bremerhaven

Display a Foodsharing fridge in the Bremerhaven University o.a.s., open to all students. Spare food (unopened and non-perishable) from the canteen & other people shall be placed there. Students can help themselves to it free of charge.

O&M	A social-sustainable way to reduce food waste, create fair access to food and raise awareness for food waste and a more responsible food handling. Encouraging personal initiative M: Number of fridge users (givers/takers). Throughout the experiment, information (Did you know that...?) is posted on the fridge. At the end of the experiment, the recurring Users are surveyed with a questionnaire
C	University of applied sciences Bremerhaven, Students-Association “AstA”

⁸ O&M=Objective & Monitoring; C=Collaboration; Q-H-A=Question, Hypothese, Assumption; TG=Target group; TF=Time fram

Q-H-A	Can a fridge like this help save food from being thrown away? Is this a good way to reuse food? Who will take long-term responsibility? How much of the information could be transmitted by this casual learning method?
TG	Students, University of applied sciences Bremerhaven
TF	August 2023 to November 2023 (last week in September > German Action Week "Too good for the bin")

5) Casual Learning/Scavenger Hunt

Scavenger Hunt with a focus on sustainable regional nutrition. A playful approach to nutritional knowledge with the free app Scavenger Hunt.de. A list of tasks within a set period of time has to be done via a free app. The players with the highest score are awarded attractive prizes, directly related to sustainable nutrition.

O&M	In a playful and fun way, interesting information on sustainable nutrition, regional food supply chains, cost structures (true cost accounting) and benefits for the local economy can be given to a broad target group. Monitoring: number of participants, evaluation of answers: number of questions answered and tasks solved
C	Bremerhaven University of Applied Sciences
Q-H-A	How good is the nutritional knowledge of the young urban society, where are the gaps? Is this approach suitable for conveying nutrition knowledge? How many people can we reach with this format?
TG	Young people, students Communication: Application via social media, PR
TF	Summer 2023 (2-3 months)

5. Other Living Lab's measures

Can the overall work in the LL generate new contacts and cooperation between people (volunteering, working in an already existing association, SME, NGOs, etc) in order to support a reconsideration? How many people will become members of the new food council over the duration of the experiments? How many people participate in the "Regulars' table" from the food council?

6. SMART Goals

SMART - description		GOAL*	SMART - description		GOAL*
E1	New, actively producing place, continuously managed	1	E4	People willing to share / to use (User)	40
	Stable working group & data collection (Citizen Science)	1		Reducing Waste in the university	10%
	Tool Box for schools "Urban Gardening"	1			
E2	Recipe from local raw materials	1	E5	Participants	65
	product in the bakery's assortment	1		Reaching minimum 50% correct answers (increase knowledge)	40
E3	Running worm farms	3	*to be reached at the end of each experiment		
	Tool Box for kindergarden "My Friend the Worm"	1			
	Reducing Waste in each kindergarden	10%			

7. Communication, dissemination and exploitation

Participation in existing regional communication formats: A) "Wissenschaft fürs Wohnzimmer": scientific presentation on youtube [Wissenschaft fürs Wohnzimmer - YouTube](https://www.youtube.com/watch?v=...), B) Scavenger Hunt: Cities2030-Project awarding ceremony, C) Science meets Public: entertaining lecture to a wide audience in a pub [SCIENCE GOES PUBLIC! - stadtmaking-bremerhaven.de](https://www.sciencegoespublic.de/), D) Distribution of beer mats in regional pubs with catchy slogans, E) "Regulars' table" together with the food council. Initiative of the German Federal Government: [Startseite - Zu gut für die Tonne \(zugutfuerdietonne.de\)](https://www.zugutfuerdietonne.de/). Supraregional media: Social Media, e.g. coop, with regional food bloggers. Reports in professional journals. Blogpost on regional websites. Classic communication strategy: press releases, regional media, trade fairs, conferences, events, flyers.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

8. Continuity- and scale-up measures

Win over the University of Applied Sciences to keep the food sharing fridge and support its purpose. Support the activities of the Food council to become deeply rooted in the regional CRFS via “food-space”. Implement more steady learning tools regularly used by teachers and educators as part of a curriculum on CRFS and sustainability in general. Change the current mindset: regional food is not more expensive or more difficult to reach. Regional structures have many advantages for our society and give benefits in social, ecologic and economic ways.

9. Risk assessment

All experiments require a high level of attention and thus resources from the stakeholders (time, money). If it is not possible to convince as many relevant stakeholders as possible of the vision, there is a high risk of failure. No acceptance by the stakeholders means no acceptance in the implementation of the experiments. The topic of “costs” is particularly sensitive and requires a high level of attention and, most likely, many communication resources. To minimise the risk, we reserve a lot of time for networking and communication. We also suggest creative ways of communicating so that people come into “smooth” contact with CRFS without frontal communication.

3.7 7-Quart de Poblet

1. CRFS vision 2030 and challenge statements

CRFS 2030 vision: A green and resilient city with short food supply chains in which people can produce and buy their own local and healthy food. A leading city in the field of urban farming in which democratic processes and citizen participation initiatives predominate.

Challenge statements:

- Quart de Poblet had traditionally been a mainly agricultural town, which experienced the process typical of towns near a large city with uncontrolled population growth and industrial settlements. Currently, there are 1073,1 hectares of agricultural land in the municipality. However, less than half of this land is cultivated and exploited. Regarding land tenure, most of the land is privately owned. The main problem identified is unproductive and abandoned land, which is also protected from urbanisation. The owners of these lands are mainly elderly people.
- The second main challenge is the preservation of the natural park through which the river Túria flows, which is protected land as well. This territory is illegally occupied by users that are making an incorrect use of the land, in the sense that they are not using ecological farming means and are polluting the river.
- The transition from abandoned land and “invaded” land to ecological urban gardens is the main challenge of Quart de Poblet CRFS, which in turn, gives us an opportunity for its transformation to a more sustainable food system, as the city of Quart de Poblet has enough physical space to develop urban gardens.

2. Collaboration with stakeholders

The main collaborator stakeholders in Quart de Poblet Living Labs are the following organizations: L'ANIMETA: a local association of ecological farmers, CERAI: a regional NGO that works for the food systems sustainability through awareness-raising campaigns and civic engagement initiatives, LIMNE Foundation: a local NGO that has an agreement with the municipality of Quart de Poblet whereby it is responsible for the river management and restoration, CED: the local centre for employment and development.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

3. Living Lab resources

Quart de Poblet has the required equipment and resources to implement Living Labs, such as spaces to co-create (Qworking room), consumables, budget, etc.

The Innovation Facilitators are Alberto Martínez and Dana Maini, who are coordinating the Living Lab Activities together with the other Cities2030 Spanish partners: Social Innolabs and Universidad Politécnica de Madrid.

In addition to this, the Municipality of Quart de Poblet has a strong relationship with local agents, such as food producers, non-profit organisations, etc., so it has the capability of creating stable working groups with stakeholders.

4. Living Lab experiments

All the experiments will consist of democratic processes, including those aimed at people who are illegally occupying the lands. These are processes that provide support to the community, not coercive or punitive processes. The experiments will aim to convince and sensitise citizens and put them at the centre of decision-making processes.

1. "Catching invaders":

Catching invaders will consist of a process of identifying the invaders of the protected lands and making them aware of a correct use of the land. The objective of this experiment is to have a first contact with them in order to understand the reasons of the incorrect use and illegal use of the lands and to start the transition of the lands to ecological urban gardens. This experiment contributes to the Cities2030 objectives of "Protect and preserve natural resources" and "Secure healthy and sustainable food", and it is associated with food production. The target group of the experiment are the lands' invaders and the monitoring system will be based on the number of invaders identified and the number of invaders that show their interest in being engaged in the Cities2030 project.

2. Supporting "invaders"

Supporting invaders is a capacity building programme aimed at the citizens occupying lands to train them in organic farming. This will reveal the number of invaders actually involved in the project.

This experiment contributes to the Cities2030 objectives of "Protect and preserve natural resources" and "Develop food culture and skills", and it is associated with food production.

3. Catching owners

This experiment will consist of identifying the owners of the abandoned land and to understand the reasons for this fact, to make them aware of the importance of urban gardening and to convince them to exploit their lands (by themselves or by local programmes for unemployed people). This experiment contributes to the Cities2030 objectives of "Protect and preserve natural resources", "Secure healthy and sustainable food" and "Develop food culture and skills", and it is associated with food production.

4. Training farmers

This experiment will connect the unemployed people of the municipality with the abandoned land through a local program in which they have a training period to be implemented in the unexploited lands.

This experiment contributes to the Cities2030 objectives of "Protect and preserve natural resources" and "Secure healthy and sustainable food", and it is associated with food production and inclusion thematic working groups.

5. Other Living Lab's measures

Awareness raising campaigns for citizens on urban farming. Awareness raising campaigns for kids on healthy and sustainable eating habits.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

6. SMART Goals

Train 10 invaders. Set up an innovative management model of the abandoned land. Cultivate 20% as an experiment with an innovative management model. By mid-2023, at least 50% of identified invaders and identified owners will have been sensitised to care for natural environments. By mid-2023, at least 50% of identified invaders will have been trained in organic farming. By mid-2023, at least 10 unemployed people will have been trained in organic farming.

7. Communication, dissemination and exploitation

Dissemination of information about the project at the municipal trade fair held on the 1st of October, 2022. Dissemination of information about the project in Social Media on the day of the fair. Dissemination in the media of the Valencian Community (radio, newspaper, etc.).

8. Continuity- and scale-up measures

Quart de Poblet is a member of Mancomunitat Horta Sud, which is an association of 20 municipalities in the metropolitan area of Valencia. Quart de Poblet will ensure that at least 5 municipalities in the Mancomunitat de l'Horta Sud will implement innovative actions developed by the Cities2030 Living Labs.

9. Risk assessment

RISK	EVALUATION	RESPONSE
Failure to engage owners and invaders	High	Mobilisation of other actors
Failure to engage invaders	Medium	Mobilisation of other actors
Delays in execution	Medium	Anticipation of tasks and staff in reserve
Lack of funding to develop urban gardens	Medium	Seek for alternative management models

3.8 8-Vidzeme

1. CRFS vision 2030 and challenge statements

Vision: CRFS future vision 2030: An organised environment of short food supply chains, ensuring the production, consumption and availability of healthy, locally produced products and food, as well as direct collaboration with stakeholders, united by reliability, predictability, collaboration, education and continuous information sharing, using the capabilities of digital technologies.

The challenge descriptions:

- Green public procurement does not ensure the needs of sustainable and resilient regional food chains, including complex procurement systems and procurement preparation processes, lack of knowledge of existing employees who provide preparation and management of quality procurement processes, incl. preparation of technical specifications, as well as potential suppliers on procurement requirements and its aspects; the uncertainty about the volume specified in existing procurement; lack of data about the potential suppliers.
- Lack of short food supply chains and diverse forms of cooperation, including public-private partnership, in smart villages and towns.
- Stale, inflexible food supply system, stagnant business models, production, storage, and delivery solutions.
- Lack of awareness about healthy food.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

2. Collaboration with stakeholders

Vidzeme LL is focusing on multi-actor approach and is open for interested participants from different areas. During the project, various participants were identified, starting from manufacturers, municipalities to consumers. VPR works mostly with municipalities and its institutions, LRF focuses on local action groups, entrepreneurs, nutritionists, consumers, producers and researchers.

3. Living Lab resources

The resources for the experiments are secured through the budget of the project partners – LLF and VPR. However, the involvement of external partners is needed (external resources, e.g., working time of teachers, voluntary support of the food council).

4. Living Lab experiments

Experiment number 1: Promoting healthy food awareness

During the experiment, children from kindergarten were introduced to the local farm and its production through different activities, like viewing animals, getting to know the vegetable field, cooking together from the eggs found, as well as creative activities, during which the healthy vegetable plate was created. The team was created from local producers, municipality, LAG, representatives of kindergarten, the nutritionist and the moderator of the event. Kids were excited to see where the food comes from and that healthy food is tasty and it is easy to cook. The producers were happy to have such cooperation to promote local products and to strengthen the formation of the short food chain between local producers and consumers, including institutions of municipality.

The experiment contributes to: Secure healthy and sustainable food; Develop food culture and skills. The experiment is associated with: Consumption; Inclusion, equity; Distribution.

Study questions, hypotheses, and assumptions: Introducing children to the origin of food promotes their healthy eating habits; Direct communication between producer and consumer ensures trust and sustainability of cooperation in the promotion of short food chains.

Target group(s) of the experiment: Children, producers, municipality institutions.

The monitoring system to gather data from the experiment: 1) Kindergarten teacher, who will observe changes in the behaviour of children and their parents and record the following aspects: Children's attitudes towards eating; Cooperation and involvement of children's parents in similar events. 2) The farmer will inform about the municipality's interest in cooperating in the promotion and support of such classes.

Timeframe for the experiment cycle: Ideation – April-August 2022, building of the experiment – September 2022, Monitoring – October 2022, Learning – October 2022.

Experiment number 2: Creation of a pre-procurement negotiation table

Public green food procurement participants and involved persons will be invited to the same table to jointly discuss needs, opportunities, rules, cooperation opportunities from both the consumer's and the supplier's side, thus creating a unified model for improving the food procurement procedure. A representative of the local action group, who is directly interested in the development of short food supply chains in their territory, will be invited as a mediator.

The experiment contributes to: Secure healthy and sustainable food; Develop food culture and skills; Enhance circularity and local food belt.

The experiment is associated with: Consumption; Inclusion, equity; Distribution; Production; Markets; Waste; Security; Livelihood, growth.

Study questions, hypotheses, and assumptions: Before starting the procurement procedure, the municipality's joint negotiations with potential suppliers and other involved parties will allow to understand the situation and give an opportunity to define procurement specification criteria for strengthening short

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

food supply chains with understanding; Producers will be able to plan their participation in procurement; The transparency and mutual trust and fairness will be promoted.

Target group(s) of the experiment: Consumers; Producers; Municipality institutions.

The monitoring system to gather data from the experiment: Surveys after the event.

Timeframe for the experiment cycle: Ideation – May-October 2022, building of the experiment – November 2022, Monitoring – November 2022, Learning – November 2022.

Experiment number 3 (P24 VPR): Increasing the capacity of local municipalities and their education and social care institutions to carry successful green procurements of food and catering services

During the experiment, participants – procurement specialists, lawyers, managers and other staff responsible for organisation and provision of procurements – will be trained and will get consultative support to apply green public procurement regulations and principles in a way that will enable them to ensure healthy food in the education and social care institutions. Objectives of the experiment: To increase capacity of regional stakeholders to organise highly efficient food and catering services procurements, thus creating preconditions for securing healthy and sustainable food and strengthening short local food chains. The experiment contributes to: Secure healthy and sustainable food; Enhance circularity and local food belt.

Study questions, hypotheses, and assumptions: How to apply existing legal base set for public green procurements in order to enable capacity to procure local, healthy, sustainable food?

Target group(s) of the experiment: Direct: Local municipalities, and their education and social care institutions; Indirect: Consumers: children attending kindergartens and schools, clients of social care institutions; Indirect: Regional primary food producers and processors.

Outline the monitoring system to gather data from the experiment: Questioning of respective stakeholders: local municipalities and direct organisers of food procurements.

Timeframe for the experiment cycle: Ideation – April-September 2022, building of the experiment – October 2022-February 2023, Learning – March 2023.

5. Other Living Lab's measures

n/a

6. SMART Goals

1. Strengthen the city region's food production and supply system. Increase in total volume and market value of food production delivered and sold within the region, especially within the food deliveries to education and social care institutions.
2. Increase the quality of food in municipalities institutions: schools, kindergartens and social care centres. Interviews of procurement specialists, consumers and caterers.
3. Increase the number of collaborations between municipal institutions and the private sector. Interviews of municipal institutions.
4. Improve the habits of consumers in the consumption of healthy food. Interviews of consumers.
5. Improve food procurement governance. Interviews of governing bodies on increase in levels of activity and effectiveness of regional and national stakeholders in implementation of changes improving food green procurement regulations and practices.
6. Promote development of innovative solutions at local food production and processing enterprises. Feedback provided by local food production and processing enterprises.

7. Communication, dissemination and exploitation

In order to maximise project impact, project and experiments will be disseminated using the following methods and communication channels:

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

P24 VPR: Publications in Vidzeme region website: www.vidzeme.lv and websites of its members – 11 local governments: http://www.vidzeme.lv/en/about_vidzeme. Publications in the Latvian Association of Local and Regional Governments: <https://www.lps.lv/en>. Reporting to the Vidzeme Planning Region Council board (meets once a month). Presentation at the Vidzeme Innovation Week – an annual innovation promotion platform. Direct communication to the involved stakeholders: education and social care institutions. Communication to the involved stakeholders: food producers and processors via Latvian Food Bioeconomy Cluster and other cooperation organisations

P25 LLF: Publications in LLF website: <https://laukuforums.lv/lv/>. Presentation to the Local action groups during the every week meetings; Thematic workshop during the Latvian Rural Parliament.

8. Continuity- and scale-up measures

Focus on the work with the Ministry of Agriculture in order to put the LL experiments in LEADER approach and use the results of our experiments to be implemented through the Green procurement support program, including involvement of LAGs.

9. Risk assessment

Risk	Probability & Severity	Mitigation & Elimination
During the project		
Lack of interest of regional stakeholders to take part in the LL.	Low/High	Regular communication to the regional stakeholders, individual addressing and awareness raising.
Lack of interest of national policy makers to take actions in order to improve green food procurement regulations.	Medium/Medium	Timely and regular communication. Elaboration of duly justified arguments. Involvement of Latvian Association of Local and Regional Governments and local municipalities in lobbying changes.
Lack of highly qualified experts to provide training, consultancy and hackathon (VPR LL).	Medium/High	Assessment of experts available in the thematic field, study of their competence level. Offering favourable conditions for provision of expertise, training and consultancy services.
After the project		
Increasing food production costs can reduce competitiveness of regional producers/processors to take part in food procurements.	High/High	Negotiations to national authorities being responsible for policies and instruments having impact on food production/processing and consumption.
Due to change of staff at local governments and their institutions, capacity to organise efficient procurements can be lost or reduced.	Medium/High	Regular provision of capacity building measures.

3.9 9-IASI

1. CRFS vision 2030 and challenge statements

Region: Iasi CRFS System: Iași, the main urban centre of the North-East Development Region, with a population of 500,000 inhabitants (including the metropolitan area), poses a rather challenging CRF. At the

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

same time, the North-East Region is an important agricultural area of Romania. Accordingly, Iași city is a huge marketplace for the producers from the region.

Food for Iasi Living Lab (FILL) short description: Food for Iași Living Lab (FILL) is based on the idea of an innovative workshop that is at the core of the Living Lab concept and runs its activities through an innovation hub in the urban food systems of Iași city. FILL addresses the urban food system of Iași city, including the metropolitan area and local producers in close vicinity of the city, especially producers who run their business activities in rural areas.

Vision: Iasi CRFS vision 2030: Improving the quality of life in Iași by encouraging healthy food, short food supply chains, production and consumption of organic food, waste management and last but not least, by increasing the level of trust between local producers and consumers.

Challenge description: FILL will organise more joint events for stakeholders of Iași CRFS, by encouraging the joint identification of issues and by developing a unitary set of intervention tools, such as actions, methods, models, policies, and strategies designed to address and hopefully solve these issues.

FILL objectives: (1) Developing the collaborative framework between the actors and agents of the urban food system, (2) Identifying the particular features of their own urban food system, (3) Identifying the particular issues of their own urban food system, (4) Analysing the identified particular issues, (5) Identifying the possible solutions for coming up with answers to the identified particular issues, (6) Generating models of good practices, (7) Knowledge transfer to direct and indirect beneficiaries.

2. Collaboration with stakeholders

Multi-actor, participatory, open, gendered and responsible innovation: FILL collaborates with a group of stakeholders built on the quadruple helix system (business environment, governance, academia, and public, as in citizens/civil society). The methodology used is basically relying on the following: (1) systems thinking model for data gathering (model developed within D3.3 Systems Thinking Methodology), (2) collaboration with stakeholders as actors of the system (entities maintaining the system in its current shape) and agents (entities forcing the change of the system). The cooperation with stakeholders started long before this project and, accordingly, is based on effective communication and teamwork. The group of FILL stakeholders is approximately the same group employed in other projects, which provides a series of significant synergies with other activities.

Open and responsible innovation, and Gender: The implementing team of the project (P28 IASI and P29ARFI) is a gender-balanced team. The research team publishes the results obtained within the project in an open access system only, in accordance with the specific deontology and European values. The stakeholder group is also gender-balanced.

3. Living Lab resources

Resources: (1) The constant collaboration between Iași City Hall and Iași Branch of the Romanian Academy, (2) Food for Iasi Living Iasi website is an umbrella for the activities run within the project and also provides synergies with other activities related to other projects, (3) qualified staff with experience in administration, projects, organisation of events, scientific research in food domain, public communication, (4) at least 32.500 EUR (salaries are not included).

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Innovation Facilitators' role and contribution: The activities of Food for Iasi Living Lab have the following objectives: (1) encouraging stakeholders to implement models of good practices from other food systems that were presented by project partners (as light innovation), (2) encouraging local producers to collaborate with academia and thus come up with innovative ideas, as in novel products for the local market.

Durability and Sustainability: (1) collaboration with stakeholders extended over the post-implementation period, (2) Food for Iasi Living Iasi as an umbrella platform for the activities during the post-implementation period, (3) "Iasul în bucate" fair (Iași fair of traditional dishes), "Piața verde de weekend" fair (The Green Market Weekend) as permanent events organised in Iași city and financially sustained by Iasi City Hall. Possible investments outside the Cities2030 grant: In the next period of implementation, we will try to identify and describe possible investments outside the Cities2030 grant.

4. Living Lab experiments

Experiments	Description
Cooking workshops for children	So far, FILL has organised 9 cooking workshops for children. The following objectives were particularly targeted: educating about healthy food, changing the food behaviour, learning and changing the behaviour about food waste, learning and changing the behaviour about composting.
Regional fairs	FILL organised 3 regional fairs under the brand of Iasul în bucate (Iași fair of traditional dishes) in July, August, and September 2022 to introduce the benefits of the short food supply chains, elevate the consumer's level of trust in local producers.
Local Mobile Farmers Markets	FILL has organised 4 mobile farmers markets to increase the consumer's level of trust in short food supply chains and urban food markets.
Scientific research projects	(1) Systems Thinking Methodology, (2) Influence of pandemics on the food purchase behaviour of consumers from Iași, (3) The opportunity to organise mobile farmers markets in Iași CRFS.
Reports about knowledge transfer	The offer of knowledge transfer from academia towards the business environment. For instance, recipes for prepared food products. Actions: mediation of academia with the business environment through focus groups, data analysis, and making a report.
Waste management pilot action	Implementing a system in one school to help prevent/reduce food waste with the purpose of learning and changing the behaviour about food waste and composting among children, monitoring the results and multiplying to other schools. This activity will provide synergies with other activities related to the project.
Informative campaign within schools	Let's eat healthy! The aim is for more children to understand what sustainable and healthy food means and to develop an affinity with it. The workshops organised in schools, within the campaign, will contribute to secure healthy and sustainable food and develop food culture and skills for Iasi citizens.

5. Other Living Lab's measures

Capacity building actions: (1) Food for Iasi Living Lab website: www.fill.rdrp.ro, (2) Organise conferences, (3) Communicators Community Training, (4) CRFS videoclips.

6. SMART Goals

Indicators	Description	Now	Goals (Total)

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Living Lab Participants	Food for Iasi stakeholders are a well-structured community that covers all society levels of the quadruple helix model: business environment, academia, public administration, and civil society.	20	30 (2024)
Living Lab workshops	FILL workshops are engaged in key interaction activities with stakeholders, data collection based on IASI CRFS activities, and research enterprises such as verifying hypotheses and scientific conclusions.	3	10 (2024)
Scientific Articles	Besides the presentations held at scientific conferences, the scientific papers are the most important channel of dissemination for FILL.		2 (2024)
Best Practices Reports	(1) Systems Thinking Methodology (D3.3 Deliverable), (2) presentation of producer with traditionally certified products, (3) presentation of producer with organically certified products, (4) presentation of a producer who is engaged in an environmentally friendly agriculture (permaculture).	1	4 (2024)
Synergies	SHERPA (H2020 project Synergy), RURALITIES (Horizon Europa project synergy), Gust de Iași (National project synergy), Asociația producătorilor locali Produs în Iași (NGO synergy), Life Sciences University, Iași (academic synergy), Direcția pentru Agricultură Județeană Iași (gouvernance synergy)	5	10 (2024)
Social media posts and reactions	Posting on Facebook accounts of the project and getting reactions at these postings.	200	500 (2024)
Improvements	Working with public institutions (main actors involved in the supply chain) to improve the healthy snacks delivered to the childrens in schools and aiming to provide better nutrition for them.	0	2 (2024)
Raising awareness	Through public outreach events (regional/national conference/workshops)	0	2 (2024)
Signing pacts and strategies	(1) Signing the The Milan Urban Food Policy Pact (MUFPF) by Iasi City Hall, (2) Including the signing of MUFPF on the new URBAN DEVELOPMENT STRATEGY OF IASI CITY	0	2 (2024)

7. Communication, dissemination and exploitation

Communication is provided through the following channels: (1) project website (cities2030.eu), (2) platform supporting the Project Forum, (3) various working groups from WP3, WP4, WP5 WP7, (4) Communicators Community, (5) website of Food for Iasi Living Lab (fill.rdrp.ro), (6) permanent events (The food fair, as in Iașul în bucate aka Iași fair of traditional dishes, Piața verde de weekend aka the Green Market Weekend), (7) stakeholders workshops.

Dissemination is delivered through the following channels: (1) social media and web-based dissemination, (2) academia through communications presented on scientific events and papers published in scientific journals, (3) printed informative materials (flyers with organic, mountain, and traditional food products, flyers about the project, flyers about Food for Iasi Living Lab), (4) educational workshops for children within the Fair of Iașul în bucate (Iași fair of traditional dishes).

Exploitation is provided through the following actions: (1) taking part in making the methodology of Systems Thinking as pilot methodology employed for data collection through meetings/workshops/events with stakeholders, (2) models of good practice related to the Communicators Community as a communication tool within projects.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

8. Continuity- and scale-up measures

(1) During the post-implementation period we will attract fundings to support FILL from the following sources: local, regional, and national financing, (2) FILL infrastructure will be used as a resource for other projects in the post-implementation period, (3) The scientific deliverables will be used as items of relevant published literature in the research projects conducted in Iași Branch of the Romanian Academy.

9. Risk assessment

Risk	Probability & Severity	Mitigation & Elimination
Since working with a stakeholders group is a common practice in all European projects, there is a certain risk in losing the interest of stakeholders.	Medium	To mitigate this risk, FILL involves stakeholders in a wide range of activities, such as workshops, fairs, cooking workshops for children, online product tasting or in person and so on.

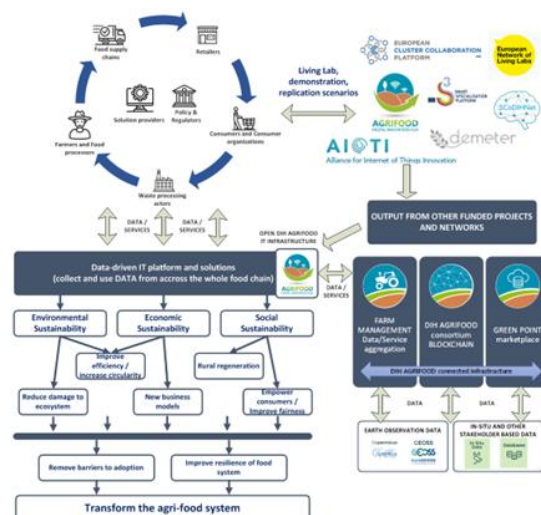
3.10 10-Murska Sobota

1. CRFS vision 2030 and challenge statements

Vision: Vision of Murska Sobota lab is to become one of the most advanced, digitised rural regions in Europe for food production and supply, based on the cooperation of all actors in the food system. The long-term goal is to bring actors from across the entire agri-food systems together in a Participatory Multi-Actor Approach.

All this is to be supported by:

Data-driven IT platform to collect and use data from all across the food chain to deliver benefits for the society and lead to a more sustainable, resilient and transparent food system with empowered stakeholders who are in the position to take smarter, more sustainable, healthier and more personal food and dietary choices, taking into account data regarding environmental impact, origin, nutrition, safety and integrity.



DIH AGRIFOOD Data Space, providing a secure, sovereign system of agrifood data sharing in which all participants can realise the full value of their data.

2. Collaboration with stakeholders

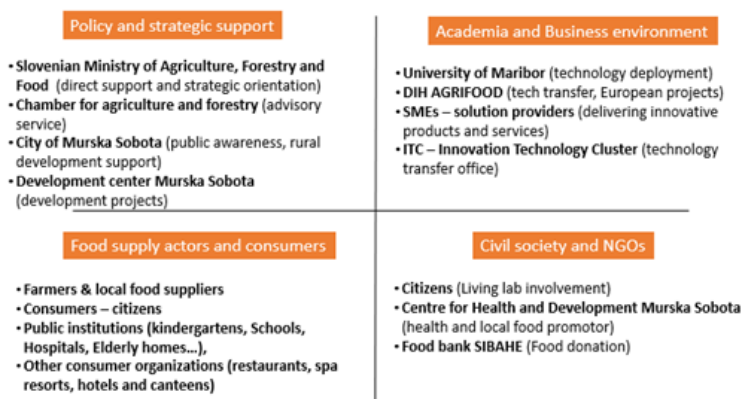
Murska Sobota Living Lab is based on solid ground of already existing networks built within the DIH AGRIFOOD and Green Point Living Lab, where lots of stakeholders are already involved and working together. By having the City of Murska Sobota active in the Living Lab, we have also covered the policy part, where regional and national stakeholders are joining the initiative to discuss future strategies of the Food system.

Collaboration is done under the scope of quadruple helix model, with some main actors described below:

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022



By that we have to mention that the Living Lab is promoting responsible research and innovation, with the active participation of multi-stakeholders process within the R&D process, where interdisciplinary knowledge is often searched through different types of organisations (Academia, business support and policy). All workshops are promoting this type of collaboration, with the main goal to attract different types of organisations from different fields of work in order to ensure interdisciplinarity. On the other hand, the Living Lab is also aiming to ensure gender equality, by targeting at least 50% women researchers at each of the workshops included.

3. Living Lab resources

The Living Lab is based on a fully operated short food supply chain called Green Point. This is why all the necessary resources are already there to be taken. From farmers who are involved in the production phase to the logistics (storage facilities, vans, transportation,...) and up until the retail store, where interaction with consumers (citizens) is taking place. For the implementation of the Cities2030 project and realisation of the blockchain based traceability, we have needed some external expertise on Blockchain services.

In addition to the Cities2030 project, we are involving projects of the DIH AGRIFOOD network, which are dealing with different topics (digitalization of production and processes, Consumer Engagement, Food loss and waste thematic, etc.).

4. Living Lab experiments

Name of the experiment	Description	Now	Goal	Cities2030 Objective	Cities2030 thematic working group	Target group	Duration
Traceability of products	Ensure the traceability of products from farmers, with help of blockchain technology. Involve farmers from the regional cooperative into the traceability system.	0	2 (end of 2022) 10 (end of 2023)	Objective Nr.1	Production, distribution, consumption, security	Farmer s, Consumers	From Oct.22 to Oct.23
Restoring the local market within the city	Organising events in the local market in order to ensure the restoration of city market	0	8 (end of September)	Objective Nr.4	Markets	Farmer s, consumers	From May 22 to Oct. 22

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Number of farmers selling on the city market	Increase the promotion and attract new farmers/cooperatives to sell at the local city market	10	20 (end of September)	Objective Nr.4, Objective Nr.1	Markets	Farmer S, Consumers	From May 22. To Oct. 22
Food loss and waste marketplace	Establish the marketplace for food loss and waste at Green Point Living Lab	0	1	Objective Nr.4	Consumption, Waste	Consumers, Processors	From Jan.23 to Apr.23
Digitalization of farmers	Install IoT equipment at farmer level in order to ensure additional data and monitor of the production	3	5	Objective Nr. 3	Production	Producers	From Jan.23 to Jun 23
Promotion of local food	Promotional campaign in social media and regional portals/newspapers	0	1	Objective Nr.5	Consumption	Consumers	From May 22. to Oct.22

5. Other Living Lab's measures

Main goal of the Living Lab is to promote the uptake of the local homegrown food and reduction of food loss and waste through the whole supply chain.

6. SMART Goals

10 farmers to be equipped with traceability data of their products. Organise 5 promotional events in order to promote local food. Increase the number of farmers selling in the city market and within the SFSC Green Point by 10%. Implement food loss and waste marketplace and ensure the reduction of food waste by 20% within the Green Point SFSC. Equip at least 5 farmers with digital tools in order to increase efficiency of production. Organise 2 seasonal campaigns for the uptake of local food (online + physical).

7. Communication, dissemination and exploitation

The Living Lab is constantly communicating over different online channels (ITC and MOMS webpage and social media, DIH AGRIFOOD social media and Green Point Living Lab social media). In addition, organisation of different events and workshops is done with the help of regional and national stakeholders. All this is supported by a wide network of the DIH AGRIFOOD and also the regional stakeholder group of MOMS.

8. Continuity- and scale-up measures

Continuity and scale-up measures are done through different aspects: Other EU funded projects from ITC and MOMS. Regional development programme and regional projects. Individual investments from local SMEs (farmers, cooperatives and solutions providers) into digitization processes.

9. Risk assessment

Risk	Probability & Severity	Mitigation & Elimination
COVID situation	Medium	COVID can eliminate live events and workshops, which are important aspects for building up the community and interest of citizens. In case of COVID restrictions, we will put more efforts into online campaigns and gamification of different promotional activities.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Farmers interest	Medium	Farmers can lose interest in digitalization, due to other problems they are facing at the moment. Lack of personnel, high costs of resources (fertilisers, gas, electricity,...). To mitigate this risk, we will try to attract additional EU or national funds to help subsidise this process for the farmers.
City market	High	Since the city market has been struggling for a few years, it is hard to attract citizens back to shop there. There will have to be strong communication support present in form of events and promotional stands in order to attract citizens from supermarkets to the city marketplace.

3.11 11-Vicenza

1. CRFS vision 2030 and challenge statements

In recent years, the city of Vicenza has launched numerous initiatives aimed at promoting a healthy diet and a sustainable food chain from the social, economic and environmental point of view. Vicenza is therefore a lively and active context, sensitive to environmental issues, already committed to a new urban food model and willing to embrace best practices to further increase its efforts in order to achieve even better results and increasingly challenging goals.

CHALLENGE: Increase awareness and knowledge of the City Region Food System (CRFS) and the importance of adopting healthier and more sustainable eating patterns

Sub-Challenge 1: Promote the short supply chain

Sub-Challenge 2: Encourage the reduction of waste and the promotion of food reuse

Sub-Challenge 3: Support the development of networks and alliances around the urban and peri-urban food system

2. Collaboration with stakeholders

SOCIO-ECONOMIC DIMENSION	SCIENTIFIC DIMENSION	GENERAL PUBLIC
VET Schools and High Schools Local Chefs Urban Traders Trade Associations Local Farmers and producers	Experts La Vigna's Scientific Council	Volunteers Students Consumers Food Bloggers

3. Living Lab resources

Location: Vicenza (Italy)

Team:

- 1 CRFS-LL Coordinator (LLC)
- 1 CRFS-LL Innovation Facilitator (LL-IF)
- 3 LL staff members expert in food history, science of cooking, food sustainability
- 5 General contributors to the LL actions (LL-GC)
- 2 LL Communication & Dissemination managers(LL-CD)
- 10 Other role (Other) > Scientific Council & Board of Directors

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

4. Living Lab experiments (5+)

The purpose of the LL is to increase awareness and knowledge of the City Region Food System (CRFS) and the importance of adopting healthier and more sustainable food models, through actions and activities that stimulate the participation of the various stakeholders involved.

Experiment 1

Title: STUDENTS AS CRFS AMBASSADORS

Coordinator: La Vigna in collaboration with The Municipality of Vicenza

Brief description: Students from various high schools will be involved in order to provide their own re-elaboration of the key themes linked to sustainability, healthy food and in general to the CRFS of Vicenza and its peri-urban area. Contributions will be provided according to the specialisation of the schools involved and could vary in the range of artistic, literary, audiovisual, digital and technological fields. The materials produced by the students will constitute the basis for dissemination and communication of project activities in the local area.

The experiment will be implemented according to the following steps:

- Preparation of a toolbox to explain the key concepts in a simple and clear way
- Programming a contest between institutes
- Promote moments of reflection on healthy and sustainable nutrition in the city
- Organisation of an event based on the train-the-trainers approach, or an in-training event for the professors of the various institutes who will coordinate the activities
- Collection of the contributions gathered from the schools and their evaluation by a jury of "experts" (to be nominated)
- Organisation of a public event to award the three most interesting ideas collected and communicate to citizen the work done

Objective: Valorise students as promoters of change. Inform and raise awareness among (high school) students on the sustainability issues of CRFS and, at the same time, enhance their skills as ambassadors of change for their peers and the whole of citizenship.

Relation to Cities2030 key objectives: Secure, Healthy and Sustainable Food - Develop food culture and skills

Relation to Cities2030 thematics: Consumption - Waste - Inclusion and equity

Study question: How to increase awareness and knowledge in young people of issues related to sustainability, healthy food and in general to the CRFS of the city of Vicenza?

Target Group: Students and Schools (VET and HIGH Schools)

Timeframe: Feb 2023 - Apr 2023

SMART goals and Monitoring System:

Description	Indicator & Target
Involve different types of schools to increase the variety	Min 4 different school involved

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

of young people reached and the number of contributions obtained	(2023)
Inform and raise awareness among a significant number of young people about project issues	Min 200 young people reached (2023)
Enabling schools to repeat the activity beyond the Cities2030 project	Min 1 School that include this activity or a similar one, in the POF (the teaching and extracurricular activities offered by an individual teaching establishment) 2023/2024 (November 2024)

Experiment 2

Title: FOOD ACTION - reworking traditional recipes with a view to sustainability

Coordinator: La Vigna in collaboration with The Municipality of Vicenza

Brief description: The activities will stimulate individual citizens or groups of citizens to re-elaborate recipes, which they consider in some way significant or emblematic of the territory or the local area or community, with a view to "sustainability". Recipes (re)elaborated by citizens will be given visibility through social channels and project partners, thus contributing to spreading information and awareness on sustainable food choices and habits.

The experiment will be implemented according to the following steps:

- Identification the "Cities2030 Angels", or facilitators of activities that can contribute both to the definition and development of the content and to support the visibility and participation of citizens (eg. Food Bloggers and cooks of the territory, renowned Chefs)
- Defining the rules of the contest "reworking a traditional recipe"
- Organisation of a public event to launch the initiative and engage the citizens, fostering participation
- Organisation of a cooking sessions to support the participants in reworking the recipes and assisting them in their experiments
- Collection, verification and "validation" of the reworked recipes by the project team
- Organisation of a final event to present the results to the community
- Online dissemination of "Sustainable Recipes"
- Collection of the reworked recipes in one e-book

Objective: Create a dimension of knowledge, exchange and collaboration aimed at reworking some traditional recipes with a view to reducing food waste, promoting a diet based on seasonality and local products (km0 and short supply chain), which is sustainable and healthy, but also inclusive, taking into account the "contamination" with "food from the world" and which provide an opportunity for dialogue and participation and development of the social function of food.

Relation to Cities2030 key objectives: Secure healthy and sustainable food - Enhance circularity and local food belts - Develop food culture and skills

Relation to Cities2030 thematics: Consumption - Waste - Inclusion and equity

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Study question: How can we reduce food waste and create traditional sustainable recipes?

Target Group: Citizens / consumers, food bloggers and local cooks

Timeframe: March 2023 - May 2023

SMART goals and Monitoring System:

Description	Indicator & Target
Raise awareness and actively involve citizens and influencers on the issues of sustainability of food and its preparations	Min 40 participants (2023) Min 10 sustainable traditional recipes
Communicate and advertise healthier and more sustainable eating habits through recipes	Min 500 downloads of recipes or views in social media (2023)
Highlight the "cultural" and social dimension of food	Min 5 professionals / influencers in the food sector willing to collaborate ("Cities2030 Angels")

Experiment 3

Title: EAT WELL AT SCHOOL!

Coordinator: The Municipality of Vicenza in collaboration with La Vigna

Brief description: The school canteen catering services (private and public), the Parents' Committees and the Representatives of parents and teachers and school collaborators of the various Educational Institutions and will be involved in co-creation activities to establish a more structured and collaborative relationship, to improve communication between the School managers, the school catering service and the families and to prepare sustainable actions that involve all actors.

The experiment will be implemented according to the following steps:

- Involving key stakeholders and their representatives
- Defining the rules and procedure for meetings
- Organising the meetings
- Collecting and reporting of proposals

Objective: Improve the dialogue between the school catering service and families to increase the satisfaction of school catering and encourage correct eating habits from childhood onwards. Promote collaboration between the school catering service (both internal to the Municipality or provided by external contractors) and families to foster greater visibility of the good practices already implemented, a constructive dialogue on the needs and on any problems that may arise, to inspire innovative solutions and collaboration between all those involved.

Relation to Cities2030 key objectives: Secure Healthy and Sustainable Food - Enhance circularity and local food belts

Relation to Cities2030 thematics: Distribution - Consumption - Waste - Security

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Study question: How to promote healthy eating habits from childhood onwards?

Target Group: School canteen catering service, Parents' Committees and Representatives of parents, teachers and school collaborators

Timeframe: Jan 2023 - Mar 2023

SMART goals and Monitoring System:

Description	Indicator & Target
Activate a structured dialogue between providers and users of the school canteen service	<ul style="list-style-type: none"> - Establish 1 stable working group (2023) - Min 2 meeting during the experiments (2023) - Commitment to continue even after the experiment (2023)
Increase collaboration and mutual understanding between canteen and families	Min 2 concrete proposals elaborated to improve the perception, satisfaction and / or sustainability of the school catering system in one or more schools (2023)
Actively involve families in promoting and implementing sustainable eating habits	Min 1 initiative emerged from the Working Table started (2023)

Experiment 4

Title: **LOCAL FOOD COMMUNITY**

Coordinator: The Municipality of Vicenza in collaboration with La Vigna

Brief description: The activities will focus on supporting retail trade to protect the historical and traditional shops and revitalise the trade both in the historic city centre and in the neighbourhoods. At the same time, initiatives and tools will be promoted to reduce food waste that can make it easier to match supply and demand (e.g. expiring food donated or discounted by traders at the end of the day ...). Furthermore, the actions of the experiment will promote the development of the short supply chain, in synergy with the retail trade.

The experiment will be implemented according to the following steps:

- Organisation of a series of meetings-interviews with the trade associations and local farmers, with some retailers and with the consumer associations for an initial discussion on the subject and recognition of the aspects of greatest interest
- development of activities to explore and assess the possible role of technologies in supporting the zero waste initiatives, with a special focus on promoting visibility, communication and use by citizens (e.g. APP, web platforms, social media, brands, product clubs, awards, ...)
- Collection and reporting of proposals and solutions for the future

Objective: To encourage the participation and a more active role of SME, traders and local producers in the the food sector, in the co-creation, with the Municipality of Vicenza, of useful solutions to increase the

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

CRFS sustainability, starting with the reduction of food waste, raising awareness of virtuous behaviours and the promotion of the short supply chain and local products.

Relation to Cities2030 key objectives: Secure Healthy and Sustainable Food - Enhance circularity and local food belts

Relation to Cities2030 thematics: Production - Processing - Distribution - Markets

Study question: How to develop a network to prevent/to fight food waste?

Target Group: Traders, local producers and farmers, trade associations

Timeframe: March 2023 - May 2023

SMART goals and Monitoring System:

Description	Indicator & Target
Involve and sensitise SME on the issues of sustainability and the renewal of CRFS. Increase the level of individual engagement.	Min 15 meeting-interviews with operators or Trade associations (2023)
Support the development of networks and alliances between food system operators, in a collaborative and synergic perspective	- Establish 1 stable working group (2023) - Min 3 meeting during the experiments (2023)
Increase the knowledge and skills of operators with respect to the value of sustainability and the opportunities available (in particular in the fields of technology, communication, social networks)	- 20 participants (2023) - 1 specific opportunity elaborated (2023)
Creation of a stable and lasting network	- Action Plan - Commitment of at least 70% participants to continue even after the experiment (2023)

Experiment 5

Title: **Cities2030 MENU'**

Coordinator: The Municipality of Vicenza in collaboration with La Vigna

Brief description: The activity aims at involving local restaurateurs to include in their menus, even for a temporary period, certain dishes characterised in particular by one or more of the "Cities2030 values" (short supply chain, zero waste, recognition of historical, cultural and identity value of food, sustainability, biodiversity). These dishes can also be the output of the activities of Experiment 1. The activity will proceed with the creation of "identity cards" of the dishes proposed in order to explain and communicate the project values to restaurant customers and consumers.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

The experiment will be implemented according to the following steps:

- Launch a dialogue with local restaurateurs to propose an elaboration of the "Cities2030 Menu" based on the Cities2030 Values and the output of Experiment 1
- Definition of the rules to elaborate the "Cities2030 Menu"
- Organisation of an event to launch the initiative and encourage participation
- Creation of a communication campaign to promote the "Cities2030 Menu"

Objective: Create a dimension of knowledge, disseminate information and raise awareness on sustainable food in all citizens and consumers. Increase the awareness about the Cities2030 values.

Relation to Cities2030 key objectives: Enhance circularity and local food belts - Develop food culture and skills

Relation to Cities2030 thematics: Processing - Distribution - Consumption

Study question: How to disseminate information and raise awareness on sustainability of food choices and habits?

Target Group: local restaurateurs and producers

Timeframe: June 2023 - September 2023

SMART goals and Monitoring System:

Description	Indicator & Target
Involve and sensitise local restaurateurs and producers on the issues of sustainability and the renewal of CRFS.	Min 10 restaurateurs involved (2023)
Disseminate the Cities2030 values	- Min 5 restaurateurs proposing Cities2030 Menu (2023) - Min 2000 People reached with social media (2024)

5. Other Living Lab's measures

General survey (online questionnaire)

Awareness and Educational Workshop

Seminars to share knowledge on traditions

Public events to promote innovative and best practices in the food system arena

Scientific paper for La Vigna Magazine and for Open Access publication

6. SMART Goals

To monitor the achievement of the LL Smart objectives, we have defined the following indicators:

- Min 4 different school involved (2023)

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

- Min 200 students/young people reached (2023)
- Min 1 School that inserts the activity, or a similar activity, in the POF 2023/2024 (November 2024)
- Min 40 participants in Food Action (2023)
- Min 10 sustainable traditional recipes (2023)
- Min 500 downloads of recipes or views in social media (2023)
- Min 5 professionals / influencers in the food sector willing to collaborate ("Cities2030 Angels") (2023)
- Establish 1 stable working group between School catering service, Parents' Committees and Representatives of parents, teachers and school collaborators (2023) and Commitment to continue even after the experiment (2023)
- Min 2 meeting during the experiments "Eat well at School"(2023)
- Min 2 concrete proposals elaborated to improve the perception, satisfaction and / or sustainability of the school catering system in one or more schools (2023)
- Min 1 initiative emerged from the working group started (2023)
- Min 15 meeting-interviews with operators or Trade associations (2023)
- Establish 1 stable working group between CRFS operators (2023)
- Min 3 meeting during the experiments "Local Food Community" (2023) with 20 participants
- 1 specific opportunity elaborated during experiment " Local Food Community" (2023)
- 1 Action Plan of Food Local Community
- Commitment of at least 70% participants of Local Food Community to continue even after the experiment (2023)
- Min 10 restaurateurs involved (2023)
- Min 5 restaurateurs proposing Cities2030 Menù (2023)
- Min 2000 People reached with social media (2024)

7. Communication, dissemination and exploitation

Social Media: Facebook and Instagram (The International Library La Vigna and The Municipality of Vicenza)

The City of Vicenza and La Vigna Website: news and events and cities2030's page.

Cities2030 Community

La Vigna Magazine: Giornale di Agricoltura e Gastronomia

Dissemination Events

8. Continuity- and scale-up measures

Possible funding options to support continuity and scale-up after the Cities2030 project time frame:

- Erasmus Plus Programme
- National or Regional Opportunities (PNRR, PON, POR, etc.)
- Transformation of the La Vigna International Library into a participatory foundation
- Crowdfunding Events

9. Risk assessment

Potential risks and probability:

1. delays due to the worsening of the Covid-19 pandemic > Medium

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

2. low performance due to tight deadlines and communication problems among team members > Low
3. delays in procurements (services, materials, infrastructures) > Medium
4. low active participation > Medium

Risk elimination and mitigation tasks:

1. provide an alternative route of activities to be carried out online
2. plan periodic meetings with the stakeholders involved and team members so that there is constant coordination of activities and compliance with deadlines
3. starting from the design phase (IDEATE) of the experiment, agree on the services, materials and infrastructures necessary to carry out the activities
4. Ideate and prepare innovative methods of involving people and key opinion leaders that can also attract other stakeholders

3.12 12-Haarlem

1. CRFS vision 2030 and challenge statements

Vision: Haarlem aims to be a circular city by 2040. In the Sustainability Roadmap (Chapter 8, Chain Responsibility) Haarlem has targets that are at least necessary for this purpose until 2040⁹. By 2030, Haarlem wants to have reached 50% off the habitants with information about more, local, organic food.

By 2030, 50% of the companies in Haarlem will have become familiar with a circular food system due to the programs of the municipality. In addition, by 2030 every neighbourhood will have some form of urban agriculture/vertical agriculture. Local food cooperatives are activated and 50% of Haarlem residents are familiar with these cooperatives, including core campaigns of the municipality. In each district, residents have developed bottom up initiatives, supported by the municipality. Through campaigns and plant-based menu/activities, organic food is stimulated and encouraged.

2. Collaboration with stakeholders

Together with initiatives and entrepreneurs: Haarlem works closely with (residents) initiatives and entrepreneurs to realise a sustainable food system. These initiatives have started various projects to, among other things, increase biodiversity. In the coming years we will intensify cooperation with initiatives in Haarlem. Regular consultations and meetings are organised. Two colleagues from the municipality are a direct point of contact for the Living Lab and we set up projects and collaborations together.

Together with 'Voedsel Verbindt' (Food connects): Food Connects is an activating platform that focuses on a sustainable, regional and circular food system. Food Connects offers an overview, puts on the agenda, activates and connects. The aim is a robust and healthy Amsterdam Metropolitan Area and surrounding agricultural areas. LL Haarlem participates in the working group 'Our Circular Food Economy'. Partners include the municipality of Amsterdam, the province of North Holland and the province of Flevoland.

⁹ Sustainability Roadmap <https://gemeentebestuur.haarlem.nl/bestuurlijke-stukken/20210430881-4-Bijlage-3-Haarlemse-Routekaart-Duurzaamheid-Route-voor-CO2-reductie.pdf>

Together with the City Deal Sustainable and Healthy Food Environment: A City Deal is a thematic collaboration in which municipalities, central government, private parties, knowledge institutions and other organisations work on an equal basis on innovative solutions for complex urban challenges. Through three tracks, the City Deal focuses on a healthier and more sustainable supply in the streets, healthy and sustainable food routines and the promotion of local food and the short chain. Living Lab Haarlem focuses on track 3, stimulating local food and the short chain. Haarlem is investigating whether the Amsterdam 'Farmers for Neighbours' project can also land in Haarlem. In addition, new models are being tested to stimulate local food – an example is the cooperative Food Hall. In Cities2030, an action plan will be drawn up and support tested to be able to realise this.

3. Living Lab resources

Haarlem needs capacity and resources to promote the circular food system. In the new coalition agreement (policy of the municipality) resources have been made available up to and including 2026. Through the policy 'Roadmap Sustainability', the budget and capacity will grow in the coming years to realise a circular food system. In addition, Haarlem works closely with the region. A subsidy has been requested from the province to stimulate the short chain in the coming years. We also work together with Rijkswaterstaat (government body), who previously made the budget available for the frontrunner group Circular Restaurants.

4. Living Lab experiments

Oro Wolkorrel (Oro wool) granules make plant food granules from wool for which there is no other destination. In Cities2030, Oro is exploring opportunities for scaling up. The aim is for the residual wool product to be used on a much larger scale as plant food. Contributes to 'protect and preserve natural resources'. Working groups: Waste and processing. The hypothesis and assumption is that grain can be used on a larger scale in urban agriculture. Experiment starts in October 2022 and ends in March 2023.

De Plukweide (Picking flower garden) grows oyster mushrooms on wood chips (residual material) from the Maak site as a basis for compost. In addition, they are conducting tests for an even more fertile compost with worms and food leftovers in Bokashi containers. The aim is to stimulate biodiversity on land/fertile soil. Contributes to 'Protect and preserve natural resources' and 'Enhance circularity and local food belts'. Working Groups: Waste, Ecosystem Services, Production (flowers for honey). The hypothesis and assumption is that this compost ensures better soil quality and more production of flowers and biodiversity. It is also assumed that residual flows from other stakeholders can be put to good use. Experiment started in May 2022 and will end in November 2022.

The 'Wilde Oogsten' (Wild Harvest) is investigating how biodiversity can be increased by means of vegetable garden techniques (regenerative agriculture) and cooperation with livestock farming (for natural grazing and tillage of the land). This soil is more resistant to drought or heavy rainfall. The aim is to stimulate biodiversity on land/fertile soil. Contributes to 'Protect and preserve natural resources' and 'Enhance circularity and local food belts'. Working Groups: Waste, Ecosystem Services, Production. The hypothesis and assumption is that this compost ensures better soil quality and more production of vegetables and biodiversity. It is also assumed that residual flows from other stakeholders can be used usefully. Experiment started in May 2022 and will end in November 2022.

'Wij telen groente' (We grow vegetables) and farm 'De Herkomst' (The Origin) puts pigs for natural grazing. The pigs are ultimately slaughtered and consumed locally, for example by the leading group Circular Restaurants. In Cities2030, it will be investigated whether pigs can be used for natural grazing in more places in Haarlem. The aim is to stimulate biodiversity on land/fertile soil. Contributes to 'Protect and preserve natural resources' and 'Enhance circularity and local food belts'. Working Groups: Waste, Ecosystem Services, Production. The hypothesis and assumption is that this compost ensures better soil

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Page |54

quality and more production of vegetables and biodiversity. It is also assumed that residual flows from other stakeholders can be used usefully. Experiment started in May 2022 and will end in November 2022. **Foodlab** uses the 'Train the trainer' program to train neighbours with a passion for cooking to give children sustainable and healthy cooking classes in their own neighbourhood. The aim is for more children to have access to sustainable and healthy food and to develop an affinity with it. The assumption/hypothesis is that this training program works like an oil slick and that more and more people will participate. Contributes to 'Secure healthy and sustainable food' and 'Develop food culture and skills'. Working Groups: Inclusion, equity and Consumption. Experiment started in August 2022 and will end in February 2023. **Ground 8** is conducting a short research into support for a Cooperative Food Hall: a place where a group of people (1000) buy local and sustainable food and are also co-owners (preferably in Schalkwijk). Aim: research into support for a Cooperative Food Hall. It is assumed that there is sufficient support. Contributes to 'Secure Healthy and sustainable food', 'Develop food culture and skills'. Working groups: Consumption, Ecosystem services and Inclusion, equity. Experiment started in August 2022 and will end in February 2023. **Orbisk**: Through an Orbisk pilot with five restaurants from the frontrunner group of Sept/Nov 2022, their food waste was measured using a software monitor. Aim is to reduce food waste. Contributes to 'Secure Healthy and sustainable food', 'Develop food culture and skills'. Working groups: Consumption and Waste. Experiment started in September 2022 and will end at the end of November 2023. **Food Waste Challenge**: Haarlem Food Future and Rabobank are starting a Food Waste Challenge where restaurants put on their food waste. After a baseline measurement, in which the food waste of a week is measured, it is determined where the most profit can be made. Then, with the help of the Wastewatchers, restaurants will work to reduce food waste. After the challenge, food waste is measured again. In Brabant, more than 54% less food was wasted. Aim is to reduce food waste. Contributes to 'Secure Healthy and sustainable food', 'Develop food culture and skills'. Working groups: Consumption and Waste. Experiment started in September 2022 and will end at the end of November 2023.

The monitoring process takes place during the experiment. Results of the experiments are monitored by means of a form before, during and after the experiment.

In addition, there is interim vocal contact with the stakeholders about the progress. Results are presented in several meetings.

5. Other Living Lab's measures

We make the policy with actions to achieve the goals in our vision. A circular economy action program will follow at the end of 2022. This is a practical translation of the goals from the Sustainability Roadmap. The Action Program encompasses the actions necessary up to and including 2025 to achieve these goals.

6. SMART Goals

Prevent/reduce food waste. Promoting sustainable and healthy food choices. Stimulating biodiversity through urban farming initiatives.

7. Communication, dissemination and exploitation

There is a registration form with an interim monitoring and a final monitoring of the results. Several meetings are organised with stakeholders where they present their results (first one is Oct 14).

Disseminate results: Through the news and social media channels of the municipality of Haarlem. Website of HFF (partner) and the page Haarlem Circular City. A campaign will start next year to stimulate the circular economy in Haarlem. Making the food chain more sustainable is one of the most important partners.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Haarlem has been investing in this network of stakeholders for a number of years. Thanks to Cities, collaborations have been intensified and projects accelerated. Cooperation is aimed at an ecosystem for the long term, we will continue with this after Cities2030.

8. Continuity- and scale-up measures

Continuation is guaranteed in our policy and the lessons learned from the projects and experiments are included in order to achieve our goals for the coming years.

Haarlem needs capacity and resources to promote the circular food system. In the new coalition agreement (policy of the municipality), resources have been made available up to and including 2026¹⁰. Through the policy 'Roadmap Sustainability', the budget and capacity will grow in the coming years to realise a circular food system. In addition, Haarlem works closely with the region. A subsidy has been requested from the province to stimulate the short chain in the coming years.

9. Risk assessment

The municipality of Haarlem is dependent on the political choice to focus on a circular and sustainable food system. This is guaranteed in our policy for the next four years. After new elections, a different political prioritisation may arise.

Haarlem aims to be a circular city by 2040. A sustainable and circular food system is essential in this regard. The expectation is that the situation will only become more urgent and higher on the agenda. We therefore consider the risk of a different political prioritisation to be relatively small.

Haarlem continues to emphasise the need for a sustainable and circular food system in our policy.

3.13 13-Venice

1. CRFS vision 2030 and challenge statements

Until the 19th century, the lagoon of Venice was an almost self-sufficient territory in terms of land and water food supplies. Today, lagoon productions include a variety of raw materials and processed products of great quality, but not enough to cover demand. The City of Venice signed the Milan Urban Food Policy Pact in 2015. Since then, a number of sectoral initiatives and programs have been implemented, especially in terms of supporting youth and fragile social groups. However, there is a lack of coordination among these initiatives and there are neither programs nor strategies for the future of the local food system. Today, the high demand for products to be served in restaurants and hotels requires many foods to be imported from the outside. Local producers are struggling to stay in the market. They can offer high-quality products from a unique environment. However, high production costs and the limited size of production sites reduce their competitiveness in a tourist hit-and-run environment. In addition, lagoon production depends closely on ecologically balanced environmental conditions, which are currently at risk. Iuav has proposed Venice as a multiplier city for several reasons: the signing of the Milan Urban Food Policy Pact, an area of unique productions, high demand for fresh produce, risky environmental conditions, significant food transition potential, and, last but not least, a UNESCO heritage site. Can food be a key to convey ecological transition in the lagoon, to strengthen the local community's bond with its territory, to mitigate the impact of tourist flows? This spatial and urban complexity requires innovative approaches to drive change. To do so, a deep understanding of how the food system works is needed more than ever.

¹⁰ Coalitin agreement, <https://gemeentebestuur.haarlem.nl/Vergaderingen/Raad/2022/30-juni/19:30/Coalitieakkoord-2022-2026-Actie-Aan-de-slag-voor-een-sociale-groene-en-leefbare-stad.pdf>

The main objective of the CRFS Labs will be to build a Food Atlas of the Venice Lagoon, which is essential to gather and promote innovation. In other words, the Venice Lagoon food system should serve the diverse communities inhabiting the lagoon, in balance with a fragile system. To do so, the main challenge is to state clear and shared priorities; the Atlas will serve this objective. In fact, in Italy, several food atlases have been developed in recent years (Turin and Matera among others) to implement local food policies. Atlases represent open and interactive tools that can collect data and information on the food system, but also highlight innovative experiences from below and promote new local food policies.

2. Collaboration with stakeholders

Iuav is collaborating with: the Department of Economics and the Centre for Environmental Humanities at Ca' Foscari University of Venice; and the Doctorate in Historical, Geographical, and Anthropological Studies at the University of Padua. To ensure the collaboration with public administration and in collaboration with the mentioned scholars, Iuav is defining a knowledge document to share with local institutions to inform them about the Cities2030 project, its goals, and methodologies. Starting with the bilateral meetings with local authorities, the multidisciplinary group intends to ensure their participation.

Cultural institutions (M9, Ocean Space) have also been actively involved in the activities of the Venice CRFS Lab. In addition to that, students from seven diverse Italian universities and research institutions have been involved in the Lab activities. Finally, involved researchers can count on individual local social networks that can reach other scholars, experts, activists, artists, journalists who are variously engaged in food related topics.

3. Living Lab resources

The IUAV team (P38) works in continuous relation with researchers coming from other two Universities (University of Ca' Foscari and University of Padua) and the European Project Consulting (P2). The Venice CRFS lab core team is composed of six people (advanced scholars, post-doc researchers, and doctoral students) coming from diverse fields of expertise (urbanism, landscape planning, geography, anthropology). The collaboration with other local researchers provides additional and necessary knowledge from other fields (art, biology, agronomy, and local history). The Living Lab activities are mainly developed with a limited set of resources and only one post-doc researcher is full-time involved in the project. Additional financial resources would facilitate the process.

4. Living Lab experiments

1. An archive of diverse communicative tools and representation techniques related to the food system to develop a set of diverse descriptive and analytical products (illustrations, photographs, sound recordings, texts, maps...) and to collect local stories.

Objective & monitoring	Develop a shared language and a series of diverse communicative tools to discuss the city-region food system through a series of workshops and open talks and the production of the archive.
Collaboration	Local artists, researchers, cultural institutions
Target group	Local inhabitants, students

2. The Venice Lagoon Food Festival. Building on previous projects undertaken by the Venice municipality (Saòr, Venice), the festival will be a widespread event in the area that will seek to involve the entire lagoon system, creating a meeting point between producers, restaurateurs, traders, citizens associations, and citizens eager to fully understand the history and culture of food in the Venice Lagoon.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Objective & monitoring	Organise a large widespread event that involves the actors of the food arena to strengthen the sense of belonging and to engage individuals of all ages in a discussion about the food system.
Collaboration	City administration(s), local businesses, citizens associations
Target group	Families, businesses, citizens associations

3. A situated learning program that involves architecture and planning students and local stakeholders in the collective design of future food scenarios and new dimensions of multifunctional landscapes as a catalyst to sustainable development. The workshops and the design studio will work in close collaboration with local communities and several stakeholders, bridging the gap between scientific knowledge, non-expert knowledge, and planning activities traditionally perceived as far from everyday life.

Objective & monitoring	Engage in a continuous discussion at the planning and policy level with diverse stakeholders, developing innovative planning scenarios for the Venice Lagoon (food system) through a series of workshops and a Design Studio (1-semester course).
Collaboration	Universities, students, citizens associations, research centres
Target group	Students, local businesses, public administration(s)

4. A cultural project to disseminate the cultural heritage of fishing in the lagoon. Fishing heritage is considered an asset linked to tradition, local economies, and knowledge. It should be protected and promoted to ensure its survival.

Objective & monitoring	To design, develop and implement activities that contribute to the enhancement of fishing cultural heritage. To study and raise awareness for the population and visitors.
Collaboration	Universities, students, citizens associations, research centres
Target group	Local communities, tourists, schools

5. Activation and promotion of the "Fisherman's House" at Punta Sabbioni (Cavallino-Treporti). Creation of an operational centre for the Fishermen's Cooperative within the already renovated Fisherman's House. Creation of a "fish centre" (which will also provide for the sale and consumption of the catch). The space will contribute to creating a stable reference point for the sale and consumption of fish, supporting the Cooperative's activities economically.

Objective & monitoring	Establish an operations centre that supports fishermen in their activities and strengthens the sense of belonging to the Cooperative in sharing a "home". Support and greater synergy with the Fishermen's Cooperative, redevelopment of the area in terms of architecture and visibility in the area.
Collaboration	Local municipality, citizens associations, research centres
Target group	Fishermen, consumers

6. Identification of potential gastronomic uses of lagoon edible wild vegetation. Studying to identify potential gastronomic uses of lagoon vegetation and launching experimental studies for the identification

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

of new products, according to paradigms of protection contextualised in the lagoon specificity, can favour the gastronomic offerings related to typicality.

Objective & monitoring	Protection of salt marshes and populations of endangered plant species, creation of a method for the identification of new plant edibles, enhancement of edible heritage in the lagoon, development of sustainable economies in areas with high depopulation rates.
Collaboration	Local economic activities (HoReCa), local farmers, local municipality
Target group	Local inhabitants, consumers, tourists, chefs

7. Cultural platform on the relationship between food and the lagoon. Creating a platform where it is possible to share a new socio-cultural relationship between food and lagoon. Promoting the territory through its food-related elements of typicality.

Objective & monitoring	To put cuisine at the centre of the dialogue between nature and culture. Raising awareness and dissemination of local knowledge about gastronomy. Creation of a wider research community that brings forward an innovative relationship between food and the lagoon territory.
Collaboration	Universities and research centres, local artists and communication designers, tourism office, local consumers and producers
Target group	Local inhabitants, consumers, tourists, schools

8. Census of disused areas that could potentially be exploited for community agriculture. The census makes it possible to envisage new projects for dormant land, returning it to agricultural use.

Objective & monitoring	Definition of possible strategies for abandoned areas. Mapping of land, constraints, potential. To reactivate abandoned areas. To enhance the potential of the territory in terms of ecosystem services.
Collaboration	Universities and research centres, local associations, local producers, owners of abandoned land, associations representing the primary sector
Target group	Local producers, new farmers, local consumers

5. Other Living Lab's measures

To ensure the survival and the viability of the CRFS Lab and its activities beyond Cities2030, the Food Atlas of the Venice Lagoon will be built in close collaboration with all the stakeholders. A huge effort is being made to explore tools and forms that the Atlas can take and how it can be implemented by all the actors in the food arena, including those with non-technical skills.

In addition to that, the CRFS Lab has to be able to secure funds beyond the Cities2030 project. To do so, the Lab engages with key actors that provide that form of knowledge (f.e. European funds and the design of business plans).

6. SMART Goals

To identify the most adequate SMART Goals, we referred to the RUAF Foundation's document "City region Food System indicator framework" (2017) in which for each overarching object a set of possible indicators is proposed.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

- SMG 1 - Improve health and well-being and increase access to food and nutrition
- SMG 2 - Improve social conditions for workers
- SMG 3 - Build local food culture & heritage
- SMG 4 - Ensure acceptability of food provision for all city residents
- SMG 5 - Increase local economic growth and generate a diversity of decent jobs and income
- SMG 6 - Strengthen the city-region food production and supply system
- SMG 7 - Improve protection and management of ecosystems and environmental resources
- SMG 8 - Improve horizontal and vertical governance and planning
- SMG 9 - Reduce vulnerability and increase resilience

Living Lab experiments	Overarching objectives
1. An archive of diverse communicative tools and representation techniques related to the food system	SMG 3, 4, 8
2. The Venice Lagoon Food Festival	SMG 3, 6, 7
3. A situated learning program	SMG 3, 6, 7
4. Cultural project to disseminate the cultural heritage of fishing in the lagoon	SMG 3, 4
5. Activation and promotion of the "Fisherman's House" at Punta Sabbioni (Cavallino-Treporti)	SMG 2, 5, 6
6. Identification of potential gastronomic uses of lagoon edible wild vegetation	SMG 1, 2, 3, 5, 7
7. Creating a cultural platform on the relationship between food and the lagoon	SMG 3, 4, 7
8. Census of disused areas that could potentially be exploited for community agriculture	SMG 1, 2, 5, 6, 9

7. Communication, dissemination and exploitation

The integration between luav and CàFoscari researchers within the working group offers a twofold advantage in terms of communication. On the one hand, theoretical and technical skills of communication and promotion of project activities are available. On the other hand, both universities can count on local and digital social networks and communication platforms that allow them to inform the local community and to be open to participation.

Venetian universities, which are sponsoring the Living Lab, can offer project-specific expertise in disseminating results in order to maximise impact. Researchers involved in the project will engage in the dissemination of ongoing activities, producing and disseminating knowledge. Participation in conferences and seminars, development of educational activities, and bibliographic research products are planned. The main activities are aimed at rebuilding local-scale social and economic networks, so efforts will be geared toward the exchange of skills and knowledge between sectors and across generations. The planned public and collective activities will be an opportunity to build new synergies between actors in the supply chain. The experiments may, if yielding satisfactory results, constitute pilot cases to encourage upscaling of the model. Coordination among practices, projects and activities will be able to foster the empowerment of the local food community.

8. Continuity- and scale-up measures

The Food Atlas of the Venice Lagoon is intended to be a collective project and a shared tool that extends beyond the CRFS Lab. Like several other food atlases, it is meant to be an interactive and open-source facility that also promotes innovative experiences.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

The core team of the CRFS Lab works in this direction, in collaboration with the Italian Local Food Policies Network and several Food Atlas to promote a National Observatory of Local Food Policies and a Network of local Food Atlases. The long-term aim of those actions is to sustain the production, the implementation and the monitoring of local and national food policies.

Moreover, the IUAV Team will meet the other Italian CRFS Labs to develop common objectives and possible collaborations, and to discuss problems related to the shared planning and policy framework.

9. Risk assessment

Each of the experiments and the overall work of the CRFS Lab strongly depend on the active involvement of local partners and public administrations at all scales. Particularly regarding the public actors, their support determines the feasibility and the effectiveness of the project, but despite the subscription of the MFPP, until now they have failed in producing a clear and effective non-sectoral local food policy.

To mitigate this risk bilateral meetings will be held.

The loss of interest and the involvement of local businesses, particularly concerning farmers, is also a potential risk, as they might be scared of losing time and productivity. Communication about the potential benefits of taking part in the lab activities is considered the only means to overcome the risk.

An additional risk is related to the COVID-19 pandemic, which could eliminate in-person meetings and workshops. Digital activities would hardly substitute those workshops but, in that case, more effort will be put into online communication.

3.14 14-Cilento region

1. CRFS vision 2030 and challenge statements

Vision: "Pollica 2050 — Mediterranean Living" is a project on territorial development and regeneration promoted by the Municipality of Pollica and the Future Food Institute, which operates through the 6 areas of Integral Ecology with the aim of creating a stable community in a territory where services are sewn on its needs. Each area is associated with concrete actions that have positive impacts on ecosystems, communities and the economy.

Challenge statements:

Overall challenge: How might we regenerate the rural territory in a participatory way in order to bring about truly sustainable and integral development for the community?

Sub-challenge statements:

- How might we enable the ecosystem to regenerate and feed itself in order to persist over time?
- How might we leverage the territory to repopulate it and to improve livelihoods in order to generate collective prosperity?
- How might we encourage individuals to think and act in coherence with the Mediterranean principles in order to promote the integral ecological lifestyle/mindset?

2. Collaboration with stakeholders

The Future Food Ecosystem is made of different stakeholders that collaborate with us and support our mission. The main categories are: UN Agencies, Public Bodies and Institutions (Municipalities, Universities, etc.), Public and private organisations (Foundations, Associations, Pro Loco, etc.), Academia (Schools, Universities and several professors), Trade associations that represent collective interests, Research and training companies, Cultural and creative enterprises, Manufacturing firms, especially in the agri-food sector, Corporates and startups, Companies providing services in the field of utilities (energy, water, waste, mobility, etc.) and services with high added value and characterised by a high level of environmental

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

sustainability, Many citizens, of all ages, are eager to participate in a phase of co-management of the village.

3. Living Lab resources

Facilities	Resources	Investments needed
<ul style="list-style-type: none"> Castello dei Principi Capano Center for Studies School and Experimental Mediterranean Laboratory of Integral Ecological Regeneration Venue for events Food Alchemist LAB 	Team made by 6 team members working only on the Paideia Campus and the Living Lab project, of which 2 are Innovation Facilitators, whose role is to advance the participatory multi-actor approach and guiding the execution to achieve best practices, developments, and innovations.	Beyond the Cities2030 projects we are looking to be working with clients in order to be financially sustainable beyond the Europeans Grant contributions. The monthly burnout is approximately 40.000 €.

4. Living Lab experiments

1. PAIDEIA DIGITAL ACADEMY

The first Paideia digital academy courses were held between July and August 2022, and they will be replicated after improvement in the fall of 2022. Adventure & Videomaking, 3D eco modelling and design, archeo minecraft and coding. All the courses (of varying duration, from a weekend to a week) are designed to make young people reflect on the importance of the territory in which they live and on building narratives that pass on the cultural wealth that exists, inextricably linked to that of food.

Specific Key Objective	Thematic Working Group	Study question	Target	Monitoring System	Timeframe
Develop food culture and skills	Ecosystem services	How can we take advantage of the digital tools to pass through values?	Children and teenagers, mainly local	# of participants	Learn

2. PAIDEIA | REGEN ACADEMY

A food diplomacy project that identifies in conviviality and the practice of the vegetable garden – emblematic elements of the Mediterranean diet – a powerful tool for inclusion, regeneration and integral ecological development. The LL represents a plural, welcoming and inclusive community that makes itself available to offer a process of integration. After initial selection, microlearning and digital coaching phase, the selected young immigrants arrive at the LL in Pollica for 3 months of training during which they will be involved in hands-on activities and immersive learning experiences, networking and community projects. An extensive, hands-on learning course in which they will discover and study the principles of agroecology and regenerative agriculture.

Specific Key Objective	Thematic Working Group	Study question	Target	Monitoring System	Timeframe
Develop food culture and skills	Ecosystem services	How can we spread the knowledge of regenerative agriculture and increase occupation, while teaching skills to	Immigrants	# of participants	Build

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

		less fortunate people?			
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3.IL BORGHO DEL TESORO – THE TREASURE VILLAGE

After the first community hackathon designed to find solutions to local problems, held on 26th and 27th of March, the winning team worked on the idea in June, July and August to optimise it and make it a reality. Through an ongoing participatory process, the idea was transformed into reality on 21st August 2022 with a treasure hunt aimed at getting young people to reflect on the importance of water resources, biodiversity, the value of the Mediterranean diet, the role that the elderly have in society until reaching the final stage, a vineyard on top of the mountain on which Pollica stands. Here the final moment took place – in a vineyard of the municipality that was abandoned until a few years ago, grapes are growing again and it is now up to the entire community to contribute to take care of them.

Specific Key Objective	Thematic Working Group	Study question	Target	Monitoring System	Timeframe
Develop food culture and skills	Ecosystem services	How can we communicate the heritage and values that surround the village to the local community and tourists while empowering them to take action?	Local children, adults and tourists	# of participants	Learn

4. CONSORTIUM FOR THE TOURIST DEVELOPMENT OF THE LANDS OF THE MEDITERRANEAN DIET

We promoted the establishment of the Consortium which aims to protect, enhance and care for the general interests of the Mediterranean Diet tourism sector. The main purpose is the dissemination of the Mediterranean diet to protect the state of health and for the study of its components. Also to initiate the process, beginning from October, to become an important presence in the area to disseminate knowledge and information and to become a reference point for the local mountain tourism sector.

Specific Key Objective	Thematic Working Group	Study question	Target	Monitoring System	Timeframe
Protect & preserve natural resources	Ecosystem services	How to aggregate and maximise the dormant resources already in place to enhance mountain tourism?	Tourists	# of tourists in accommodations, restaurants, etc. during low seasons	Build

5. TRAME MEDITERRANEE – BLUE EDITION

A one-week programme held in July 2022, which stemmed from the meeting between the Pollica LL and Cilento fishermen during the EU Agrifood Week held in May, which was created with the aim of raising awareness of the immense value of the intangible heritage of the Mediterranean Diet. The experimental programme aimed to involve passionate students, fishermen, scientists and researchers, with the objective of drafting a proposal for a law to establish and manage an Experimental Marine Area. Participants learnt

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

about sustainable fishing and non-sustainable fishing, collected litter on beaches and produced a manifesto for the first experimental marine area in which the role of fishermen becomes strategic again.

Specific Key Objective	Thematic Working Group	Study question	Target	Monitoring System	Timeframe
Protect & preserve natural resources	Ecosystem services	How to raise awareness on the challenges of sustainable fishing and implement rightful actions?	Youth, researchers, fishermen, whoever has an interest in the marine environment	# of municipalities involved in the experimental marine Area	Learn

5. Other Living Lab's measures

We are working on task 4.1 and 4.4, working on events to engage the local community, capacity building events and looking for additional funding opportunities. We are also engaging our stakeholders and potential clients in order to increase our Living Lab financial sustainability.

6. SMART Goals

EXP1_Grow the numbers of participants by 10 within the next 3 months. This will be accomplished by further communicating and disseminating the courses through social media platforms, flyers and day-to-day interactions with the community.

EXP2_Educate at least 8 immigrants on regenerative agriculture. This will be accomplished through an accompaniment path to entrepreneurship and cooperation.

EXP2_Reach at least 2 immigrants employed in regenerative farms within the next 6 months after taking part of the course. This will be accomplished through an accompaniment path to entrepreneurship and cooperation.

EXP3_Grow the number of people engaging with the local natural resources around the village by 20%. This will be accomplished by further communicating and disseminating the presence, organising events.

EXP4_Increase the % of mountain tourism and presence in the mountain during the low season. This will be accomplished through the action of the Consortium, with communication activities, and promotional events.

EXP5_Involve at least 10 municipalities to support the proposal of legislation establishing an Experimental Marine Area.

7. Communication, dissemination and exploitation

Future Food works closely with its stakeholders to disseminate what it is doing. We have also signed a partnership with Dot Academy, which provides digital training that is supporting the communication. We attend events and conferences, we regularly post on social media and we write articles on Medium to make people aware of the Pollica 2050 regeneration model.

8. Continuity- and scale-up measures

Through collaborative co-creation, verified through active prototyping, the "Pollica 2050 — Mediterranean Living" project has built a strategic model that builds inclusive prosperity starting from the integral ecological approach. Built upon the hypothesised and prototyped management tools, the Pollica 2050 project is actively developing a tangible ecosystem capable of feeding and regenerating itself to sustain throughout time.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

9. Risk assessment

Create an open ecosystem, capable of eliminating cultural, logistical, and bureaucratic frictions, facilitating collaborations between the various stakeholders and between the various disciplines.

Continue the collaboration with companies and trade associations that will be able to implement the tested models on a large scale in the future.

Work to create a community and a territory capable of welcoming this experimentation: Pollica and an "Ecosystem Builder" to facilitate the process.

The management model is capable of involving all stakeholders in a harmonious way to give the right operational tools to ensure the ecosystem a flexible and inclusive structure that promotes economic development, which aims at social cohesion, and facilitates the spread and scalability in the territory. Therefore, the management model is made for the use of different tools.

3.15 15-Marseille

1. CRFS vision 2030 and challenge statements

The Marseille Living Lab challenges the disparities in access to healthy and sustainable food, as well as the economic fragility of the local urban agriculture ecosystem. This contributes to different policies and programs:

EU FOOD 2030 policy¹¹: nutrition for sustainable and healthy diets. Food systems supporting a healthy planet. Innovation and empowering communities.

Cities2030 objectives: Stop food poverty and insecurity, ensure access. Enhance circularity and local food belts. Develop food skills, culture and heritage.

Aix-Marseille-Provence Metropolis and Pays d'Arles territorial food project (PAT) issues¹²: economy and employment. Nutrition, health and social accessibility. Identity, food, cultural and tourist heritage.

Vision: In Marseille Living Lab's vision, in 2030, access to healthy and sustainable food from local production is improved by new ways of distribution, and fostered cooperation between actors of the CRFS. Citizens are re-connected to local, sustainable and healthy food production via new ways of food governance and food distribution.

2. Collaboration with stakeholders

Marseille Living Lab collaborates with local authorities (city and metropolitan government), the state, civil society and NGOs (VRAC, ADDAP13, Dunes, etc.), the urban agriculture network, social centres and inhabitants.

3. Living Lab resources

Marseille Living Lab operates with the CITAG team (project coordinator, project team, communication staff, event coordinator and administration team) to lead the experiments and other actions. CITAG's urban farm Capri will produce vegetables and host workshops and other learning events. Additional funding will be

¹¹ FOOD 2030 policy https://research-and-innovation.ec.europa.eu/research-area/environment/bioeconomy/food-systems/food-2030_en#main-goals

¹² <https://pat-ampmetropole-paysdarles.jenparle.net/pages/en-savoir-plus>

needed for some experiments and other actions, and is expected from the city of Marseille as well as private foundations.

4. Living Lab experiments

Experiment n° 1: Agenda AU – Marseille’s urban agriculture agenda

Brief description of the experiment: public agenda on urban agriculture in Marseille, containing information about recurring as well as one-time events, such as volunteer work camps, selling points for agricultural products (mainly vegetables) and workshops.	
Objectives of the experiment:	
<ul style="list-style-type: none"> - Connect citizens with urban food production and facilitate their participation. - Develop a public agenda, with both an online and a paper version (regular updates on the online version, 4 paper versions in 2023). - Mobilise the urban farming network in order to obtain contributions to the agenda (at least 10 contributions per paper release). - Enhance knowledge of the urban agriculture ecosystem amongst citizens and tourists. - Reach new participants for events organised by urban farmers. - Reach new customers for urban farmers. 	
Contribution to Cities2030’ key objectives ¹³ :	4 and 5
Association with working groups ¹⁴ :	3 and 5
Study question: can a public agenda, both online and on paper, contribute to creating greater awareness for local urban food production in Marseille? Can it raise or stabilise sales of local food producers throughout the year?	
Hypothesis	
1) A public agenda can generate greater knowledge of the urban agriculture ecosystem amongst the greater public.	2) A public agenda will not have any measurable effect on the urban agriculture ecosystem.
Assumption: the average public in Marseille is not aware of the multitude of activities related to urban agriculture in the city.	
Target group of the experiment:	Urban farming network Young adults (18-25 y.), adults (25-60), seniors (+60)
Monitoring system:	<ul style="list-style-type: none"> - Counting the return rates of the paper version that will be distributed in a variety of public places in Marseille. - Survey via social media. - Counting new customers at urban farms.
Time frame: ideate: M21-M24; build: M25-M27; monitor: M28; learn: M29	

Experiment n° 2: Épicerie mobile – mobile grocery store

¹³1) Secure healthy and sustainable food, 2) Stop food poverty and food insecurity, 3) Protect and preserve natural resources, 4) Enhance circularity and local food belts, 5) Develop food culture and skills

¹⁴ 1. Production, 2. Processing, 3. Distribution, 4. Markets, 5. Consumption, 6. Waste, 7. Security, 8. Ecosystem service, 9. Livelihood, growth, 10. Inclusion, equity

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Brief description of the experiment: the mobile grocery store provides access to healthy and sustainable foods in deprived areas in Marseille. It is a travelling van that will offer products at affordable prices, locally produced vegetables as well as dried products, adapted to the inhabitants needs and uses.

The experiment will be divided in 5 distinct experiments:

- 1) sale of urban farm Capri vegetables with consultation on products expected by the inhabitants and qualitative feedback on the farm,
- 2) adding dried bulk products to the mobile grocery store's offer,
- 3) selling vegetables at existing dried food, bulk buying groups in deprived areas,
- 4) sensibilisation and food transformation workshops for the users of the mobile grocery store,
- 5) enlarging the variety of products by introducing local food producers to the mobile grocery store and selling their products.

Objectives of the experiment:

- making fresh, healthy, local and sustainable products available for people of deprived areas in Marseille, with an offer adapted to inhabitants needs and uses,
- adapting the food production of a local farm to the needs and expectations of its neighbourhood's inhabitants,
- empowering inhabitants to tend towards a more sustainable food consumption and to waste reduction,
- establishing a series of regular events in each neighbourhood that contribute to improving the living environment and creating social links,
- reinforcing the connection between the urban farm Capri and its neighbourhood's inhabitants,
- going towards new publics that are not yet familiar with the farm,
- engaging the urban agriculture network in the matter of fair access to sustainable food.

Contribution to Cities2030' key objectives:

1, 2 and 4.

Association with working groups:

3. Distribution,
4. Markets,
5. Consumption,
6. Waste,
9. Livelihood, growth,
10. Inclusion, equity

Study question: Can reaching out to residents via a mobile grocery shop help change the food landscape and consumption habits in neighbourhoods marked by poverty and with little quality local food supply?

Hypothesis

1. The mobile grocery shop makes it possible to change the food landscape of the neighbourhoods concerned, reinforces access to quality food and changes the food practices of the inhabitants.

2. The format of a mobile grocery store is too distant from inhabitants' food habits and requires a too long time for appropriation.

Assumption: the inhabitants of the concerned neighbourhoods have little access to sustainable food products, thus the mobile grocery store will change the food landscape of these areas.

Target group of the experiment:

Inhabitants (de 0 à +99 ans) of the neighbourhoods surrounding urban farm Capri, and progressively other areas with a similar social and economic structure.

Primary targets are households with little income.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Monitoring system:	- Quantitative data on sales - Qualitative data via a survey
Time frame: 2.1: ideate: M23-M24; build: M25-M27; monitor: M28; learn: M29 2.2: ideate: M25-M26; build: M27-M29; monitor: M30; learn: M31 2.3: ideate: M28-M29; build: M30-M33; monitor: M31; learn: M32 2.4: ideate: M31-M32; build: M33-M36; monitor: M37; learn: M38 2.5: ideate: M37-M39; build: M40-M43; monitor: M44; learn: M45	

5. Other Living Lab's actions

L'entraide pédagogique – mutual aid for better environmental education

A peer-to-peer training cycle for educational animators of urban farms in Marseille that aims at generating synergies between actors of the education on agriculture, food and ecosystems in Marseille. It also aims at creating a better educational program on CRFS related issues directed to children in Marseille. Time frame: M19-M36.

Communication, dissemination and capacity building actions: several events addressed to the greater public and professionals of the food sector. Objectives: capacity building, generating knowledge and discussion on CRFS. Rencontre Tiers-lieux nourriciers (third spaces as actors of the CRFS) M30
48h de l'agriculture urbaine (dedicated to informing the greater public about urban agriculture and sustainable food production) M32.

JAUM (reflecting on experiments, sharing knowledge, discussing CRFS) M38

6. SMART Goals

1. The urban agriculture agenda will contribute to a reconnection between citizens and food production, by enhanced knowledge about the urban agriculture ecosystem. This will be achieved by distributing 250 copies of the urban agenda every three months in 2023, and 500 in 2024, with a return rate below 20% (experiment 1).
2. Local food producers in Marseille will gain new customers via the urban agriculture agenda. The effect will be measurable by the end of the experiment phase.
3. The mobile grocery store will contribute to a more inclusive and suitable food offer in deprived areas by allowing citizen participation in the food selection and design of the mobile grocery store. 15+ inhabitants of each target area will participate in workshops during the first semester of 2023 (60+ in total) (experiment 2.1).
4. By the end of 2023, four neighbourhoods will have weekly access to sustainable and healthy dried food products via the mobile grocery store. They will be six in 2024 (experiment 2.2).
5. By the end of 2023, four neighbourhoods will have weekly access to locally produced vegetables via the mobile grocery store. They will be six in 2024 (experiment 2.3).
6. Inhabitants of the areas targeted by the mobile grocery store will gain complementary skills in cooking with seasonal, local vegetables, via a series of transformation workshops conducted during the second semester of 2023. At least 10 inhabitants of each area will participate in these workshops (60+ in total) (experiment 2.4).
7. By the end of summer 2024, the mobile grocery store will contribute to securing local food production by stabilising or increasing the sales of participating local food producers, compared to the period prior to the experiment (experiment 2.5).
8. The number of households reached through the mobile grocery store will be stabilised or increased by the end of the first semester of 2024, compared to the start of the experiment (experiment 2).

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

9. Cooperation between actors of the urban agriculture ecosystem in Marseille will be enhanced via a peer-to-peer training cycle. 5+ urban farming or gardening projects will participate (other actions).
10. Global awareness for CRFS related issues in Marseille, especially local food production and food security, will be enhanced via a series of events aiming the general public (e.g. 48h de l'agriculture urbaine in 2023 and 2024), as well as civil society, policy makers and researchers (e.g. JAUM 2023) (other actions).

7. Communication, dissemination and exploitation

JAUM 2023: public event targeted at CRFS actors, policy makers, researchers. 1 LinkedIn post per experiment. 2+ Facebook posts per experiment. 5 Instagram stories per experiment. 1 press release per experiment.

8. Continuity- and scale-up measures

Progressively developing new distribution points and mobilising new local food producers. In the second phase, presenting the mobile grocery store to other cities of the area.

9. Risk assessment

Low participation of target groups is a medium level risk that can be addressed via the mobilisation of field actors that know local communities.

Low participation of food producers, a medium risk, will be addressed by demonstrating positive results via first experiment stages.

Time and resources needed to fully implement the mobile grocery store are important, which can cause delays in execution. This risk can be addressed by good anticipation.

The lack of additional fundings is a high risk CITAG will address via research of an alternative business model.

3.16 16-Arganda

1. CRFS vision 2030 and challenge statements

Region: A great variety of industries have settled in Arganda, which has one of the most important industrial areas in all of Spain, with fifteen industrial areas (more than 3500 companies and around 30.000 employees).

Vision: Industry digitalization is paramount.

Challenges:

Challenge #1: Monitoring of relevant environment parameters of food production processes
The CODAN company, which operates the food processing factory, is currently transforming the factory from a traditional model to a Smart Factory model. CODAN is going to operate the systems in order to improve the performance of the factory, exploiting the data gathered during the food processing activities.

Challenge #2: Facilitating food transparency in supply chain

It is intended to explore possibilities to incorporate into the product information, relevant data on production, such as the origin of the main foods or a carbon footprint calculation.



Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

2. Collaboration with stakeholders

Build capacity on systems thinking and participate in appropriate training and events organised by Cities2030: Participation in Lab-to-Lab meetings by LL owner (UPM). Participation in LL – reflection session for T5.2. Participation and moderation of T5.2 – Wrap-Up sessions (27.4.2022).

Carry out Systems Thinking/Capacity building Workshops (STW) with local stakeholders:

Consumer workshop: The target groups invited to this workshop are regular consumers, either technology or food products. The objective is to obtain feedback on the general public's perception of the innovations proposed in the Arganda lab. These workshops will be held mainly at the UPM facilities. Consumer workshops have been carried out where systems thinking has been explained and some questions have been asked to food consumers in Madrid (Spain): 20 April 2022. A questionnaire was provided and consumers received a gift (pastry product) for answering the questionnaire. 55 responses were collected.

Expert workshop: The target groups invited to this type of workshop are professionals from one of the food system links, who are used to dealing with food production systems, traceability, waste management, packaging, labelling, among others. The objective of this type of workshop is to obtain a more detailed opinion on some specific aspect of the proposed innovations, so that they can improve day-to-day work in these food systems. An example may be presenting factory workers with a new application that manages incidents that may occur in the manufacturing process, in order to obtain recommendations to improve this application and adapt it to real food production scenarios. These workshops will be held mainly in expert's facilities. One expert workshop was held the 8th of July 2021 in a processing company facility (Arganda municipality) where experts in food processing exchanged ideas of how technology can help process automation in Industry 4.0.

3. Living Lab resources

In addition to the manager of this Living Lab (UPM), there are also other companies in the field of food systems that have collaborated and continue to collaborate with UPM in research projects and innovation activities. Some of these companies are Harinera Arandina S.A. (located in Aranda del Duero, Spain) and Codan S.A. (located in Arganda, Spain). In this section, we will focus on the resources available by the lab in relation to the company Codan with which agreements can be reached for the implementation of solutions developed in Cities2030. Codan is one of the leading manufacturers in the pastry and bakery Spanish industry.

4. Living Lab experiments

Experiment#1: Evaluates if the Quality-of-Experience (QoE) of customers when buying bakery products increases if mobile applications are employed to enhance the shopping experience. An experiment is based on the monitoring of working conditions of workers in a food production company. Gas emissions, temperature and humidity will be measured in real-time and represented in a dashboard. S2CP components will be used. A stakeholder's workshop will be done where factory workers evaluate the feasibility of the solution.

Experiment#2: Focuses on analysing if the users' satisfaction and QoE increases if customers are provided with trustworthy and transparent information about the bakery value chain, suppliers and products. The second experiment is based on the development of a marketplace, enhancing the process of dealing with providers and offering a more efficient approach in obtaining supply chain information, increasing final information associated with a product.

Experiment#3: Focuses on improving the production efficiency and workers wellbeing through an Industry 4.0 sensing platform. Continuous and automatic monitoring should help companies reduce resource consumption, waste, and improve the wellbeing and working conditions.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

5. Other Living Lab's measures

The Living Lab does not have any other measures apart from experiments.

6. SMART Goals

Specific Goals to achieve, related to Challenge #1. Monitoring of relevant environment parameters of food production processes: GOAL#1: Indicator: Thermal discomfort reduction. Types: Productivity, behaviour, gender equity. Target value: Reduction in unitary annual number of thermal discomfort episodes in 10%. GOAL#2: Indicator: Real-time alert notification. Types: Productivity, delivery and time. Target value: Generation of alerts related to real time information in less than 30 seconds since error detection.

Specific Goals to achieve, related to Challenge #2. Facilitating food transparency in supply chain GOAL#3: Indicator: Improvement of user satisfaction. Types: Quality. Target value: Improvement in users' satisfaction and QoE (global, trustworthy and transparent information): Significant at $p < 0.005$. GOAL#4: Indicator: Increase in supply chain information. Types: Quality, Productivity. Target value: Increase in the quantity of supply chain information per specific product by 10%.

7. Communication, dissemination and exploitation

The communication strategy goes through the promotion of the activities carried out in the lab so that these practices are accessible and replicable by other Labs and other CRFS actors. The following list of communication actions is established: Publication of events and results on the Cities2030 Community platform: <https://cities2030-community.gisai.eu/labs/page/5-welcome-page/>. Continuous update of the general information of the Lab on the official website of Cities2030: <https://cities2030.eu/crfs-lab/arganda-lab/>. Publication of Good Practices in S2CP Good practices tool: <http://good-practices.gisai.geuide.upm.es/>. Generation of audiovisual material in the form of videos with the results of the experiments. As an example, you can see previously created material for similar research projects: <https://www.youtube.com/watch?v=jj9AKWRaU>.

The dissemination strategy goes through the publication of results in appropriate forums. Since the innovations that will occur in the Arganda Lab are related to the use of technological tools to improve processes in the field of food production, the forums that have been chosen for the communication of results are technological forums. A study has been made of the main congresses that would be suitable for the dissemination of results, given the theme of technological innovations within the field of food systems. The congresses selected to make these contributions are listed below: (1) ICITS – International Conference on Information Technology & Systems¹⁵. ICITS is an international forum for researchers and practitioners to present and discuss the most recent innovations, trends, results, experiences and concerns in the several perspectives of Information Technology & Systems. The conference is held annually and the lab managers have experience in publishing articles on technological innovations in food systems, so they know that this topic is within the scope of the conference. (2) CISTI – Iberian Conference on Information Systems and Technologies¹⁶. CISTI is a technical and scientific event, whose purpose is to present and discuss knowledge, new perspectives, experiences and innovations in the Information Systems and Technologies field. Accepted papers in CISTI'2022 will be submitted for inclusion into IEEE Xplore Digital Library and will be submitted for indexing in ISI, Scopus, EI, INSPEC and Google Scholar. The conference is held annually and the lab managers have experience in publishing articles on technological innovations in food systems, so they know that this topic is within the scope of the conference.

¹⁵ <https://icits.me/>

¹⁶ <http://www.cisti.eu/>

The exploitation strategy considers the profitability of the assets generated in the project to provide additional value to the work carried out, and that supposes a benefit for the Labs owners or the lab facilitators. In this case, the decided exploitation strategy goes through the registration of the intellectual property of the generated assets, without having yet decided on the type of use licence for these assets. Arganda Lab participants have previous experience in software registration through the organisation to which they belong, UPM. The UPM has an Intellectual and Industrial Property Unit, which is in charge of protecting the research results generated by the university community to favour their transfer to the productive sector. Among its functions are patent management, advice on matters related to intellectual and industrial property, registration of intellectual property works of a technical nature (computer programs, databases, multimedia works), institutional brand management and training on intellectual and industrial property.

8. Continuity- and scale-up measures

It is considered a priority to establish a set of decisions and actions that guarantee the support of continuity and scale-up of the Lab activities after the Cities2030 project time frame.

Some of the actions have been implemented: The useful life of the Initial infrastructure investment to support the technological deployments of the project is greater than the Cities2030 project timeframe. Some cloud hosting servers and sensor devices that have already been financed will continue to function beyond Cities2030, so it is not necessary to make new investments in equipment the first years after the project. Web access to the resources is also covered on a short-term basis through long-term domain registration and prepaid SSL security certificates.

In order to sustain the infrastructure beyond the project, new financing proposals for projects with objectives similar to Cities2030 will be used, to give continuity to the actions undertaken in these months, and private financing mechanisms will also be used by the companies of the food systems and those that are part of the Living Lab, which will see the benefit of applying these innovations to their production processes recognized.

9. Risk assessment

A risk analysis is carried out considering for each risk the properties of Probability (How often will a certain risk lead to an accident?) and Severity (When that risk does cause an accident, how severe will the outcome be?), as Low, Medium or High. For each risk we provide a description (D), an analysis of the cause of the problem (C) and which would be the mitigation measures (M) to reduce Probability or Severity.

Risk description (D) / Cause of the problem (C) / Mitigation measures (M)	Severity	Probability
(D) Conflict of interest between the conclusions and the business of the partners. (C) Desire of the partners to obtain good results of the analysis and to be reinforced. (M) Duplicate work because some partners want to draw their own conclusions.	M	M
(D) Prejudices when analysing the data. (C) Vision of the problems of a CRFS only through the vision of a stakeholder. (M) Working with the client to explain a more objective view to the partner outside of their perspective.	L	L
(D) Lack of information at the regional and city level. Usually only aggregate data is available. (C) The organisations that generate statistics are at the autonomous community or national level. (M) Additional research to try to disaggregate the information obtained initially.	H	M

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

(D) Problems involving end users, due to reluctance to participate in the Living Lab. (C) Lack of incentives for end users to participate. (M) Additional work alone to cover, through alternative sources of information, the data that the stakeholders did not provide.	H	M
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3.17 17-WINE@SICÓ

1. CRFS vision 2030 and challenge statements

Region. Located in the centre of Portugal, the region of Terras de Sicó covers six municipalities around the Serra de Sicó massif, which divides the river basins of Nabão and Soure. It aggregates the relevant wine subregion of Beiras and must follow the production technologies and traditional oenological practices, as well as those legally authorised. The wine production in this region goes up to the Roman empire, with soils of clay-calcareous origin, with different nuances with small outcrops of schist, populating the green of the sunny slopes with a climate of cold, wet winters and hot, dry summers.

Vision. The vision for the region is to become a sustainable wine producer region that must solve issues related with rurality, elderly population, and the implication of climate change on the production. No formal CRF such a vision covers the complete value chain: producers, associations, distribution, sellers and consumers. The region of Sicó covers an area of roughly 1.500 km² with an occupation of 75,03 hab./km². One quarter of the population presents more than 25% while 75% have more than 25 years, while the vineyards are very small (less than 10 ha), family-type producers.

Challenge. The Cities2030 project will focus on the sustainability of wine production, propose a CRFS that might help minimise rurality to fixing populations, and to provide new tools that might help such an endeavour. From a technological point of view, new tools must be developed to help producers and associations to forecast wine production, anticipating the stock for the distribution and commercialization. These tools will help the players to have a decision support tailored for their needs, becoming sustainable, reducing waste by circular economy and the impact of climate change in the vineyards.

2. Collaboration with stakeholders

To deploy a tentative CRFS and become sustainable, all value chains must be gathered. Major stakes are the low education of producers (mostly empirical knowledge) and lack of digitalization. In this particular case, the association of producers will have a relevant role in promoting the digitalization and creating the connection with distribution and stores. Municipalities and parishes will be of relevance for the social area (demography, new policies to attract and maintain population, producers). Distribution, sales and fairs will play a relevant role in the promotion and sustainability of the CRFS.

3. Living Lab resources

Most of the Living Lab experiments will require data collection. Multi-property data that is available at satellite imagery levels and ground weather stations will be employed. Additional data (quality) may be obtained from producers and associations. Local visits to vineyards will be accomplished with the associations. Computational cloud computing time and frontend development will also be needed and provided by PRIM. Additional funding may be obtained through special calls of national funds.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

4. Living Lab experiments

1. Compile empirical data. Collect information regarding crops for a better understanding of the particularities of the wine production in Sicó, contributing to “Develop food culture and skills” - “Production” and “Processing”. Collecting (M30-M32), Interpretation (M33-34).
2. Understand the ecosystem of Sico. Gather Earth Observation data with major variables, contributing to “Protect and Preserve Natural Resources” – “Production” and “Ecosystem services”. Collecting (M28-M32), Interpretation (M33), Implementation of data (M35-38).
3. Data analysis of wine production. Use gathered data to forecast time and scale of production, becoming a tool to maximise production and waste minimization contributing to “Secure healthy and sustainable food” – “Production” and “Waste”. Collecting (M40), Interpretation (M41), Implementation of data (M41-42), Iterate (M43 & M46).
4. Can local production attract new people? Analyse with associations and municipalities the impact of the production in demography, contributing to “Stop poverty and insecurity” – “Inclusion equity” and “Livewood groth”. Meetings (M33), Multi-actor problem solving events (M40), Iterate (M42 & M43).
5. How to improve commercialization of sustainable wine? Analyse with associations and sellers how to cope with the limited production and reach the market. Can it be a win-win solution to sell local products together? Can the wine production residuals be used for other areas? Contribute to “Enhanced circularity and local food belts”. Meetings (M34), Multi-actor problem solving events (M35), Iterate (M40 & M45).

5. Other Living Lab's measures

Beside the data production that may be used for the wine producers, it is also of relevant policy and social innovation actions. For that, meetings with (inter)municipalities, elderly and mentally-ill associations, to promote innovation and to be employed in other areas beside wine production. Extent to national, European and countries that have Portuguese as their national language is also relevant.

6. SMART Goals

1. One association having access to data digested to improve crops.
2. 4 Living Lab workshops & players meetings.
3. One scientific article focusing on climate change and Sico Region production.
4. Best practices document for product cross-selling and sustainability.
5. Validation of the data oriented platform with one producer.
6. Involve one startup in the use of wine waste for a circular economy.
7. Contact 1 incubator for ideation of circular economy for local producers.

7. Communication, dissemination and exploitation

The results of the Living Lab will be provided to the stakeholders on a monthly basis. The strategy will focus on meetings with associations and their members. For other partners of the value of chain, the communication will be trimestral also at one-to-one meeting. The data that may be released openly will be oriented with a marketing strategy for social media. The participation in trade shows (technologically and wine producers fairs) will also be envisaged.

8. Continuity- and scale-up measures

After the validation of the solution, the scalability may be achieved by participating in (national and international) wine events. Due to the easy incorporation of new data (from geographical point of view) the use of the solution in other locations will not require a large effort. For the Sicó region, it will be possible to enrol the solution by European funds.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

9. Risk assessment

Two major risks for the Living Lab are: the long (up to 12 months) time to validate the overall solution and the usability of the technological framework by elderly producers. The first may be mitigated by small evaluations and use of historical data of crops and climate. The second will use the wine producers association to push the data to their members.

4. The exploitation of Living Labs' innovation action results

4.1 Living Labs' continuous reporting of the innovation actions and results

Living Labs give feedback and reports on the initiated innovation actions. Innovation actions are classified into at least into four main groups: experiments, capacity-building events, external funding, and other measures.

As the innovation actions progress, Living Labs share the descriptions of the results, assessments of the results (e.g. TRL, KER-index), and classifications and grouping of the results. The results are entered into and shared via common digital platforms, e.g. Cities2030 community platform and Google Drive.

The next chapters (5.2 and 5.3) consider the responsibilities of two work packages (WP8 and WP5) to capture and leverage the innovation action results data at the project execution and beyond.

4.2 Continuous monitoring and analysis of the innovation actions and achieved results, and further processing at WP8

The Living Labs' innovation actions and the achieved results are a core interest field of the coordinator's continuous project monitoring and analysis actions (CA 6.4.2, GA task 8.3). Living Labs' feedback on their performance and progress is a feed to internal communication (General Assembly, ExeCom, other internal meetings) responsible by the coordinator (task 8.2) and the continuous and periodic reporting (M36, M48) at SYGMA, coordinated by the coordinator.

The further processing of the knowledge management related to Living Labs' innovation actions and results takes place in the framework of task 8.6 – Knowledge Management. The task will advise the consortium to develop and implement an internal policy for managing scientific, technical, and other value-added information produced by the project. The aim here would be to ensure that all relevant results are available to the community free of charge and in a way that is conducive to reuse (Open Access). Task 8.6 has a core role to evolve an evidence-driven and open solution to manage the knowledge related to the transition to sustainable CRFS. P02 EPC is responsible for planning and implementing task 8.6.

4.3 Partners' exploitation plans to secure results uptake, deployment continuity and maximise the potential scale-up at WP5

Living Labs' results exploitation planning is directed by task 5.3 by AGFT (P27). The aim is to support partners to identify and uptake project results that they aim to reuse, replicate, adjust, leverage, and scale up in their own environment to contribute to the sustainable CRFS transformation beyond the project time frame. Business planning and business modelling are included in the exploitation planning framework.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Page | 75

Exploitation planning and workshops are associated with the experimenting cycle: Ideate – Build – Monitor – Learn. The first phase “Ideate” and the last phase “Learn” are most relevant from the exploitation planning point of view. In the first phase of the cycle, the Living Lab considers and foresees what kind of experiment should be conducted so that the results — whatever they may be — will be easy for partners to exploit. In the last phase of the Experimenting phase, the partners identify, describe, and assess generated results. Partners consider and describe how their entity (e.g. city, university, company, institution) can exploit the results, observations, and lessons learned in the forthcoming four years after the project closing.

Project partners deliver the exploitation workshop results to the deliverable document D7.5. It includes an insight into Key Exploitable Results (KER) and partners’ exploitation plans. The deliverable D7.5 is to be submitted to the Agency in three editions in months M28, M38 and M47.

5. “CRFS SeedInvest” investment action programme

Cities2030 identifies and explores proper procedures to establish a non-profit legal entity to raise funds, possibly a foundation model, to be led by an independent management board in which the present consortium is represented.

In parallel, it explores and typifies institutional frameworks and financing opportunities, including fundraising schemes to co-create ventures combinations that will support the acceleration of place-based (local) innovation frameworks with a regional impact, and potentially national and EUAC impact.

Also, Cities2030 organises fundraising activities on the occasion of thematically-related major events and, when feasible, on the occasion of the transnational project meetings. Cities2030 aims at structuring ten eligible investment contracts between innovators and investors selected from the report “100 innovation frameworks for CRFS” (see deliverable in WP3, D.3.7).

The recent EU initiative ‘New European Innovation Agenda’[1] emphasises the obstacles, enablers and drivers of the EU ambition to achieve ambitious climate-related objective by 2050, which directly relates to the development and widespread use of new technologies, more participatory governance and business models, societal engagement and social innovation, supported by emerging digital technologies.

This agenda is rooted in the historical perspective of innovation policy started in the EU’s engagement with innovation policy which go back to the 1950s and 1960s [2], then structured in the more contemporary Europe 2020 Strategy[3].

The New European Innovation Agenda is a principal initiative to be integrated, as an umbrella for the vast panoply of the already mentioned food-related strategies at the EU level, but also integrating the international level, for instance, by the recent United Nations’ ‘Glasgow Food and Climate Declaration’[4], elaborated during the 2021 United Nations Climate Change Conference.

That way, Cities2030 also contributes to deliver on a number of Sustainable Development Goals (SDGs).

5.1 Landscape

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

At EUAC level, the current institutional frameworks and financing opportunities related to the CRFS sphere are characterised by a series of obstacles or drivers, globally integrated in the larger umbrella of the 2021 *EU Adaptation Strategy*[5].

On this regard, Cities2030 is a climate action driven initiative, and develops as a key implementation vector of this agenda, via delivering a series of demand-driven and need-driven, sustainable, circular and ecosystem-enhancing and futureproofed CRFS, for instance, under the framework of the project's objective one (1) protect and preserve natural resources, and objective two (2) enhance circularity and local food belts.

5.1.1 Policy and governance

The CRFS-related EUAC policy and governance landscape is characterised by a vast panoply of agendas spanning from the *European Union (EU) Green Deal* as such to the *Farm-to-Fork Strategy*, including the *Nature-based Solutions research policy*, the *Sustainable Blue Economy Strategy*, the *European Climate Law and Policy*, the *Biodiversity Strategy*, the *Marine Spatial Planning Directive*, *Europe fit for the Digital Age*, to name but these few, and ultimately *a Stronger Europe in the World*.

In support of these agenda, a series of correlated funding schemes and programmes provide opportunities for all actors of the CRFS to engage in research and innovation actions, for instance the Horizon Europe Programme, LIFE, the Partnership for Research and Innovation in the Mediterranean Area (PRIMA), the European Cooperation in Science and Technology (COST), ERA-NET, the Territorial Cooperation programme URBACT III, to name but these few.

Key strategic intelligence on urban and cities development under the motto "smart cities" lack too often incorporation of CRFS as equality critical as infrastructures, transportation, connectivity and security, to name but a few.

Yet 1.3 million people are currently moving into cities each week [6]. CRFS is a central driver of sustainable development.

CRFS are proteiform orders and sui generis making it a complex task to integrate research concepts and innovation actions [7] to support transition toward circularity and sustainability.

However, CRFS develop on framed economic sectors, e.g. agriculture and agri-food, food processing and production, logistics, distribution and markets, waste management, and transversal pillars, e.g. the core CRFS as such, societal elements, natural elements and governance.

Today, CRFS link diverse interlocked issues and uncertainty [8] incorporating social economy (poverty, accessibility, equity), security, technology (innovation), nutrition (health and welfare), local/traditional cuisine preservation (culture at large), rural desertification vs urbanisation, employment, circularity and sustainability, climate action (decarbonisation, emissions, bio economy, blue growth), and more.

Essentially, current food systems are failing us in terms of livelihoods, human health and the environment as well.

IoT and multi-levels digitisation processes are well under way with a variety of benefits regarding cities' CRFS needs, and develop in a series of focal points of CRFS, from production to waste management, also

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

incorporating security, ecosystem services, economy and social inclusion. Today, CRFS are evolving intelligent systems, from manufacturing [9] to management [10] and social responsibility [11].

Also, CRFS are moving beyond business intermediaries and business-to-business provisions and are becoming global, pervasive and inevitable as they increasingly extend into citizens' spheres.

CRFS are currently a cornerstone of human development recently referred to as '*the global standard for sustainability*' [12] and framed in the *European Union Green Deal*, encompassing global trade, working life, schooling spheres, public health, where cross-border critical infrastructures (e.g. airports, railways, ports, energy, security, logistics, transport, industries at large, ICT systems, etc.) connect with individuals and organisations and link these organisations to consumers across all sectors of CRFS.

Here, it is pertinent to observe that the EU food system landscape as a whole is a puzzling and integrated arrangement of sectors whose governance is framed by a vast number of EU sectoral strategies. Its strengths and weaknesses were emphasised by the coronavirus crisis [13].

Cities2030 promotes the aforementioned EU funding programmes as a key feature of the project's 'CRFS SeedInvest', and a public funding platform for the financial support of the project's identified innovation framework.

This is done via disseminating the aforementioned programmes and liaising with the corresponding National Contact Points (NCP), whilst connecting these NCP with the actors of the aforementioned innovation framework.

Here, the Project's Cities2030 Capacity Building Programme for innovation frameworks in the technology and social spheres (outlined in the project's deliverable D5.1), assists the aforementioned participants to engage and develop project proposals to be submitted under pertinent topics from 2023 onwards.

To support the aforementioned activities, each partner identifies local, regional and national funding schemes, whilst the consortium as a whole identifies EUAC funding schemes, more specifically under the Horizon Europe Programme clusters 5 and 6 and PRIMA.

This activity leads to the co-creation of tailored support programmes for EU-funding development to support the said innovation frameworks.

5.1.2 Private operators

Venture Capital Fund (VCF) investing in seed (early stage) and Serie-A companies are substantially active in the food sector and at a number of levels from food design to distribution models [14].

The EU also develops in the private sectors by fostering international cooperation via a vast number of initiatives, for instance, with the African Union, e.g. AU-EU agrifood platform [15], which aims to strengthen the synergetic mechanisms between the EU and African private sectors.

Globally, the food-related private venture capital sector is focused on 'food-tech-connect' approaches linked to the agro/agri-tech economic sector and rooted in advancing automation systems combined with advancing urban settings agriculture [16].

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

More recently, the aforementioned trend is also driven by diverse enablers of more low-tech sustainable pathways globally framed by the concept of Nature-Based Solution, for instance, organic agriculture and aquaculture [17], regenerative agriculture and ocean farming, agroecology, to name but these few towards transforming local agri-food systems more resilient to climate change and sustainable, via supporting communities to co-create solutions resilient to shocks like COVID-19.

This tendency is motivated by the system level framework related to the recent *2030 Agenda for Sustainable Development* [18], which highlights the significance of agri-food systems in responding to global challenges such as food insecurity, poverty, biodiversity loss and climate change.

Good practices span from local sustainable and healthy food chains with shop outlets, such as Triodos Food Transition Europe Fund [19], up to large industrial developments, such as Controlled Environment Agriculture (CEA), which claimed more than half of all sustainable farming investments in Europe in 2021 [20].

Yet only a few VCF fully integrate the complete notion of the 'One planet: one health' [21] call for action rooted in the 'One Health' initiative by the UN's World Health Organisation (WHO) [22].

Cities2030 proposes to explore pioneering public-private partnerships driven by EU agendas and instruments, such as the European Cluster Collaboration and the Smart Specialisation platforms via co-creating participatory place-based support programmes (see chapter 4.3.3).

This approach is supported by successful initiatives, such as those tackling food systems challenges via their food security dimension [23].

FoodHack Global, to name but only this one, is a pertinent example on how a global community for food entrepreneurs and innovators is structured to support fundraising activities via a panoply of formats [24].

Also, Cities2030 integrates private sector initiatives towards more sustainable food systems, such is the case of FoodDrinkEurope [25].

Cities2030's conceptual approach is strengthened by pertinent examples of EU-driven enablers underlining EU developments for and with the private sectors, for instance, by fostering international cooperation via a vast number of initiatives, for instance, with the African Union, e.g. AU-EU agrifood platform [26], which aims to strengthen the synergetic mechanisms between the EU and African private sectors.

5.1.3 Societal sphere

One of the most visible food-related social movements are represented by the food sharing economy [27] and food sovereignty movements [28].

Recent studies confirm that to succeed in the transition towards more sustainable CRFS, to transform food systems for co-benefits, it is vital to structure the mobilisation of society.

This approach would lead to innovative governance models enabling sustainability and resilience, which achieve better-informed decision-making processes, societal engagement, and innovative solutions [29].

Crowdfunding is an approach to raise capital from a significant number of individuals.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Here, large clusters of citizens pool together small-scale specific investments to deliver the capital required to have a business or project started.

Individuals, charitable foundations, or corporations may set up a campaign for particular causes and anyone may engage and participate.

Around the mid-2000s, 'crowdfunding' rose around the world as one of the most effective funding schemes sourced from a societal dimension and environment, empowering entrepreneurs to raise investment via online approaches from a sizable and unorganised audience [30].

The development of crowdfunding opened on its loaning dimension with the establishment of peer-to-peer (P2P) offering platforms [31], supporting a vast number of food-related initiatives, e.g. kitchen spaces, meal sharing, food business incubators, collaborative delivery services, food donation, etc.

Cities2030 explores diverse formats of crowdfunding from evidence-based initiatives and recognised correlated platforms [32].

The vast number of societal innovation frameworks for funding and financial support related to advancing food systems, identified by the project's partners in the course of the project's implementation, provide the platform for understanding their organic mechanism and integrate those approaches in the project Cities2030's SeedInvest programme.

5.1.4 Theory of change

To advance place-based and need-driven investments in food systems, Cities2030 proposes to explore and integrate in SeedInvest programme a new paradigm, shifting from the current conventional and inaccurate approach to food systems, e.g. CRFS [33], though its original concept has been improved via more integration of environment and socio-economics factors, is yet not satisfactory, to a more enhanced model, e.g. "food environment", driven and supported by an enhanced cross-governmental and cross-sectoral cooperation: Cities Region Food Environment (CRFE) [34].

To that end, Cities2030 proposes citizens and communities must be at the core of solutions.

Cities2030 interlinks and integrates developed solutions in identified CRFS and explores CRFE considering novel EU-driven vocabulary/narrative, e.g. "Food, Bioeconomy, Natural Resources, Agriculture and Environment" [35].

"System" indicates the key features of the production of food, e.g. to summarise, production, transformation, distribution, retail and markets, consumption and waste.

"Ecosystem" in the FOOD2030, Farm to Fork and the CRFS narratives liaise, for instance (but not strictly), with "ecosystem-enhancing" to contribute to the transition more effectively considering the *EU Green Deal* as a whole, the *Farm to Fork Strategy*, the *EU Biodiversity Strategy*, the *Zero Pollution Strategy*, the *Long-term Vision for Rural Areas*, or the *European Pillars of Social Rights*, to name but these few, e.g. "Reducing the environmental burden of European diets, including but not limited to greenhouse gas (GHG) emissions, air pollution and impact on ecosystems, improving circularity (e.g. food waste and by-products), providing new, sustainable and healthy products made of alternative sources of proteins to consumers" [36].

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

“Environment” liaises with “*physical, economic, political and socio-cultural context in which consumers engage with the food system to make their decisions about acquiring, preparing and consuming food*” [37].

5.2 Engagement mechanisms

5.2.1 Conceptual approach

To achieve its objectives, Cities2030 engages, connects and empowers all actors of the CRFS to gather agents representative of the food system arena in one single network, the ‘CRFS Alliance’, supported by a digital collaborative platform. Activities take place in both physical locations and digital environments, hosted by existing structures and facilities inside which a few open spaces are especially tailored to host the anticipated CRFS Labs.

Cities2030 certifies the inclusive involvement of: (1) the EU operational bodies’ and mechanisms responsible for CRFS, e.g. statutory bodies with sectoral responsibilities (utility regulators), with local regional responsibilities (local councils, regions), with subject-matter responsibilities (agencies, markets and regulatory institutions, etc.), such as Local Action Groups, LEADER Programme contact points, etc, and; (2) all pertinent actors of the CRFS landscape, value chains and the society at large.

This is done via a participatory innovation action framework with the aforementioned actors, engaging a panoply of value chains and the society at large, via triggering, implementing and sustaining clustering activities. Cities2030 secures the accurate integration of their vital place-based knowledge in the project activities, whilst fostering inclusive social participation to co-create, implement and drive the project implementation practice. This way, Cities2030 mobilises all actors of the CRFS landscape and the society to accelerate coaction with local and regional public structures, generate and augment knowledge.

This approach provides accurate conditions to determine need-driven, place-based investments whilst pertinently integrating all CRFS actors to explore and structuring, for instance, local support programmes to establish sustainable and investable pipeline of investments, incentives for the private sector, pool investments, arrange regulatory and policy framework, limited range of financial instruments and partnerships, co-create insurance and other risk mitigation measures, foster assistance in defining the financial viability of businesses, and recognising potential innovation pathways, foster cross-scale, cross-governmental and cross-sectoral cooperation via pioneering public-private partnerships driven by EU agendas and instruments, such as the European Cluster Collaboration and the Smart Specialisation platforms. This is done with a regional perspective.

To that end, Cities2030 advances the conventional multi-actors approach (MMA) and practices via a novel multi-stakeholders engagement framework rooted in ‘Flexible Multi-Partner Mechanism’ (F2M) [38], developed by United Nations’ Food Agriculture Organisation combined with the project’s digitally-enhanced tools arranged via the Single Click CRFS Platform (see next chapter 4.3.2).

These actors/stakeholders are defined as per the setting of the topic, e.g. researchers and academia globally (including specifically the EU research and innovation arena), the food industry as a whole (with a focus on small-holders, local communities), industries developing innovative and sustainable CRFS-related solutions (diverse products and services, technologies and mechanisms) and CRFS-correlated socio-economic agents (businesses, SME and the industries at large), diverse consumer products commercial operators (cash and carry, markets places at large, local distributors, etc.), citizens (unorganised public), diverse civil society

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

organisations (CSO), education and training organisations, structures active in the employment sphere, financial institutions and investors (seed and venture), public local authorities, cities' authorities, governments, regulatory bodies (law, regulatory frameworks and compliance regimes), business councils, market authorities (licencing, etc.), existing and potential end-users and consumers of CRFS globally, and the Media.

The F2M method facilitates the establishment of partnerships and cooperation among the actors of CRFS to explore needs and challenges, characterise the CRFS landscape and foster integrated actions between actors for the implementation of participatory innovation and development. The F2M method is especially practised to empower and activate citizens, in particular young people, to take action, promote the practice of social innovation and ocean and water citizen stewardship, via involving the voluntary European Solidarity Corps where appropriate and possible. In this way, Cities2030 aims at contributing to the 2022 Year of Youth. Cities2030 digitalises the F2M method to foster broad societal engagement, with a panoply of tools such as the project's social space to animate thematic channels and implement sentiment analysis, hosted by Twitter (to name but this one), thus contributing to the Europe fit for the Digital Age.

The figure (herein) illustrates the panoply of actors engaged by the project Cities2030.



Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

5.2.2 Digital enablers

Understanding consumer behaviour through Opinion Mining is a principal pathway to co-creating sustainable food environments. Cities2030 proposes a series of digitally-enhanced mechanisms, such as social media sentiment analysis.

In the present age, it has become common practice for people to communicate or express their opinions and feedback on social media and web pages. Retrieving market value lies in surveying, but due to the large amount of unstructured information coming from the Internet, this traditional approach is not sufficient. A smart search is required to analyse people's opinion on product attributes, indicating positive and negative sentiments, as well as relations to other products or categories.

Opinion Mining is the use of Text Analytics and other natural language processing techniques to understand how people think of a variety of different topics. An opinion is a view or judgement about something or someone like a politician, public policy, celebrity, or a new law and Opinion Mining uses Text Analytics to identify, extract, and analyse opinions buried deep in unstructured text. They focus on polarity of opinion (positive, negative, neutral), personal feelings (angry, happy, sad, etc.), and intentions or objectives (interested or not interested). Some of the most popular types of opinion mining are explained below:

- **Fine-grained sentiment analysis:** categorises comments and statements on a scale of opinion polarity (e.g. very positive, positive, neutral, negative, very negative).
- **Emotion detection:** aimed at finding and extracting specific emotions (anger, disappointment, irritation, happiness, etc.) from text. Advanced machine learning algorithms allow us to understand the nuances of human language, even to the point of detecting irony and sarcasm.
- **Aspect-based sentiment analysis:** Allow the classification of the opinion into categories or aspects, like Usability, Features, Shipping, etc, and analyse each statement as positive, negative, or neutral. This allows a deeper analysis about a product or brand.
- **Multilingual sentiment analysis:** This technique supports text introduction in various languages. This is a difficult approach as sentiment lexicons are not available for less popular languages.

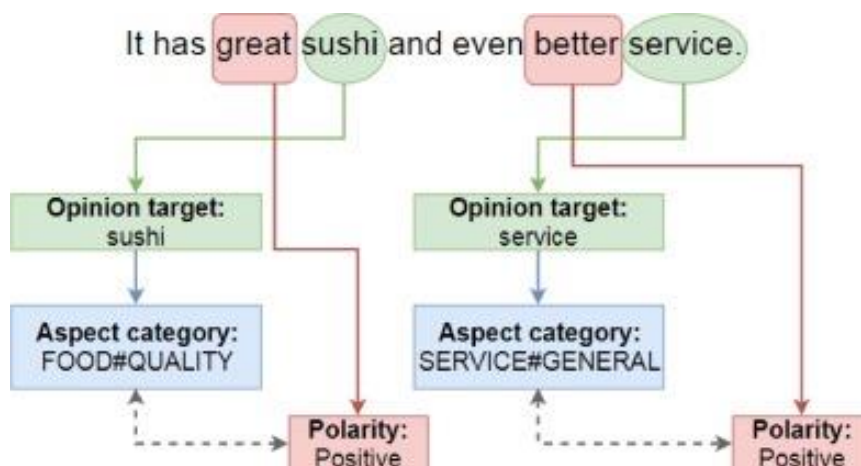


Image 7: Aspect-based sentiment analysis in Food consumption ¹⁷

¹⁷ Deep Learning for Aspect-Based Sentiment Analysis: A Comparative Review, Expert Systems with Applications, 2019, <https://doi.org/10.1016/j.eswa.2018.10.003>

Thanks to opinion mining, it is possible to capture this type of citizen's generated knowledge, coming from social media and other internet sources, and it is possible to generate consumer acceptance studies, and engage CRFS participants in place-based initiatives. This has been done in some studies describe below: In the study of Akila et al.¹⁸, opinion mining is performed on the McDonald's data set and the reviews have been classified properly, in order to find out the trending topics and most wanted topics and get a better understanding of the customer's satisfaction points.

The study of Mostafa¹⁹ analyses a sample of 100,000 tweets dealing with halal food, discovering a positive sentiment toward this food, and geo-locating consumer opinion in city maps. Scientists are using the text information to detect consumers' dietary patterns, adverse reactions, perceptions, preferences, and discussions on specific foods. The work of Abbar et al.²⁰ studies social media to get details about users' daily lives, including their eating habits.

In Cities2030, a sentiment analysis tool is provided. The aim of this component is to infer the opinion of consumers about various activities and actions taken by the LABs. To achieve this, this component gathers information related to the relevant actors from social network Twitter and performs sentiment analysis of the associated information – text of tweets and associated images (see image 7). The sentiment analysis is performed with the help of latest technologies available in NLP (Natural Language processing) and Image Processing domains, namely the Artificial Neural Network (ANN)-based algorithms. After that, the results are aggregated and summarised. Finally, they are presented in the form of plots and tables for further analysis by a user. This information can later be used to correct action plans and perform accordingly. More information about the tool can be found in Cities2030 webpage²¹ and in deliverable D6.2.

5.3 Coaction for funding

The current chapter describes the actionable framework of the CRFS SeedInvest investment action programme, as part of Cities2030's concept.

SeedInvest is embodied by two specific dimensions: (1) a series of suggested formats for the realisation of fundraising events; and (2) identified local and regional institutional frameworks and financing opportunities, which are categorised in a handbook specific to each participating country.

This information is structured to co-create place-based tailored support programmes in the cities and regions front-runners that are part of the project Cities2030 consortium, incorporating fundraising event formats and public, private or a combination of public-private funding schemes.

¹⁸ "Opinion Mining on Food Services using Topic Modeling and Machine Learning Algorithms," 2020 6th International Conference on Advanced Computing and Communication Systems (ICACCS), 2020, pp. 1071-1076, doi: 10.1109/ICACCS48705.2020.9074428

¹⁹ Mining and mapping halal food consumers: A geo-located Twitter opinion polarity analysis, Journal of Food Products Marketing, 2018, DOI: 10.1080/10454446.2017.1418695

²⁰ Abbar, S., Mejova, Y., & Weber, I. (2015). You tweet what you eat: Studying food consumption through twitter. Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (pp. 3197–3206), Seoul, Korea.

²¹ <https://cities2030.eu/single-click-crfs-platform/>

5.3.1 Fundraising events

Fundraising as such, and consequently fundraising event formats, develops in a panoply of diverse settings pending the country, region and even locality in which it takes place.

It also vary according to the specific need to be addressed considering the ten key identified features of the CRFS part of Cities2030's concept, e.g. the production sector, for example, farmers from the agriculture, horticulture and aquaculture areas (animals, crops), fisheries, etc., food processing and manufacturing, such as food and drinks, distribution and markets (wholesale and suppliers), such as packaging structures, retail and services, supermarkets, shops, etc., consumption such as businesses (restaurants, etc.), canteens in businesses, also general stores, malls and schools, waste (public and private businesses), food security, ecosystem services, livelihood (growth, economics), inclusion and equity.

Here, partners who are legally authorised by their institutional form to organise fundraising events have to identify good practices to inspire the co-organization of fundraising events until June 2024, via implementing the activities identified below:

- a) identify and approach fundraising experts motivated to contribute to your event;
- b) typify the need to determine the fundraising event specific objectives;
- c) explore the pertinent type of fundraising event via scrutinising local, regional or national good practices;
- d) establish a fundraising event budget and explore co-financing with pertinent sponsors;
- e) structure a leadership team for event co-creation, planning, organisation, realisation and follow-up;
- f) co-create, plan and organise the event;
- g) define a date and time for the fundraising event considering the pertinence of the calendar (2023 and 2024);
- h) advertise the fundraising event effectively exploring the frameworks suggested by the project's strategic plan for communication and dissemination;
- i) explore participants engagement via tickets sale when and if applicable;
- j) realise and follow-up the fundraising event;
- k) report your event via the template "Fundraising_Event_Partner_Pn_Cities2030.docx".

5.3.2 Funding schemes

Here, partners must identify local, regional and national funding schemes and explore developments with identified candidate innovation frameworks, to be described via the template "Support_Funding_Partner_Pn_Cities2030.docx".

5.3.3 Support programmes

The cardinal ambition of Cities2030 is to contribute to sustainable, equitable, climate neutral, cost-effective and ecosystem-enhancing CRFS.

This is done via developing pioneering solutions from TRL-5 to TRL-7+ in policy and governance, technology and social innovations.

We propose to integrate and structure these activities in adjustable place-based (local) intervention programmes, interlinked and mutually supportive across identified value chains, e.g. tailored local support programmes at the city or rural area level.

These Tailored Support Programmes (TSP) hereby follow a two-sided approach.

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

On the one hand, they are arranged in the format of a participatory governance framework to mobilise and empower multi-actors, an activity which was actually started at project's early stage, aiming at assembling about 30 actors of local CRFS.

The activities are rooted in furthering the mobilisation of all relevant public and private sectors, and the unorganised public as well.

Cities2030's objectives are ambitious for they reflect the political ambition of local and regional governing bodies who are either already delivering on the FOOD2030 strategy, or who are firmly committed to engage, and who integrate the project's implementation via the said co-created TSP, which are formatted as Coordination and Support Action (CSA).

Here, the partner coordinates, supports and implements place-based and need-based TSP for the development, demonstration and deployment of transformative innovations in different dimensions which are cardinal levers for change: (1) science; (2) technology; (3) social; and (4) business.

To that end, partners may establish a local multi-actor' implementation charter in the format of a Memorandum of Understanding (MoU), celebrated between relevant local and regional governing bodies representatives of miscellaneous authorities engaged in delivering on FOOD2030, also pertinent National and EU representatives of the European Commission, the project consortium partners and a vast number of actors part of the project's value chains, represented by their structures.

The charter/MoU is structured to commit the participants to cooperate and align resources to achieve the elaboration of funding schemes incorporated in the said TSP.

The 'demonstrator', which integrates the project's upscaling processes of identified TRL-5 components that are correlated with identified value chains, are the platforms for the implementation of the TSP.

The TSP activities are reported via the template "Tailored_Support_Programme_Partner_Pn_Cities2030".

5.3.4 Reporting

The results achieved during the project's implementation are assembled in the deployment programme report where the SeedInvest component is featured in the reporting table 2 as illustrated below.

Table 2: Summary of the SeedInvest implementation programme

City/Region	Innovation	Funding raising	Funding schemes	SeedInvest results
Bremerhaven, Germany				
<i>Title of innovation 1</i>	<i>Short description of the innovation framework</i>	<i>Short description of the fundraising event and correlated activities</i>	<i>Short description of the funding schemes activities</i>	<i>Short description of the SeedInvest activities</i>
<i>Title of innovation 1</i>				
<i>Etc.</i>				

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

Brugge, Belgium				
<i>Title of innovation 1</i>				
<i>Title of innovation 1</i>				
<i>Etc.</i>				
Haarlem, Netherlands				
<i>Title of innovation 1</i>				
<i>Title of innovation 1</i>				
<i>Etc.</i>				
.....				

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Annex A - rev.0

City Region Food Systems Sustransition Matrix

A key to innovation action coding:

- Experiment: City name-Ex1, for example, Brugge-Ex1
- Capacity building: City name-Cb1, for example, Vidzeme-Cb3
- Other measures: City name-Om1, for example, Cilento-Om5
- Investments: City name-Inv1, for example, Citag-Inv1

10 thematic groups	Cities2030 five key specific objectives				
	A Secure healthy and sustainable food	B Stop food poverty and insecurity	C Protect and preserve natural resources	D Enhance circularity and local food belts	E Develop food culture and skills
1 Production	Iasi-Exp1 Quart - Cb1 Harl - exp 4 Venice-Ex5 Venice-Ex6 Velica G-Ex2 Vejle-Ex5 Bremerh-Ex2 Vicenza-Exp4	Venice-Ex6 Venice-Ex8	Quart - Ex2 Quart - Ex3 Quart - Ex4 Venice-Ex4 Harl exp 4 Venice-Ex6 Venice-Ex8 Bremerh-Ex1	Venice-Ex6 Venice-Ex8 Velica G-Ex1 Vejle-Ex2 Vidzeme - Exp3 Vicenza-Exp4	Venice-Ex4 Venice-Ex6 Venice-Ex7 Velica G-Ex4 Velica G-Ex5
2 Processing	Iasi-Exp5 Venice-Ex5 Vicenza-Exp4			Brugge-Ex3 Arganda-Ex2 Vicenza-Exp4 Vicenza-Exp5	Venice-Ex4 Vicenza-Exp5
3 Distribution	Brugge-Ex4 Venice-Ex5 Marseille-Ex1 Vicenza-Exp3 Vicenza-Exp4	Venice-Ex8 1	Brugge-Ex4 Venice-Ex5 Venice-Ex6	Venice-Ex5 Venice-Ex6 Venice-Ex8 Marseille-Ex1 Vicenza-Exp3 Vicenza-Exp4 Vicenza-Exp5	Venice-Ex6 Vicenza-Exp5
4 Markets	Iasi-Exp3 Harl exp 6 Venice-Ex5	Velica G-Ex3	Venice-Ex6	Venice-Ex5 Venice-Ex6 Iasi-Exp2	Harl exp 6 Bremerh-Ex5

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022



	Vicenza-Exp4			Arganda-Ex1 Vicenza-Exp4	
5 Consumption	Seinäjoki-Ex1 Seinäjoki-Cb1 Seinäjoki-Ex2 Seinäjoki-Ex3 Seinäjoki-Ex4 Brugge-Ex2 Iasi-Exp1 Harl- exp 5 Harl exp 6 Vidzeme-Exp2 Venice-Ex6 Vejle-Ex1 Vejle-Ex3 Vicenza-Exp1 Vicenza-Exp2 Vicenza-Exp3	Brugge-Ex1 Venice-Ex8	Harl- Exp 4	Vidzeme Cb-3 Vidzeme Cb-4 Venice-Ex6 Venice-Ex8 Arganda-Ex2 Vicenza-Exp2 Vicenza-Exp3 Vicenza-Exp5	Quart-Om1 Venice-Ex6 Venice-Ex7 Harl exp 6 Vidzeme-Ex1 Vicenza-Exp1 Vicenza-Exp2 Vicenza-Exp5
6 Waste	Vejle-Ex5 Vidzeme-Exp2 Iasi-Exp7 Vicenza-Exp1 Vicenza-Exp2 Vicenza-Exp3	Velica G-Ex3 Bremerh-Ex3	Harl-Exp 1	Lahti-Ex1 Lahti-Ex2 Lahti-Cb1 Harl-exp 2 Vejle-Ex4 Iasi-Exp6 Vicenza-Exp2 Vicenza-Exp3	Harl -Exp7 Vicenza-Exp1 Vicenza-Exp2
7 Security	Vidzeme-Exp2 Vicenza-Exp3	Velica G-Ex3 Bremerh-Ex4		Iasi-Exp4 Vicenza-Exp3	Velica G-Ex4
8 Ecosystem services	Brugge-Ex4 Venice-Ex6 Venice-Ex8 Velica G-Ex2 Vejle-Ex1 Vejle-Ex3	Venice-Ex8 Velica G-Ex3	Brugge-Ex4 Harl -exp3 Venice-Ex6 Venice-Ex8	Harl- exp 4 Venice-Ex6 Venice-Ex8	Venice-Ex6 Velica G-Ex4 Velica G-Ex5 Cilento-Ex1 Cilento-Ex2 Cilento-Ex3 Cilento-Ex4
9 Livelyhood, growth	Brugge-Ex2 Brugge-Ex4 Venice-Ex7 Venice-Ex8	Brugge-Ex1	Brugge-Ex4	Venice-Ex3 Venice-Ex8 Bremerh-Ex1	Brugge-Ex5 Venice-Ex1 Venice-Ex2 Venice-Ex7

Deliverable D5.5_Innovation action deployment programme and action plan

Prepared by P5, P14, P20 and partners in Table 1 | Edited by P14 | Checked and reviewed by ExeCom | Approved by P1

Version – November, 2022

	Vidzeme-Exp2				Velica G-Ex4 Velica G-Ex5 Bremerh-Ex5
10 Inclusion, equity	Brugge-Ex2 Venice-Ex7 Vejle-Ex3 Seinäjoki-Ex1 Seinäjoki-Ex2 Seinäjoki-Ex3 Seinäjoki-Ex4 Vidzeme-Exp2 Vicenza-Exp1 Vicenza-Exp2	Brugge-Ex1 Velica G-Ex3	Quart-Ex4	Bremerh-Ex1 Vicenza-Exp2	Brugge-Ex6 Venice-Ex1 Venice-Ex3 Venice-Ex7 Harl - exp 5 Bremerh-Ex5 Vidzeme-Ex1 Vicenza-Exp1 Vicenza-Exp2

Notes:

The nature of thematic groups 6-10 is transversal.

This is a living document that will be revised on a regular base.