



Horizon 2020
European Union Funding
for Research & Innovation



Project Cities2030 | H2020 ID | 101000640 | 'Co-creating resilient and sustainable food systems towards FOOD2030' | cities2030.eu

cities2030

Innovation Action

Capacity Building Programme



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101000640

Document information

Key information	Data
Project reference number	101000640
Project acronym	Cities2030
Project title	Co-creating resilient and sustainable food systems towards FOOD2030
Project start date	October 1 st , 2020
Duration	48 months
Project Coordinator	Mr Nicola CAMATTI
Project website	cities2030.eu
Work package (WP)	WP-5
WP leader and co-leader	P05 IAAD
Deliverable leader/author(s)	P5 IAAD, Mr Bruno SALES da SILVA
Contributors and authors	All partners
Peer reviewers	
P.R. approval date/version	
Document type	R: document, report
Document/file name	D-5-1_TCBP_Cities2030_Rev-1-0.docx
Document title	Innovation action capacity building programme (TS-CBP)
Deliverable number	D5.1
Project delivery date	
Submission date	
For public dissemination	YES
Document short abstract	This document is the provision of the project's envisioned technology and social innovation dimension of the Capacity Building Programme (TS-CBP) which is built from the WP-3 key findings e.g., referred as "D5.1 – Innovation action capacity building programme". Key findings are assembled from tasks T3.2, T3.3., T3.5, T3.6 and T3.7. The main aim of this TS-CBP is to provide actionable guidelines and structured information per the project definition found in the project description chapter "1.3 Concept and methodology – (a) Concept – (a).7 – Securing efficient learning environments", concretely an "open access digital training guide and self-learning online platform encompassing a comprehensive set of learning material and generated on Google Site." The TS-CBP also uptakes from key findings generated by WP-4 and WP-5 globally, more specifically tasks T4.1 and T5.1. Cities2030 explores the CRFS educational programmes landscape combining examinations with recent studies and research on CRFS transitions mechanisms. To facilitate the distinction with the deliverable D4.1 the present deliverable is labelled "Technology and Social Innovation Capacity Building Programme" (TS-CBP).

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Acknowledgement



The project 'Co-creating resilient and sustainable food systems towards food2030' (Cities2030) has received funding from the European Union Horizon 2020 programme under grant number 101000640

Citation

Be so kind as to cite this work as:

'Co-creating resilient and sustainable food systems towards food2030', Cities2030 Consortium, 2020: D5.1 – "Innovation action capacity building programme" – Update Cities2030 consortium under the supervision of the project's coordinator.

Legislation

Legislation H2020 Framework Programme – Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) (OJ L 347, 20.12.2013, p. 104).

Euratom Research and Training Programme (2014-2018) – Council Regulation (Euratom) No 1314/2013 of 16 December 2013 on the Research and Training Programme of the European Atomic Energy Community (2014-2018) complementing the Horizon 2020 – The Framework Programme for Research and Innovation (OJ L 347, 20.12.2013, p. 948).

H2020 Specific Programme – Council Decision 2013/743/EU of 3 December 2013 establishing the Specific Programme Implementing Horizon 2020 - The Framework Programme for Research and Innovation (2014-2020) (OJ L 347, 20.12.2013, p. 965).

Rules for Participation (RfP) – Regulation (EU) No 1290/2013 of the European Parliament and of the Council of 11 of December 2013 laying down the rules for the participation and dissemination in Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020) (OJ L 347, 20.12.2013, p.81).

Financial Regulation (FR) – Regulation (EC, Euratom) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the European Union (OJ L 298, 26.10.2012, p.1).

Rules of Application (RAP) – Commission Regulation (EC, Euratom) No 1268/2012 of 29 October 2012 on the rules of application of I Regulation (EC, Euratom) No 966/2012 of the European Parliament and of the Council on the financial rules applicable to the general budget of the Union (OJ L 298, 26.10.2012, p.1).

Document history

Version (v)	Date ¹	Comment	Author	Status ²
1.0	30.05.2022	Content drafted and distributed for revision	IAAD	Drafted
1.0	5.1.2023	Peer-reviewers' feedback: TS-CBP delivers a comprehensive learning framework to provide a detailed learning environment for 3 tiers. The learning environments are organized in 11 training modules =Units of Learning Outcomes = ULOs which are centered on the project's 10 focus areas. The ULO1 is an overview of the project learning environment, ULO2-7 cover six food system functionalities "farm to fork", and ULO8-11 represents four interlinked societal challenges. Deliverable D5.1 builds upon observations and findings at WP3 tasks on regional competence gaps and needs. The deliverable analyses food system-related EU missions and drivers from learning and competence perspectives. Deliverable anchors the WP5 capacity building acts to Cities2030 other work packages and synergies beyond the project. It illustrates the development process of training modules, associated documentation, and practices to collect training material and to ensure its dissemination and exploitation. CONCLUSIONS: The overall structure of the deliverable is solid and comprehensive. The Deliverable's scope and content are in line with its definition in the GA. The objectives of the deliverable are stated clearly enough. The executive summary may not be easy to grasp, especially when read as a stand-alone text. It contains a lot of details and acronyms. Worthwhile simplifying the summary a bit. Peer-review process stated a couple of technical suggestions for the author's consideration.	SLEAN	Drafted

Abbreviations

Abbreviation	Description
CIAB	Cities2030 advisory board
CBP	Capacity building programme
CEP	Cities2030 educational programme (root of the project capacity building programmes)
CFRS	Cities regions food systems
CRFS-LL	Cities regions food systems living lab(s)
CRFS-PL	Cities regions food systems policy lab(s)
CODES	Communication dissemination exploitation of results strategy
CSO	Civil society organisation
HSNC	Healthy sustainable nutritious and culturally appropriate
EC	European Commission
ETS	Education and training systems
EU	European Union
ExeCom	Executive committee, composed by all WP leaders and co-leaders
EU-U11NUA	FOOD2030, SDG11, UN New Urban Agenda

¹ As per the project's cloud storage if applicable, or per email date if applicable

² Drafted, completed or validated



IA	Innovation action
KPI	Key performance indicators
NFIL	Non-formal and informal learning
TS-CBP	Technology and social innovation action capacity building programme
PMO	Project management office
ULO	Units of learning outcomes
UN	United Nations
RIA	Research innovation action
RRI	Responsible research and responsibility
SSH	Social sciences and humanities
SYAB	Synergies action advisory board
WP	Work package



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Executive summary

The project Cities2030 “Innovation action Capacity Building Programme” (TS-CBP), structured in the present document, is a guideline for the co-creation of a framework to assist building capacities for technology-related and social-related innovation frameworks in all actors of Cities and Regions Food Systems (CRFS) as a whole, within a multi actors setting, practicing the very same approach proposed by Cities2030 for each of the project activity. Concretely, the TS-CBP framework is provided to be practiced in training sessions involving the maximum of CRFS actors profiles in the session. The TS-CBP is rooted in the recommendations structured in the project Cities2030 “Educational Programme” delivered by WP-3, WP-4 and WP-5. The TS-CBP is structured with non-formal and informal learning³ (NFIL) settings adjusted for Youth (aged 16+ years old) and adults (e.g., aged 18+ years). However, formal education and training systems (ETS) take part in the project activities, co-creation and co-production processes, integrated in the group “general public” (public-private schools globally) and the group “scientific bodies” (public-private universities and research and knowledge bodies globally). The proposed pedagogical approach is inspired by the European Credit System for Vocational Education and Training (ECVET)⁴, which bring a structure without prior knowledge. The TS-CBP is structured on a background outlined in chapter 1 (Ch-1) to bring evidence on the purpose of the TS-CBP via its integration in the project concept as a whole, identified needs for the participative creation and development of a real-scale learning environment in line with the specific challenge of the topic FOOD2030, which is to support cities to overcome existing barriers to food system transformation and develop integrated, sustainable and safe urban food system policies/strategies in line with the FOOD 2030 policy priorities. The TS-CBP addresses in particular the technology, social innovation and empowerment of communities component of the FOOD 2030 policy. The TS-CBP suggests a series of definitions, rooted in the project concept and the anticipated material to be gathered in Cities2030’s ‘CRFS taxonomy compendium’, a provision which structures and outlines the definition of a comprehensive number of components of the food system arena, and elaborated with a participatory approach with all agents of urban food chains. The present guidelines aim at contributing to current efforts from scholars and experts around the world who are tackling the growing complexity of the CRFS landscape, especially in the aftermath of the COVID-19 pandemic, which triggered extraordinary short-term stresses on food supply chains on a global scale. The guidelines delivers a comprehensive learning framework, outlined in Ch-3, to provide a detailed learning environment, then organised in eleven training modules correlated to 11 units of learning outcomes (ULO) centered in the project ten focus areas, composed by six food system functionalities, from “farm to fork”, and four interlinked societal challenges. However, these focus areas are wide-ranging to allow end-users proceed to tailored sub-thematic, for instance the focus area “production” encompasses the entire farming scene ranging from crop-growing to husbandry in the agriculture and aquaculture economic sector. In addition, the ULO n.º 1 proposes to address the technology and social innovation dimension of CRFS, especially considering the FOOD2030 topic e.g., the current state-of-affairs on CRFS concepts, profiling the actors of the CRFS (MUFPP, EIT Food, etc.), and beyond. Finally, the TS-CBP proposes a roadmap towards 2030 for further Innovation Action (IA), and to some extent Research Innovation Action (RIA) as well, to further engage CRFS actors throughout the food system, increase public awareness and business interest, and empower all actors of the CRFS on the connection between nutrition, climate, circularity and innovation in food at large. The present guidelines connects the proposed interactive and participative learning environment with other project’s activities and experimentation, for instance via the CRFS Labs, throughout the Pan-European and Associated Countries (Pan-EU-AC) landscape.

³ [Non-formal and Informal Learning \(NFIL\)](#), Council of Europe, March 2022

⁴ [European Credit System for Vocational Education and Training \(ECVET\)](#), The European Parliament and the Council of the EU, 2009

1. BACKGROUND

1.1 Why capacity building?

Capacity building can be characterised as a practical methodology correlated to organised mechanisms which may be implemented or occur (self-empowerment) at the individual, organisational and community levels as well, and consists of competences (e.g., knowledge, skills and behavioural know-how), motivations processes, necessary to implement a particular activity.⁵ Capacity building means the transfer of competencies required for communities, groups or people to, first, identify their needs, to then address these needs. When community-based agencies are considered, the case of project Cities2030, this entails enhancing these communities' effectiveness and the features of the services they provide to people.⁶ Via capacity building, agencies have the conditions to strengthen their capability to operate, manage, support and expand their real-scale development, make use of key findings, and take action to tackle critical societal challenges.⁷ Cities2030's developments validates the need to build capacities in CRFS actors, considering: (i) the CRFS situation analysis implemented at proposal stage via structured dialogues with the partners' cities and regions, and; (ii) literature reviews, which results are outlined in the project description chapter "1.3 Concept and methodology – (a) Concept – (a).7 – Securing efficient learning environments".

Concretely, one of the most prominent findings is that CRFS are composed of complex, fragmented, dynamic, and extensive networks⁸ which link already composite interactions among the relationship elements to different entities in the food value chains, including suppliers, manufacturers, regulatory bodies, public authorities and customers, on a global scale⁹. Therefore, progress on technology innovation, business models, good governance and food security delivery for CRFS transition to sustainable and resilient food and nutrition systems constitutes an immense endeavour, linked to a wide range of equally challenging societal challenges and environmental outcomes, calling also for social innovation.¹⁰ Service oriented structures within CRFS provide the city to support various objectives (nutrition flow within the network, pricing, security, etc.) and improve the resilience of the value chain both from a business¹¹ and public service¹² perspective. Some progress has been made to address specific challenges at specific points of the value chain, but it has come at the expense of worsening outcomes in other areas, and maintaining inefficiencies at several points along the chain. Also, these inefficiencies are currently inadequately conceptualized per distinctive need¹³. Food systems prevailing answers to secure sustainability have failed to reconcile its multi-layered features (economic, social, and environmental), and have often traded them off against each other¹⁴.

Therefore, Cities2030 TS-CBP is structured to focus on regional context (territorial approach) with the cities and regions at its core, to generate circular models between cities and their peri-urban areas, to structure pathways towards sustainable CRFS, and sustainable technology and social innovation frameworks for food systems transition, providing all actors of the CRFS work together in a participative way.

⁵ [Capacity building, social capital and empowerment](#), Learning for Sustainability, March 2022

⁶ [Development and effectiveness of a community capacity building \(...\) a pilot study](#), Chae Y. et al. in Int. J. Environ. Res. Public Health, November 2021

⁷ [What strategies are used to build practitioners' capacity \(...\) and are they effective?](#), Leeman J. et al. in Implementation Science, May 2015

⁸ [Today's complex, fragmented, global food supply chains have led to an increase in food fraud'](#), 2019

⁹ [Market transparency in food supply chain: goals, means, limits](#), Joint research Centre (JRC113150, EC), 2018

¹⁰ [How inclusive innovation could transform food systems](#), the European Sting, March 2022

¹¹ [Becoming the leader in the food transition for all](#), Carrefour 2017

¹² [Edible Edinburgh wins bronze award](#), the sustainable food partnership Edible Edinburgh, 2019

¹³ [Food Chain Inefficiency \(FCI\): accounting conversion efficiencies across entire food supply chains to re-define food loss and waste](#), 2019

¹⁴ [Towards a common food policy for the European Union](#), CFP, 2019

1.2 Cities2030's contextualisation

The project Cities2030 is constructed with a specific number of group of activities labelled “work packages” (WP) which are in turn structured with specific tasks and correlated results, labelled “work deliverables”. Work package 1 (WP-1) drives the project’s implementation via monitoring and assessing the activities/tasks that enable agile teams and partners to reach their goals of monthly and iterative value delivery, aligning all activities with targeted impact Key Performance Indicators (KPI). WP-2 is a central component of the structure and provides a comprehensive framework to secure the project development and results are aligned with the European Union idea of an inclusive, innovative and reflective society considering ethics in food systems, gender and inclusion matters and Responsible Research and Responsibility (RRI). WP-3 generates an actionable blueprint to create sustainable CRFS and to provide to all agents of the food system arena an interactive approach for food supply chain planning, production, monitoring and improvement, to meet the EU-U11NUA objectives. The gathered intelligence is then applied to ensures an adequate activation of all involved participants of the CRFS under WP-5, building capacities to facilitate an efficient Innovation framework co-creation process. It is also practiced to deliver a structured environment to unlock cities’ innovation potential, driven by the same comprehensive and diverse set of agents of the CRFS, to future proof novel food systems. Activities under all three work packages WP-3, WP-4 and WP-5 assist gather, design and develop the main components and technological tools to generate a data-driven CRFS management platform for data collection, analysis and representation in multiple interfaces, the Single Click CRFS Platform (S2CP). WP-7 dissemination, exploitation of results and communication (DeoRC) secures the project’s EU level visibility and Internet presence, providing a solid basis for the project results deployment and exploitation of results. Finally, WP-8 coordinates the project’s implementation as a whole via securing a result-driven assignment of resources, fine-tuning the calendar of activities per the project’s implementation realities, and reporting efficiently to all teams/partners.

The TS-CBP integrates all WP activities in a structured way to:

- a) support each WP activities as such, via building the necessary capacities in the project’s participants, identified via needs and situation analysis, following the three tiers approach, and tailored for each activity setting and anticipated outcomes and outputs;
- b) facilitate building a shared vision on the project concept and objectives, rooted in the main aim to contribute to support cities to overcome existing barriers to food system transformation and develop integrated, sustainable and safe urban food system policies/strategies in line with the FOOD 2030 policy priorities.

In particular, the TS-CBP connects with the project instruments such as the System Thinking methodology, the observatory on sustainable urban food policies and practices, the CRFS Labs and the cities-scale pilot experiments. CRFS Labs are inspired in the concept of “Living Labs”, defined as per the project approach. Cities2030 acknowledges the definition of the anticipated policy and living labs as *“A Living Lab is an orchestrator of open innovation processes focusing on co-creation of innovations in real-world contexts by involving multiple stakeholders with the objective to generate sustainable value for all stakeholders focusing in particular on the end-users”*¹⁵. The TS-CBP training activities are hosted by the CRFS-LL which practical implementation may span from the realisation of structured workshops during which innovation cycles are implemented¹⁶, to large-scale

¹⁵ [User engagement for large scale pilots in the Internet of Things](#), project ‘U4IoT’ H2020 Programme (ID: 732078), January 2017

¹⁶ [Workshop – Digital innovation to sustainable agricultural and food systems](#), workshop by OPERA and Agroecology Europe, May 2018

aquaculture ponds where components of activities are structured to address the specificities of the project Cities2030, for example the 'Muğla CRFS Lab' implemented in Turkey in cooperation with the city of Menteşe.

1.3 EU landscape

Education is simultaneously one of the key drivers (teaching and training) and beneficiary (schooling) of the food system transition towards sustainable settings, considering for example children and Youth¹⁷. The vast majority of educational programmes on food tackles a specific part of the CRFS e.g., production (agriculture, aquaculture and farming, dairy production, etc.), transformation, distribution and markets, consumption (e.g., nutrition, diets, etc.), food science and technology, health and wellbeing, waste management, safety and quality, ICT, innovation and entrepreneurship, social sciences and humanities, business (hospitality, etc.), to name but these few¹⁸. Educational programmes and learning environment providing a holistic approach to CRFS and incorporating key fields of proficiency such as policy and technology are developing swiftly and can be found at tertiary level in universities and research bodies. Such programmes are also led and coordinated by food-related supervising bodies such as the UN-related FAO, especially in the field of agricultural systems (agroecology, precision farming, urban gardens, etc.)¹⁹. The EC have been providing impetus for education and training globally via a vast panoply of initiatives e.g., programmes Socrates, Lifelong Learning Programme, and ERASMUS+, to name but these three, and other targeting specifically CRFS such as the EIT Food Academy²⁰, which provides a particular interest as they focus on the transformation of CRFS towards more sustainable and circular food environments.

Cities2030 explores the aforementioned educational programmes combining examinations with recent studies and research on CRFS transitions mechanisms (WP-3, WP-4 and WP-5), incorporating policy and technology innovation frameworks and food-related spheres (climate, ecosystem, biodiversity, transport, energy, natural resources management, etc.) to generate the present open access digital training guide and self-learning online platform encompassing a comprehensive set of learning material and generated on Google Site. The guidelines aim at being a digital-based interactive and evolving provision (e.g., with weblinks to evolutive resources) and html format file (e.g., published on the Internet for direct/easy translation).

The present guidelines are used as an instrument to assist users access Cities2030' educational frameworks, learning pathways and partners' specific contributions e.g., EIT Food Iceland (MATIS, P22), the Future Food Institute (FFI, P23), EIT Food Latvia (RTU, P39), to name but these few, liaising with the digital learning environment offered by these partners and most importantly with partners' practical instruments for the co-creation of learning events such as Summer Schools, Workshops, the RIS Venturing School. Developed under WP3, WP4 and WP5 activities, this open access digital training guide and self-learning online platform, structured in the deliverable D5.1 "Innovation action capacity building programme" encompasses a vast number of learning instruments generated by WP-3 e.g., taxonomy compendium, Cities2030's System Thinking methodology, the "CRFS SeedInvest" investment action programme, and WP-4 and WP-5 as well.

To build the TS-CBP, Cities2030 explores and develops on both digital and physical environments to generate an actionable and deployable educational package. First, enhancement of empirical learning in real-scale environment provided by lessons learned from Cities2030 partners, outside and inside of Cities2030 developments, encompassing a vast panoply of methodologies such as peer learning, volunteering, job

¹⁷ [The EU school fruit, vegetables and milk scheme](#), 2017

¹⁸ [Educational programmes on food in Europe](#), 2020

¹⁹ [Sustainable Food Systems Masters Programme](#) (FAO), 2020

²⁰ [The EIT Food Academy](#) (EIT Food), 2018

shadowing, apprenticeships, physical and virtual learning mobilities, personal projects developments, entrepreneurship ventures (focusing on social enterprises), and more globally work-based learning.

Then, Cities2030 explores the digitization of instructional engineering to pilot virtual tools additional to available Massive Open Online Courses (MOOC), small private online courses (SPOC) and comparable instruments. Within labs, either under the lenses of policy, or technology, or engineering or social innovation frameworks, Cities2030 ideates and pilots a vast number of learning environments and pathways to deliver a pilot 'CRFS Virtual Mobility Space', part of Cities2030 CRFS Alliance, to provide experiential learning and practice.

Finally, Cities2030 further draw learning from the partnership mechanisms practiced by EIT Food and its outstanding capacity to attract the best researchers, students and entrepreneurs and significant funding from private and public sector investment as well. Likely fostering cities to join the MUFPP, and rather than creating a new educational network, Cities2030 leverages its partners networks and synergies to promote adhesion to the EIT Food ecosystem via a pioneering capacity building programme.

2. DEFINITIONS

2.1 Capacity building

The TS-CBP is defined as “a tailored panoply of resources spanning from information materials to human resources which allow building capacity in the project’s Cities2030 participants”. The training content is co-created in the country’s language on the basis of the present guidelines which is in line with the specific challenge of the topic: *“to support cities to overcome existing barriers to food system transformation and develop integrated, sustainable and safe urban food system policies/strategies in line with the FOOD 2030 policy priorities (i.e. Nutrition for sustainable and healthy diets; Climate-smart and environmentally sustainable food systems; Circularity and resource efficient food systems; and Innovation and empowerment of communities).”* Therefore, the training programme fosters a sustainable, balanced and inclusive development of place-based urban food landscape, effectively represented in the project by the partners’ cities and regions, in three distinct and structured ways:

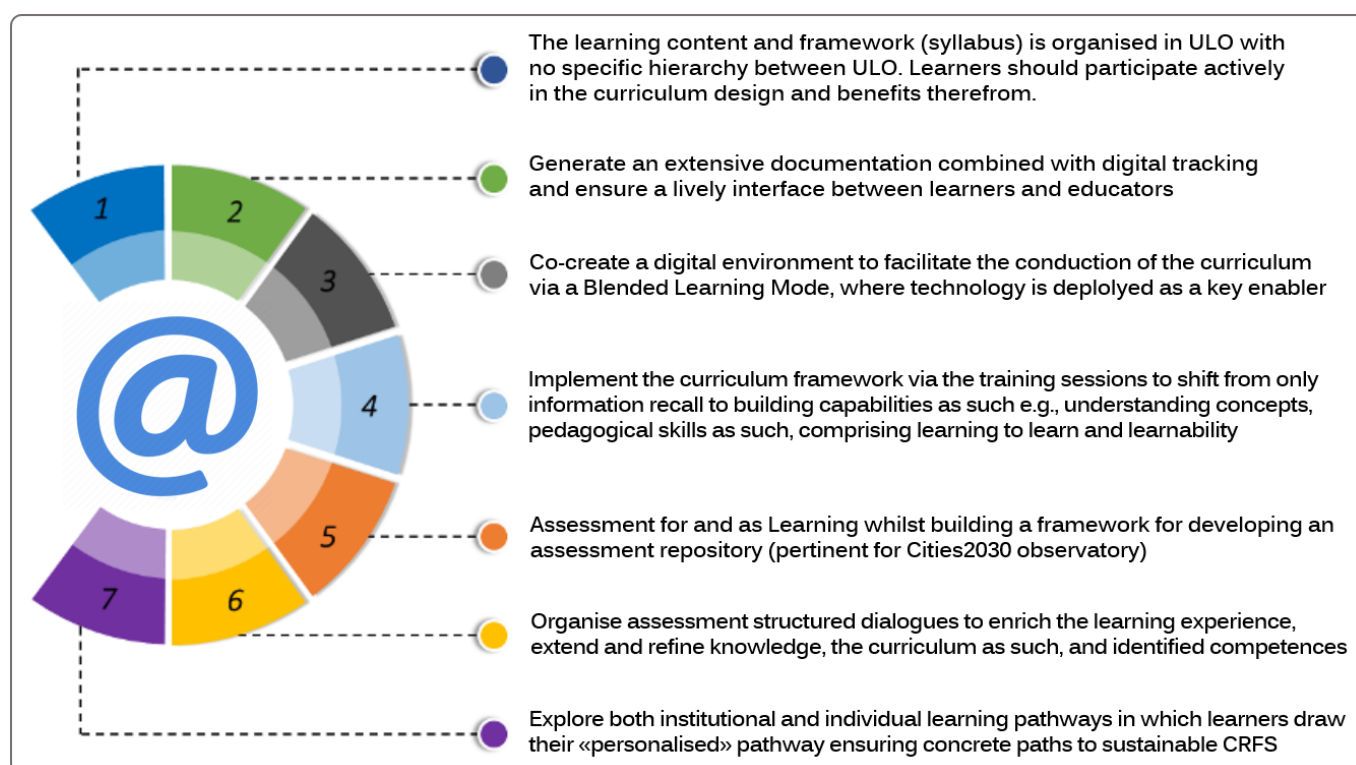
- a) support bottom-up community-led innovation to empower communities to develop, test and upscale solutions that answer global challenges in locally adapted ways;
- b) accomplish technology, business and social innovation smart goals providing people with more equitable access to the competences required to make informed choices and be actively engaged in the sustainable management of natural resources, from production or service provision to consumption;
- c) generate start-up ecosystems, community and nature-based solutions, as well as technology, business and social innovation to facilitate crucial changes and support smart, environment and climate friendly and resilient lifestyles.

2.2 Curriculum design

To maximise the broad scope of the TS-CBP, the guidelines suggests two flexible approaches. First, structure the curriculum with a simple format composed by: (i) a need/situation analysis to characterise the city and region level comprising the city and region as such, and the actors of the CRFS globally, implemented via a questionnaire supported by a Google Form; (ii) a simplified description of ULO (eleven in total), gathering a particular framework composed by a set of resources and sources of learning, supported by a training session learning sequence outlined in a specific template, labelled “Template Training Module TS-CBP Cities2030”), and; (iii) an assessment questionnaire supported by a Google Form. That way, each end-user actually co-create

(e.g., together with all CRFS actors), and implement a tailored TS-CBP which is expected to answer to real place-based needs meeting accurately the awareness level of local communities when considering FOOD2030. Practically, the candidate (current development) and potential (future development) end-users may as well further the structure of the curriculum with a tailored approach and an even more finetuned structure to ensure the training framework answers the need/situation analysis as accurately as possible. The figure below shows the TS-CBP suggested approach to structure the training session, following a broad and flexible approach, after the implementation of the need/situation analysis that will assist place-based prioritisations.

Figure 2.2 – Cities2030's suggested curriculum design approach



2.3 Socio-ecology

Cities2030 is a citizen-driven initiative, and therefore promotes and ensures a solid and extensive citizen engagement, globally led by the cities via commonly practiced channels (e.g., public information boards, local Media, etc.). The project develops a framework for inclusiveness and diversity in societal engagement under the header of food-related ethics, gender balance and equality, and Responsible Research and Innovation (RRI). Citizens are engaged and involved in all pertinent activities for the development of the project anticipated outcomes. In broad terms, one of the main targeted audiences incorporates unorganized public globally, as illustrated in figure 2.4 (next). The unorganized public is subject to information campaigns and educational measures per the programmed activities such as the present capacity building programme, system thinking sessions, etc., considering the project working groups developing under the perspective of the ten focus areas (see figure 3.1a, chapter 3.1), to promote more dialogic procedures. When activating the unorganized public, a balanced representation of principles, education and cultural background is ensured via distributed socio-

demographic diversity. In formal engagement activities and processes partners practise a layered random selection strategy to account for gender, seniority, occupation, education and geographical diversity.

Cities2030 precises the definition of CRFS and integrate the concept of Simplified Socio-Ecological System (SIMSES). This approach is labelled in the Pan-EU-AC scene as *"simplified socio-ecological systems are systems where the number of socio-economic activities, governance levels and range of ecosystems diversity are such that they allow for the experiment to be conducted within the duration of a project and the range of funding available."*²¹

SIMSES approaches as a framework fosters and supports transdisciplinary awareness and knowledge augmentation considering complex challenges, and a vast series of studies have practiced this ecosystem-enhancing SSH approach to tackle the complexity of food systems and provide pathways for transformation.²²

This SSH-driven social ecological model situates individual considerations such as experience, expertise, tastiness (palatability), to name but these few, into environmental contexts, which here is often labelled as "food environment", integrating societal (community) and cultural patterns and principles.

Cities2030 learning framework proposes to explore a new "food paradigm" via building capacities (empowerment) in the actors of food supply and value chains, shifting from the current conventional and inaccurate approach to food systems e.g., CRFS²³, though its original concept has been improved via more integration of environment and socio-economics factors, are 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).²⁴

Cities2030 learning and training curriculum propose to interlink and integrate developed solutions in identified CRFS and explore CRFE considering novel EU-driven vocabulary/narrative e.g., "Food, Bioeconomy, Natural Resources, Agriculture and Environment"²⁵. "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 more effectively to the transition 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"*.²⁶ "Environment" liaise 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"*.²⁷ Cities2030 proposes citizens and communities must be at the core of the project learning and training curriculum.

The SIMSES approach is embodied by the Quintuple Helix Model.²⁸

²¹ [Topic: HORIZON-CL6-2021-BIODIV-01-10](#), Horizon Europe Framework Programme (HORIZON), June 2021

²² [The social-ecological system concept](#), Pérez-Soba M. et al. DG AGRI Workshop, December 2016

²³ [Food Systems](#), the Food and Agriculture Organization of the United Nations (FAO), January 2022

²⁴ [Food environments & EU food policy](#), the EU Food Policy Coalition, September 2021

²⁵ [Horizon Europe Work Programme 9](#), the EU Horizon Europe Programme, December 2021

²⁶ [Topic HORIZON-CL6-2022-FARM2FORK-01-07](#), Horizon Europe Framework Programme (HORIZON), October 2021

²⁷ [Nutrition and food systems](#), report, High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, June 2017

²⁸ [Towards an Emerging Unified Theory of Helix Architectures \(EUTOHA\)](#), report, High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, June 2017

2.4 Target groups

The figure 2.4 (next page) shows the project's key identified audiences organised in 5 main group, some divided in up to 3 sub-groups. The TS-CBP is co-created by all these CRFS actors, for all these CRFS actors, *stricto sensu*.

Figure 2.4 – Cities2030's target group distribution

Cities and regions Policy-makers who are key actors of the policy arena	Businesses Industry, SMI, SME, smallholders, microenterprises	Civil society CSO, CBO who are key influencers and field actors	General public Citizens (consumers) who are direct beneficiaries of HSNC
Policy structures Statutory bodies, political parties, Think Tank, etc.	Business structures Associations, federation, chambers, syndicates, etc.	Scientific bodies Universities, research bodies, local networks and platforms	Media Specialised Media, Social Media, digital and printed press
Law practitioners Experts regulatory frameworks and compliance regimes	Financial and markets Financial intermediaries and markets, banks, equity, etc.	Expert bodies Pan-EU and international bodies (IPES Food, ICLEI, etc.)	The EC and the UN EC and UN services, local and regional statutory bodies

Cities and regions, policy structures, and law practitioners – They are to be understood as regulating and facilitating bodies of the food systems, e.g., governments bodies (sometimes they even participate in food production, processing, trade and retail). However, they are mainly regulatory bodies who exercise a structured influence on food systems, via financial instruments, legislation and regulations, but also education; and support for innovation.

Businesses, business structures, financial and markets bodies – They are representative of the production sector²⁹, 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. Businesses also encompasses all actors of the product and services other than food as such e.g., equipment and machinery, fertilisers, miscellaneous services related to the production, transport, management, etc. of food. Business structures are understood as social partners, chambers and similar. Markets bodies are understood as providers of miscellaneous services such as businesses and market intelligence reports (PwC, Accenture, Deloitte, etc.). This list may be updated and enhanced.

Civil society – They are representative of the structured not for profit dimension of citizens, private or public bodies e.g., public or private foundations, associations, social enterprises, cooperatives, and may sometimes also correspond with other audiences referred in different sections.

Scientific bodies – They are representative of the research and innovation action areas, from food design to analytical, social science and humanities, education and training, and Media as well (journals, etc.).

Expert bodies – They are globally represented by structures active in the CRFS arena, and more globally, food systems, e.g., (non-exhaustive) the International Panel of Experts on Sustainable Food Systems (IPES-

²⁹ [Actors of the food chain](#), European Environment Agency, INF-81-en Published 18 Oct 2017

Food), an independent panel of experts, the Local Governments for Sustainability (ICLEI) an international organization of governments (local, regional, national), the Economist Intelligence Unit (EIU) with the Barilla Center for Food and Nutrition, an initiative from the private sector, Eurocities and, also, Eurocities, C40 Cities, the Nordic Food Policy Lab, IFOAM, the Soil Association, EPI-Agri, RUAF, Slow Food Europe, Sustainable Food Cities, etc.

General public – They are representative of the non-structured public and may be approached by a variety of media including the printed and digital press, non-structured public forums and platforms and groups, specially via Social Media such as Facebook, Instagram or YouTube.

Media (printed and digital press) – They are representative of non-structured public e.g., general public press (newspapers, magazines), and of specific public audiences as well, e.g., parents, food and beverage, culinology, healthcare, nutrition, etc. Also, scientific community (journals, specialised magazines, etc.) or any other type of specific community of practice from CRFS related sectors such as agriculture, horticulture, fisheries, related trades, etc.

EC and UN services – They are representative of EC and UN agencies such as EFSA, FAO, the WHO, EU-funded structures such as EIT Climate KIC and EIT Food, etc.

3. LEARNING FRAMEWORK

3.1 Key thematic

Cities2030 TS-CBP guidelines develops per the project framework, which is defined in the chapter 1 of the project's description, and more specially per the CRFS model proposed by the FAO, which identifies 10 central thematic e.g., focus areas, as shown in figure 3.1a (below). The project CRFS Labs supports the development and implementation of the TS-CBP, see more details in chapter 4.2.4.

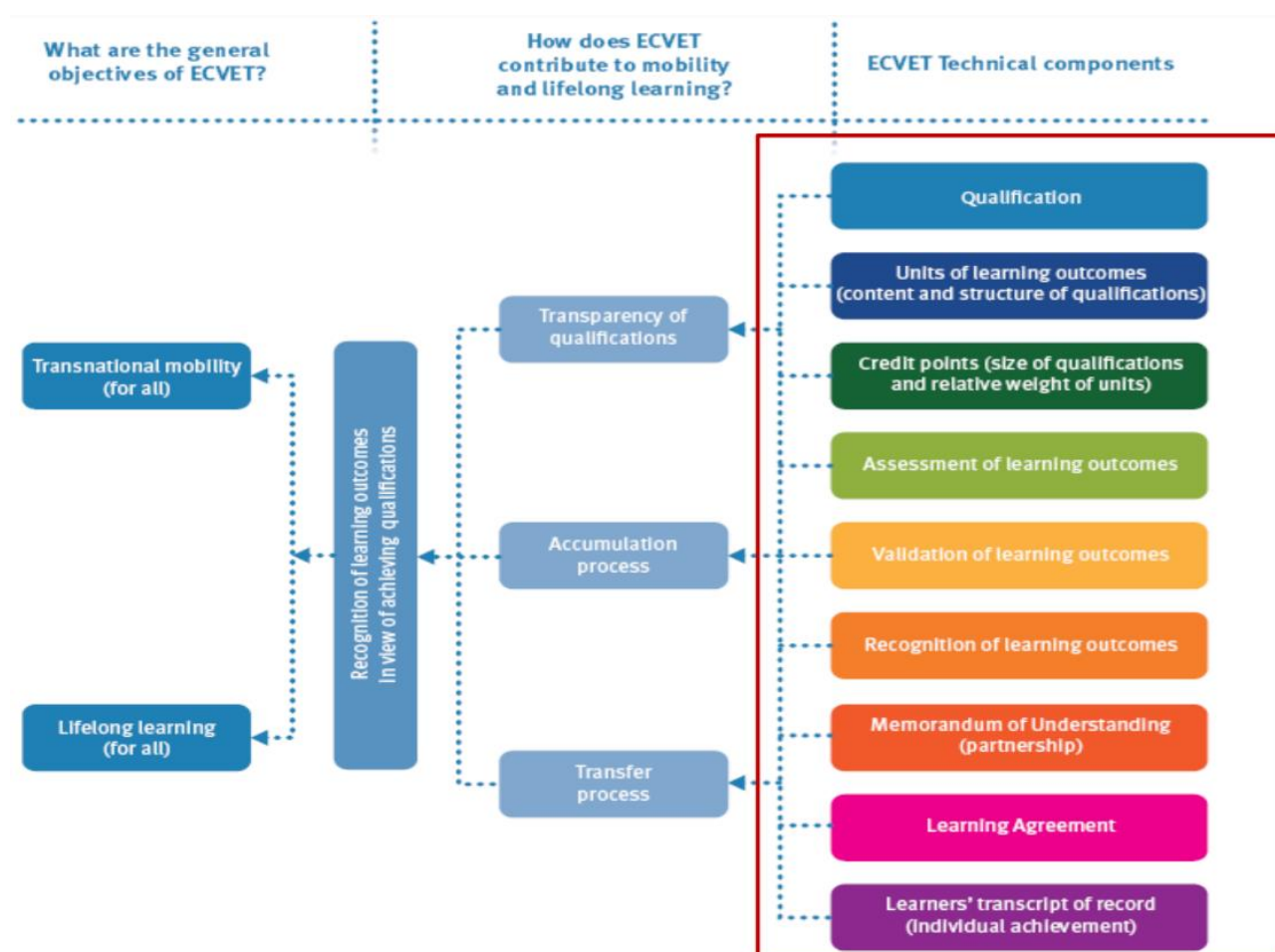
Figure 3.1a – Cities2030's ten key focus areas³⁰



³⁰ [City Region Food Systems Programme](#), Food and Agriculture Organisation of the UN, 2017

Cities2030 proposes to structure these central thematic e.g., focus areas, in learning outcomes per the ECVET approach, yet safeguarding a non-formal setting which meet the vast majority of the project targeted audiences when considering raising-awareness on the challenges of food systems and empowering the actors of these food systems for participative studies and co-creation processes. ECVET is the European Credit system for Vocational Education and Training, a tool that supports lifelong learning and flexibility in learning pathways, including EU Mobility.³¹ It relies on a series of common goals, principles and technical components that foster transparency and comparability in VET. The most important aspect is the focus on learning outcomes to show what a learner knows, understands and is able to do upon completion of a learning process. Thanks to ECVET it is easier for people to get validation and recognition of work-related skills and knowledge acquired in different systems and countries – so that they can count towards vocational qualifications. Cities2030 proposes to practice a certain number of instruments from the ECVET framework to facilitate and promote food systems science education for the project target groups, and specially children and youth, while respecting national competences and authorities in the area of education and training. The figure 3.1b (below) shows the ECVET framework.³²

Figure 3.1b – ECVET approach via learning outcomes



³¹ [The European credit system for vocational education and training \(ECVET\)](#), the European Parliament and the Council of the EU, 2009

³² [Introduction to ECVET](#), 2012-2013 Malta - National Team of ECVET experts, 2013

Cities2030 proposes to practice the model of ULO, assessment of learning outcomes, the Memorandum of Understanding between the parties engaged in the process, the learning agreements and a system for learners' transcripts of record via open badges. The project's learning platforms (CRFS Labs and miscellaneous activities) allows users to earn unique digital merchandise (badges) based on their activity. WP-3 promotes a short self-assessment checklist on the readiness of the project participants e.g., partners and the members of the CRFS Alliance to start the co-creation process of the TS-CBP at local level, and also to promote transnational co-creation simultaneously if pertinent (for instance if expertise is needed).

3.2 Open access

Likely all instruments developed in the project, the TS-CBP is available via an open access and users will be able to access information under an open license with no-fee access, use and reworking of contents, and redeployment by third parties without limited restrictions. Embracing the idea of "Commodification of Knowledge"³³ (open source and free access principles), the Cities2030 results will be offered freely and openly for all agents of the CRFS including educators, students, and self-learners as well as any interested parties, to use and reuse for teaching, learning, and research. The project outputs will be freely accessible abiding an Open Science format through digital hubs of Open Educational Resources such as: OERcommons³⁴ and a series of identified platforms as well, for example LearnCloud³⁵, Coursera³⁶ or FutureLearn.³⁷

3.3 Tiers deployment

The guidelines provide a structured overview of necessary learning outcomes to build capacities in the project participants according to 3 anticipated levels (or tiers) as shown in figure 3.3: the first tier represents the consortium, i.e. the participating partners; the second tier represents local food environments and more specifically CRFS around the project partners' cities; the third tier represents the anticipated follower cities, who will implement and further develop the project's findings and legacy.

Figure 3.3 – Cities2030's TS-CBP tiers setting



³³ [The "commodification" of knowledge in the global information society](#), 2002

³⁴ [OERcommons](#), 2019

³⁵ [LearnCloud](#), 2013

³⁶ [Coursera](#), 2012

³⁷ [FutureLearn](#), 2012

Tier 1 – Building capacity in Cities2030's partner organisations.

Activities developed in WP-2, WP-3, and to some extent WP-9, aim at gathering and categorizing data and insight on food chain systems integrating urban and peri-urban realities as perceived by local and regional actors of the food system arena. Evidence-based knowledge specific to local and regional CRFS from the EU sphere is assembled to implement benchmark processes and deliver a structured and actionable knowledge repository. This intelligence is the core material that will be used, updated and labelled (taxonomy) to generate Cities2030 working instruments that will be implemented to assist deliver solutions for the production of sustainable CRFS production.

The data is structured in ten key thematic by dedicated working groups (see Fig. 1.1b), which are defined per the FAO approach. Six categories reflects the supply chain as such (e.g., From production to waste), and four on correlated key arenas. WP3 builds the project concepts and aim at engaging the project partners and the actors of CRFS, to co-create Cities2030's vision on what is a sustainable CRFS, so that cities may integrate this model in their development programmes towards the city overall sustainability and resilience agenda.

To that end, Cities2030 synergies action plan outlines a framework (objectives, resources and calendar) especially created to maximize all possible opportunities for the project effective impact, e.g., on the most comprehensive spheres e.g. academia (research, education), businesses (innovation, employment, clusters, etc.), civil society (community-based and family-based developments), the schooling sphere, sport and wellbeing, social affairs and government action, and last but not least ICT (possibly incorporating the IoT).

Via WP-3, Cities2030 generates a digital set of actionable knowledge (compendium/vademecum, community of practice, networks, labs, white papers, policy briefs, blueprints, methodologies, action plan) incorporating trends and megatrends on CRFS technology and social innovation development and future emerging technologies outlook, innovation action frameworks which will be validated and/or tested through piloting activities under WP-4 and WP-5, and WP-6 as well: digital skills and "learning by doing" e.g. By exploring and collecting data for THE Single Click CRFS Platform (S2CP). WP-3's intelligence, applied knowledge, data gathering and benchmarks at city-region level creates awareness and facilitate building practical competences on how to gather data, scope the CRFS in a local context and characterise potentials.

WP-3 creates preconditions for system thinking activities to take place in both CRFS Policy Labs (CRFS-PL) and CRFS Living Labs (CRFS-LL) which aim at enhancing foresight, and at consolidating development scenario analysis on food systems, e.g., future-proofing sustainable and resilient food systems. WP-3 implements the participatory (multi-agents) design and production of the anticipated CRFS Labs. WP-3 structures ten (10) working groups (see figure 2.1a), with a solid management framework supported by the project's 'CRFS Alliance'. The working groups tackle key thematic of the food system arena and corresponding operations, within result-oriented workshops activities to compile stakeholder requirements elicitation and deliver pathways towards sustainable CRFS developments, building upon key findings provided by the aforementioned activities (global collection of data). The anticipated system thinking framework is constructed with a combination of evidence-based methodologies created and still under full practice in different spheres, including under developing H2020 projects.

WP-4 and WP-5 build and change active knowledge to set the project's vision and create a pathway for tangible steps. The tasks T4.1 and T5.1. facilitate learning the foundations of the city's potential considering its CRFS sustainable logic. Tier 1 mobilises and structures the CRFS actor in an ecosystem to engage them in



the project co-creative processes. In Tier 1 actors are empowered to be the facilitating force of change and capacity building throughout the city's local ecosystem.

This is done through the active involvement of all CRFS actors in WP-3 tasks and through the support to set up and run the CRFS Labs, and through specified resources and available empowerment processes and mentoring activities. Tier 1 is characterised by knowledge exchange and the co-production of the TS-CBP to be practiced in the CRFS Labs.

Tier 2 – Building capacity in the local ecosystems around Cities2030 partners.

Tiers 2 develops simultaneously within WP-4 and WP-5 to build capacity in the actors of the CRFS around the project partners considering the value chains as such, citizens, institutions, politicians, local government, and the many actors indirectly connected to the CRFS such as the Media. WP-5 ensures an adequate activation of all involved participants from the food systems and ecosystems, building capacities to facilitate an efficient co-creation process.

To that end WP-5 substantially leverage learnings from the MUFPP+ securing synergies and correspondence with key findings. WP-5 implements co-creation innovation cycles within the CRFS Living Labs, to design, pilot in real scale, validate and deploy sustainable CRFS innovation framework which meet the EU FOOD2030 and UN-SDG11 policy framework, strategies, agenda, and funding scheme programmes.

WP-5 explores policy-framed and technology-based scenarios to build competences at city level, and deploy policies at regional level towards compliance with the aforementioned policy framework. Likely WP-1 to WP-6, WP-5 foster synergies with comparable developments. All in all, WP-5 generates an overarching development paradigm driven by resilience, focusing on re-framing the CRFS innovation panorama within the methodological framework of city resilience, up-taking from the MUFPP+. WP-5 implement training activities to equip participants for the development of innovation frameworks co-creation processes, based on 10 identified thematic (see Fig. 1.1b), and understood as Learning Outcomes under the present learning process. Two (2) onsite events with 30 participants takes place completed with 5 online events and supported by the 'CRFS Alliance' where learning material is made available and fully accessible.

In this tiers practitioners implement the project's system thinking methodology CRFS Logical Framework within 5 on site and 5 online events, a solid and result-oriented instrument to facilitate co-creation mechanisms in 10 identified thematic and corresponding working groups. The local partnerships are first and foremost responsible to engage and create this capacity locally, a process which is significantly dependent on the CRFS Labs' ability to mobilise and engage the CRFS actors. WP-5 prepare the participants to generate multi actors' collaborative responses on the challenge and innovate successfully, provide knowledge, build capacity and bond cooperation relationships, to facilitate participatory innovation procedures, to explore and develop improvements, best practices and innovations on CRFS value chain.

Tier 3 – Building capacity in follower cities and other stakeholders.

Tiers 3 proposes to liaise follower cities and stakeholders not yet engaged in the project Cities2030, for example cities not located in the area of influence of the partners and their network, national services at system level (chambers, ministries, etc.). Tiers 3 builds the expected project legacy beyond the project primary targeted audiences and to this end a series of accompanying measures have been projected and are key elements of the project exploitation plan.

The plan details post-project developments and is supported by the same resources planned for dissemination, developing complementary activities. The key drivers for the successful deployment of the TS-CBP are motivated

and committed partners who are assigned to lead specific post-project developments, a clear and shared vision (plan), materialised by an agreement between partners (2030).

The project TS-CBP develops beyond 2024 with the adequate resources. Partners' resources are identified and assigned to the tasks with cost advantages (economies of scale) that they obtain through synergies with on-going projects and activities.

The Internet-based platforms reaches a users' critical mass generated by all the activities during the project duration to afford self-sustainability beyond the project lifetime. All-in-all Tiers 3 ensures the project legacy and proven concepts, blueprints, the sustained and organically growing resources such as the project's provisions repository and the CRFS Alliance. This is done via a vast panoply of activities, under T4.3 such as facilitated outreach programme (inviting, nudging, showing our blueprints and a facilitated access to the project's resources), through structured synergies as well.

3.4 Learning framework

The cognitive domain list has been the primary focus of most traditional education and is frequently used to structure curriculum learning objectives, assessments and activities. Cities2030 proposes to develop with a well-documented and commonly practiced approach which is to practice an enhanced Benjamin Bloom's psychological and pedagogical model taxonomy. The framework elaborated by Bloom and his colleagues structured a learning cycle composed of six major categories: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation.³⁸

These categories have been continuously enhanced toward a model commonly practiced today in the education and training sphere, illustrated by figure 3.4 (below), for the production of learning environment, and Cities2030 TS-CBP proposes to adjust the model and its structure to co-create a non-formal and informal learning system. This is done with a simplified training module design, which is introduced in chapter 4, and further developed in chapter 5.

Figure 3.4 – Cities2030's education cycle approach



³⁸ [Taxonomy of educational objectives: the classification of educational goals](#), Bloom et al., 1956

According Muhibbin Shah³⁹ a learning achievement is the "level of student success in learning the subject matter in schools that are expressed in the form of scores obtained from the results of tests on a particular subject matter". By encouraging their achievement, learners can build self-confidence and enhance motivation. Cities2030 activities capacity building activities also aim at augmenting knowledge on how to improve learners' achievement to contribute to increasing learners' confidence and self-esteem, improving studying and learning to learn competences, providing learners the instruments needed to succeed in critical learning paths.⁴⁰

Cities2030 proposes to study about open (digital) badges (see also chapter 2.1), which are a standard in the education and training sphere to recognise and verify learning and achievements. They are digital "micro-credentials" that may represent identity, interests, competences and achievements across the ETS. Cities2030 CRFS badges are non-formal and informal micro-credential confirming a participant has conducted certain tasks, achievements, conducted certain works or participated in certain workshops.

Cities2030 proposes to liaise with the EU ERASMUS+ programme ETS considering practices with digital open badges and documented in a vast panoply of initiatives such as project ERASMUS+ Virtual Exchange Badges, and more specially, practice the ERASMUS+ virtual exchange competences framework⁴¹, in addition to non-digital materials, and in all matters whilst respecting national competences in the area of education. Cities2030 liaise with the European Badge Alliance⁴² and the project 'European Open Badges Platform'⁴³, funded under the ERASMUS+ Programme to develop its system.

3.5 Calendar

The figure 3.5 (below) shows the project setting, scale and alignment considering the perspective of the project activities e.g., CRFS Labs, pilots, and project activities more globally.

Figure 3.5 – Cities2030's TS-CBP calendar of development



³⁹ [Implementation of scientific approach \(...\) learning achievement](#), Basiroh Z, : Journal Kajian Pendidikan Islam, Vol. 9, No. 2, 2017

⁴⁰ [Raising the Achievement of all Learners in Inclusive Education](#), European Agency for Special Needs and Inclusive Education, 2021

⁴¹ [ERASMUS+ Virtual Exchange Competence Framework](#), EU, 2021

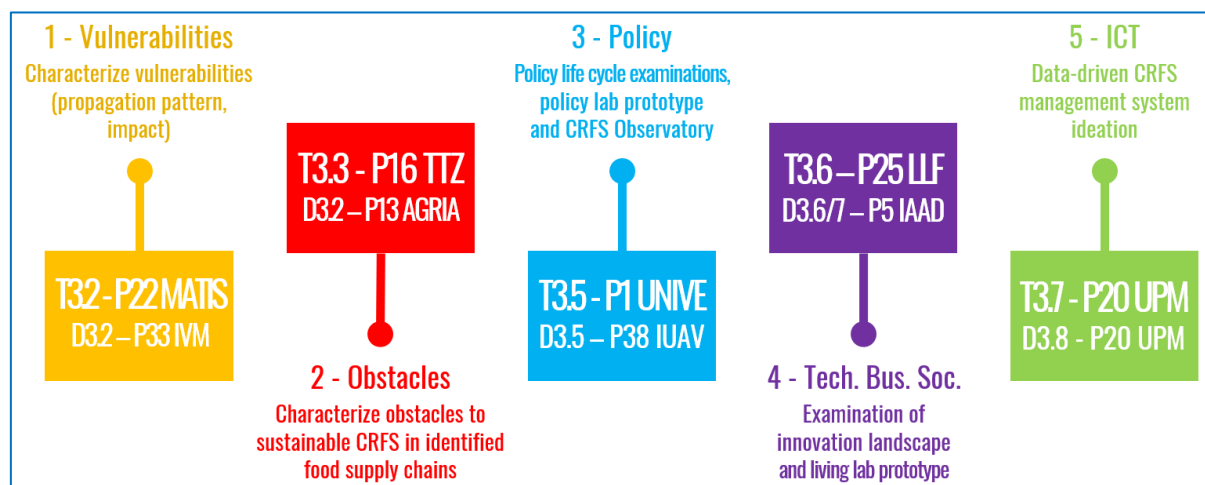
⁴² [European Badge Alliance](#), 2021

⁴³ [Project EU-OBP: European Open Badges Platform](#), project funded under the ERASMUS+ Programme of the EU (ref. 2019-1-RO01-KA204-063793), 2021

3.6 Cities2030's action plan

The figure 3.6 (below) shows the key activities providing insights for the production of recommendations to be structured in the TS-CBP guidelines.

Figure 3.6 – Source of insights for the guidelines



3.7 Learning environments

The figure 3.7 (below) shows the multi-spheres learning environment settings and targeted audiences proposed by the project TS-CBP, always considering the multi actor panorama.

Figure 3.7a – Cities2030's TS-CBP multi-spheres learning environment setting



The TS-CBP proposes to develop in all the ETS dimensions, from formal to non-formal and informal settings, and to cover two distinct dimensions: a) understand the significant needs and gaps regarding ETS on the thematic of food systems and deliver structured pathways to address these needs; and b) integrate partners' realities as a basis for the learning environment (e.g., network of partners at local and regional level, current activities related to food systems, strategic plan for 2022-2024, etc.), and, to some extent, those realities which are connected to the country's specific landscape (see chapter 2.9). Here, the project proposes to co-create 'Cities2030 Flagship Interactive Innovation Experiments' which are innovation frameworks identified via WP-3 activities and selected by WP-4, WP-5 and WP-6 to be developed further via applying the Extended Innovation Pattern. The dimension "society" can actually be structured to better channel the unorganised public, via the schooling sphere, and the "CSO" via sport associations. Both these dimensions facilitate reaching out children and Youth. In addition, this approach also provides an excellent platform to outreach the parental sphere.

3.8 Drivers

The TS-CBP guidelines generates a set of recommendations to build a TS-CBP aiming at implementing training activities to equip participants for the development of innovation co-creation processes, based on 10 identified thematic, understood as Learning Outcomes, and integrate eight (8) functional drivers to ensure the adequation of the learning environment with the local and regional realities of candidates CRFS:

- the realities of local CRFS environments;
- the need to equip facilitators whose role is to enable and accelerate the practice of the TS-CBP;
- a digital repository (platform) possibly hosted by the project website where the information is curated;
- a community-based scalability plan to facilitate deployment from a small scale local level to wider urban environments;
- structure a vast panoply of source of learning from the citizen arena to the policy sphere (public bodies);
- proposes a series of resources which span from the project's CRFS Labs to the partners' resources and their networks as well (facilities, educators, etc.);
- ensure the potential of innovation of all components of the TS-CBP via a continuous flow of information vital to the provision update, here, considering the technology and social dimension, the project Observatory plays a significant role;
- actionable outputs (documents, videos, papers, tutorials, etc.) which are composed by all materials generated by the project activities, not strictly its deliverables;
- practice digitally enhanced approaches, methodologies and mechanisms.

Cities2030 raises the challenge and integrate a panoply of driving forces responsible and contributing to changes in the arrangement of a learning process far beyond the four key elements determinant to the learning process: the educator, the learner, the learning content and the learning materials.

The figure 3.8 (below) shows the drivers identified by the project for the development of the present guidelines and TS-CBP.

Figure 3.8 – TS-CBP drivers



Cities2030 also proposes a set of drivers related to the overall framework of the TS-CBP and of the project as a whole as well. These drivers are outlined in the features below.

3.8.1 Multi actors approach

In line with the FOOD2030 Research and innovation policy, and more recently to generate food systems more aligned with the European Green Deal priorities and the farm to fork strategy for a fair healthy and environmentally friendly food system, as well as with the EU's Climate ambition for 2030 and 2050, Cities2030 involves the mobilisation of society and all actors to transform food systems for co-benefits considering all four pillars of the FOOD2030 Policy e.g., nutrition for sustainable and healthy diets, food systems supporting a healthy planet, circularity and resource efficiency and innovation and empowering communities. To that end, a multi actor approach (MMA) is practiced at every stage of the production process of the TS-CBP, from design to implementation. Each and every functionalities of the food systems part of Cities2030 concept are represented in this participative process as illustrated in Figure 2.1a (page 10). The MMA strategy is promoted by task T3.1 and the result is materialised by Cities2030's CRFS Alliance, a CRFS community of practice hosted and mapped in the platform DIH AGRIFOOD⁴⁴ and animated in Cities2030's Forum.⁴⁵

3.8.2 Transdisciplinary framework

Cities2030 practices participative approaches to food system ideation which dissipates the frontiers between the established disciplines and organizes co-creation and co-production mechanisms around the food system thematic in the context of real-world problems or themes.

"The 19th century was a century of empires, 20th century was a century of nation states and the 21st century will be a century of cities." says former Denver Mayor W. Webb. 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 week⁴⁶. However, FSE 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 uncertainty⁴⁷ incorporating social economy (poverty, accessibility, equity), security, technology (innovation), nutrition (health and welfare), local and traditional cuisine preservation (culture at large), rural desertification vs urbanisation, employment, circularity and sustainability, climate action (decarbonisation, emissions, bio economy, blue growth), and more. CRFS are proteiform orders and sui generis making it a complex task to integrate research concepts and innovation actions⁴⁸ to support transition toward circularity and sustainability.

Cities2030 assembles both at consortium and network levels a remarkable series of scientists, engineers, technicians, entrepreneurs, autodidacts, and ultimately active citizens. Cities2030, and consequently the TS-CBP integrates the opportunities and challenges of a transdisciplinary setting on food system ideation in transnational large scale innovation action settings.

⁴⁴ [Agrifood Cooperation Platform](#), Digital Innovation Hub for Agriculture and Food Production (DIH AGRIFOOD), January 2022

⁴⁵ [Cities2030 Community](#), project Cities2030 (H2020 ID 101000640), January 2022

⁴⁶ [This is what the cities of the future could look like](#), World Economic Forum, January 2019

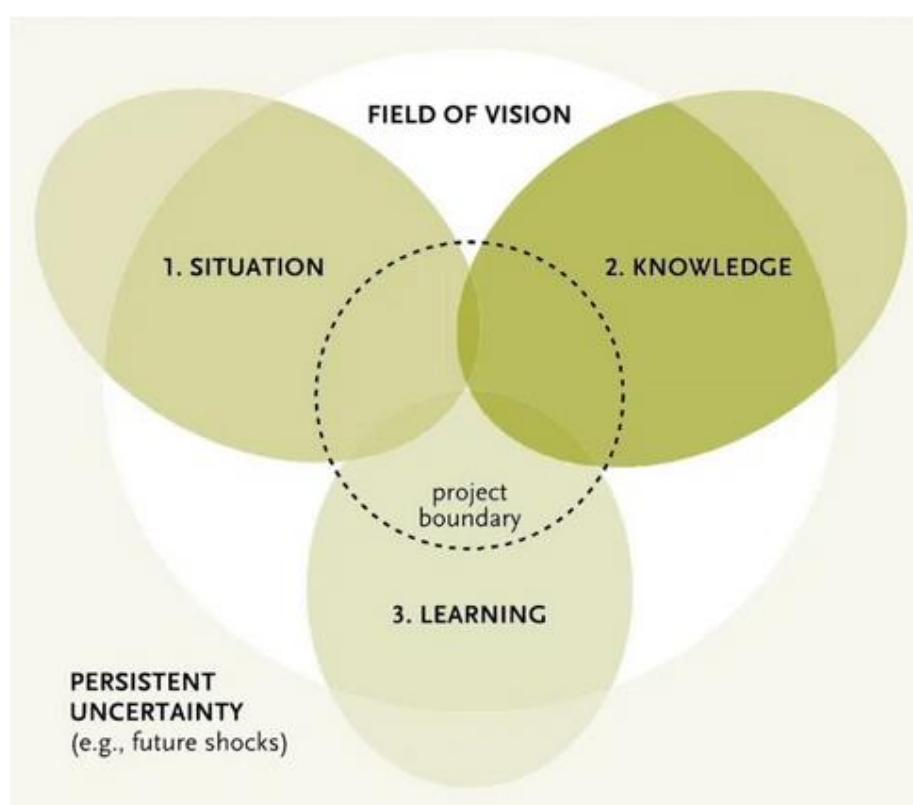
⁴⁷ https://foodsource.org.uk/sites/default/files/chapters/pdfs/foodsource_chapter_1.pdf

⁴⁸ <https://www.mdpi.com/2071-1050/11/1/171/pdf>

Cities2030, and consequently the TS-CBP, practices a pioneering transdisciplinary innovation action framework. The figure 3.8.2 (below) shows the conceptual map of the three spaces providing the project transdisciplinary system thinking landscape towards co-creation processes which are: the situation e.g., the current context, the evidence, vital for accurate innovation processes, and the learning process providing conditions for multi actor and transdisciplinary co-creation. Cities2030 develops within the interconnected spaces and upon the field of vision of food systems (short term scope) and projects scenarios towards mitigating future shocks part of persistent uncertainties.

The TS-CBP transdisciplinary approach is practiced and embedded within a field of vision, which is limited by the experiences, proficiencies and perspectives of the actors engaged in the project activities. Further than the field of vision is the undetermined, which can also be understood as forthcoming persistent uncertainty.⁴⁹

Figure 3.8.2a – Cities2030 transdisciplinary innovation action framework



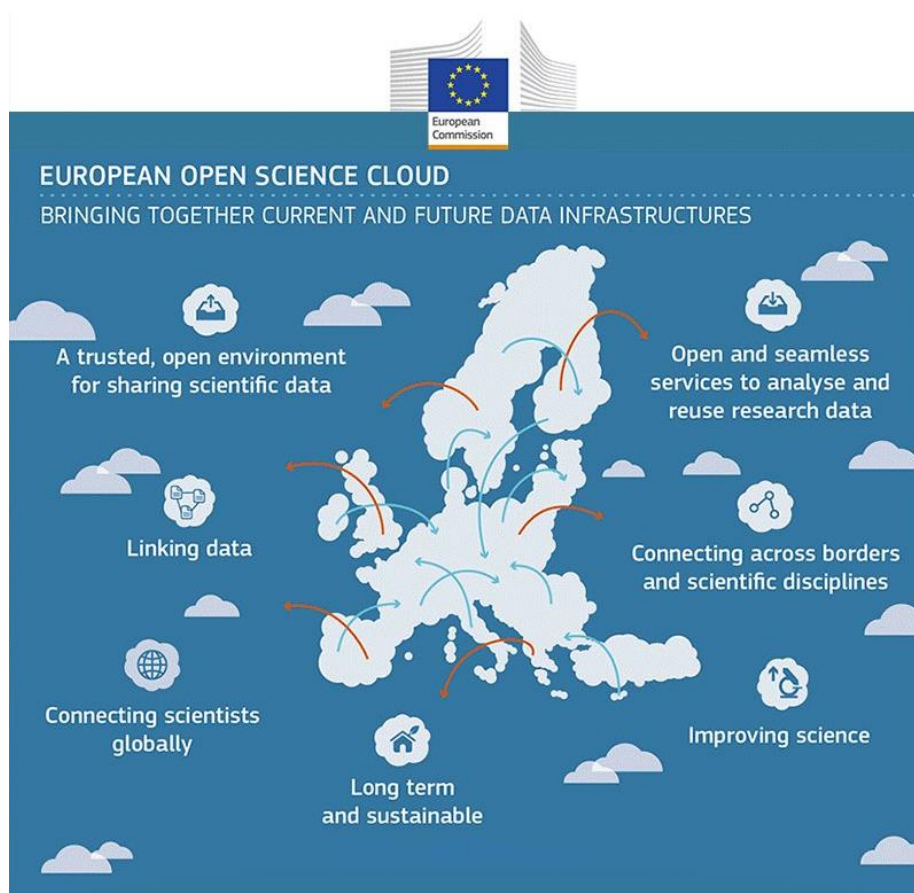
3.8.3 Open sciences practices

Cities2030 evolves the current development of CRFS-PL and CRFS-LL via pioneering concepts and approaches practiced in the CRFS Labs, and connect them to facilitate participative innovation, to engage, connect and empower all actors of food systems, and expand the realisation of smart, connected, transparent cities'-scale pilots. The TS-CBP leverage the local activities and development of its working groups with the regional, trans-regional, national, trans-border, EU and pan-EU via the facilitators recruited and equipped in WP-3. Especially, Cities2030, thus the TS-CBP, liaise with a vast number of EU services, among them the European Research and Innovation Action arena (EURIA) e.g., the Commission's science and knowledge service Joint Research Centre

⁴⁹ [The need for capacity building to accelerate food system transformation](#), Den Boer A. et al. in *Current Opinion in Food Science*, December 2021

(JRC) and the European Open Science Cloud (EOSC), to name but these few. The figure 3.8.3 (below) shows the framework of the EOSC.

Figure 3.8.3 – Illustration of the EOSC



3.8.4 FAIR data management

Cities2030 participates in an open-access data pilot. The project generates and maintain a Data-Driven Digital Management Platform (DDDMP) and a Data Management Plan (DMP), which is managed by partners P?, P? Etc. **MISSING-PARTNERS-ASSIGNMENTS**. The plan is based on the principles of making data findable, accessible, interoperable and re-usable (FAIR) and includes information on the data standards that will be applied by the project, how the data will be exploited and how it will be curated and preserved. The project data is published in the open access section of the project website and disseminated to all audiences with tailored strategies, especially by means of fostering local and global open science communities e.g., openaire.eu, etc. Cities2030 leverages key learnings, recommendations and tools delivered by a series of projects e.g., 'FAIRsFAIR' (H2020 ID: 831558), especially the data competences and research culture to build Cities2030 measures and solutions. Data collected include results from the empirical assessment of end user needs, designs for the algorithms, software components and the integrated platform and the results of testing and validation studies. These are shared with the consortium using a secure data sharing platform 'Lean Agile Data Management Commons' (LeanData) . Due to the significant potential for exploitation of the project results, the DMPF includes provision for embargo of any data that is commercially relevant. Only once exploitation rights are preserved, can the

data be included in open access scientific publications, and stored in the repositories of the publishing partners or public databases. Experimental data is collected in laboratory record books that will be stored once finished. They constitute a proof of ownership in case of conflict and a permanent record of the work done, including experimental details and operating procedures. Entries are sufficiently detailed so that someone else could replicate the procedure. Lab books include raw data or reference to the digital location. Lab records are the basis of scientific publications, which are also published in an open access basis, making accessible the methodologies used that will enable data verification and re-use. This matter also relates with the Open Science approach.

3.8.5 Gender-and inclusion-driven cooperation

Cities2030 is a gender-neutral initiative and practice systemic gendered activities via WP-2⁵⁰.

Women still face an array of barriers to achieving their full potential in a vast number of dimension of our societies, and the EU provides a series of instruments and policies to tackle this setting and contribute to an enhanced and recognise role of women in research and innovation actions. Cities2030 contributes to boosting women-led innovation in food system via a vast number of instruments e.g., CRFS Alliance, CRFS Labs, etc., and among them the TS-CBP. Cities2030 improved knowledge of the specifics of women-led innovation, and WP-4/WP-5' more supportive innovation ecosystems and smart solutions coming from women-led innovations aim at empowering citizens to act for change and get urban communities prepared to achieve the objective of FOOD2030.

Women play a major role in the food economy in the Pan-EU landscape.⁵¹ Established gender inequities have caused to an unquestionably flawed food system. Women have a leading yet not recognised role all across the value chain e.g., as farmers and food producers, traders, instructors, cooks and chefs, hospitality staff and managers, and recognised leaders of world-level food institutions.⁵² In addition, women are considerably more engaged and invested, on a systemic and day-to-day basis, in schooling, healthcare and trade platforms connected to food, a professional and also personal status which are frequently taken for granted, but not recognised,⁵³ thus undoubtedly devalued. In addition, women also face gender stereotypes and bias at every single point in their lifetimes, livelihoods, and as food-related company owners: lower education completion, slower levels of promotion, and considerably poorer access to capital.⁵⁴

Throughout the project, the TS-CBP, provides attention to gender-balanced collaboration, inclusiveness and synergy, ensuring a solid collaboration between farmers, farmers associations, local industry, technology providers, research centres, extension services and policy makers. As part of the innovation actions, dissemination and exploitation of results, The TS-CBP is built via consultations with a host of relevant actors of the CRFS. Among these are women industry experts who work on the Pan-EU level platforms for food system innovation such as Pan-EU businesses and members of EIT Food. Cities2030 improves the situation for women via the TS-CBP, practicing evidence gathered by WP-3. Cities2030 innovation frameworks supported by the TS-CBP together with the Extended Innovation Pattern approach allow subsistence-farming women to save working time (time spent on the field, at the production sites, etc.) creating space for seizing market potential in rural Pan-EU.

Cities2030 measures a vast number of indicators on women's empowerment based on works developed by WP-1, combining existing instruments such as the Pro-WEAI⁵⁵.

⁵⁰ [Methods of sex and gender analysis](#), in *Gendered Innovation*, Stanford University

⁵¹ [Gender equality and women's empowerment in rapidly transforming food systems](#), the EU, April 2021

⁵² [27 inspiring women reshaping the food system](#), Food Tank, March 2021

⁵³ [Women in the food industry](#), McKinsey & Company, November 2017

⁵⁴ [Women food and drink entrepreneurs on how gender impacts access to capital](#), Washington City Paper, August 2019

⁵⁵ [Women's Empowerment in Agriculture Index](#), International Food Policy Research Institute, June 2012

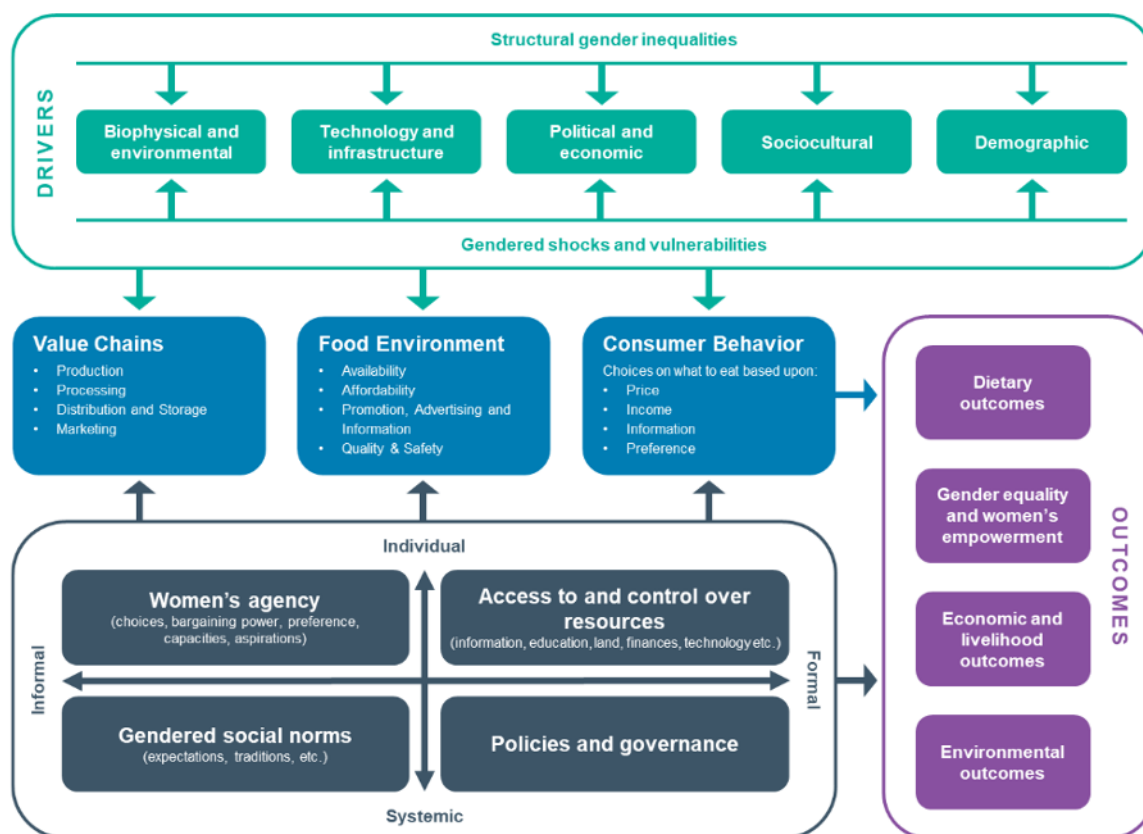
The COVID-19 pandemic has only worsened the current status quo, with a greater number of women than men in the interim or now definitively leaving the labour force, and for a series of causes (lack of childcare, schools stopped, support to sick family member, etc..).⁵⁶ In a recent report, the European Investment Bank states that “considering gender equality and empowering female entrepreneurship could help to accelerate and fortify our recovery.”⁵⁷

According to the European Institute for Gender Equality (e.g., European Commission), “Gender equality has strong, positive impacts on Gross Domestic Product (GDP) per capita which grow over time”⁵⁸ Thus, empowering women’s contribution in the employment market and fostering entrepreneurship could consequently add billions to the Pan-EU economy, which comprises ensuring impetus for training and endorsing women from lesser-pay livelihoods to higher-pay incomes such as C-levels, and increased entrepreneurship.

The TS-CBP explores the dynamics and mechanisms of influence and gender, the vital role of women in forward-moving towards more sustainable food system, the contribution of men in corroborating gender equity, and together co-create pioneering gender equity policy framework for the professionals active in food systems across the Pan-EU landscape. The TS-CBP permanently and inclusively support women’s assertion and their role in the overall food supply chains.

The figure 3.8.5 (below) illustrates a gendered food systems.⁵⁹

Figure 3.8.5 – Illustration of a gendered food systems



⁵⁶ [COVID-19 and its economic impact on women and women's poverty](#), the European Parliament, May 2021

⁵⁷ [New report: funding women entrepreneurs: how to empower growth](#), the European Investment Bank, June 2020

⁵⁸ [Economic case for gender equality in the EU](#), the European Institute for Gender Equality, January 2022

⁵⁹ [A review of evidence on gender equality, women's empowerment, and food systems](#), the EU, January 2022

The provision of the TS-CBP's work plan implements: (i) rethinking concepts and theories on the paternalist nature of the agricultural production and food systems and passing from one generation to another the genetic material⁶⁰; (ii) formulating co-creative trigger questions to observe to what extent food systems are influenced by the gender differences and if, across the targeted food environments, there is discrimination in the activities correlated with food systems; (iii) the analysis of the main factors intersecting with gender in food systems such as geographic location, socioeconomic status, educational background, lifestyle, family structure, social and family roles, child-care driven behaviour (these factors can highlight the way in which the family), viewed as fundamental socio-economic unit) relates to food systems challenges, such as environmental protection, informed consumer decisions, health care, life quality, etc.

Therefore, a constant communication among partners is necessary as it will enable sharing cultural experiences of their own countries. Gender issues are covered in workshops, seminars, both policy and living labs, to contribute to changing the agri-food gender-stereotype image by involving women in the implementation and evaluation of the project's activities. A significant gender balance is present across management, leadership and advisory roles among the external participants of the project. Example areas include usability studies, tool preferences, participatory innovation action, standards and reference models, and target group analyses. Food systems innovation action are designed and programmed to consider the physical, psychological and social characteristics of the gendered user. Gender plays a significant impact in the implementation of the project's development models, considering gender-based acceptance and adoption. Differences related to the effectiveness and usability of the piloted solutions emanating from the gender, social and cultural perspectives are considered.

3.8.6 Responsible Research and Innovation

A recent comprehensive literature review on RRI⁶¹, suggests an academic approach to the definition: *"RRI is an attempt to govern the process of research and innovation with the aim of democratically including, early on, all parties concerned in anticipating and discerning how research and innovation can or may benefit society. 'Anticipating' means that there should be an imaginative effort in trying to see how a piece of research or a product could evolve in the future. 'Discerning' means that one should always apply judgment to see if the future 'imagined' is something desirable and act accordingly."*

Cities2030's innovation action ambition's on RRI is approached in WP-2 via the conceptual framework of Quadruple Helix⁶² which is practical for gathering insight on the roles of citizens and related interlinks in innovation networks, including social sciences and humanities, social innovation and societal engagement. Therefore, the following courses of action are taken under consideration: CRFS beneficiaries, CRFS key players, and academic environment need to realize the responsibilities that lie on their shoulders on matters such as environment impact, transparency of economic and non-economic activities, possible negative effects of research on societal environment concerning alimentation.

The same awareness and responsibility should be embraced by the urban communities on matters such as the rights of rural food suppliers, stimulation of open access behaviour in directing information about food phenomenon and supporting the women's role in the food socioeconomics.

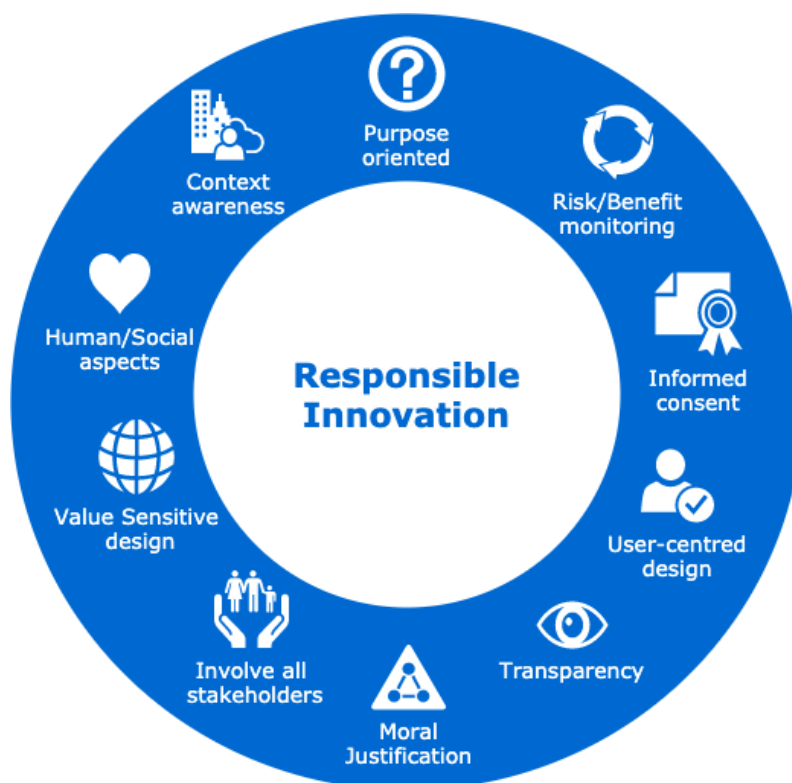
⁶⁰ [Declaration of the Forum for Food Sovereignty](#), Nyéléni, 2017

⁶¹ [Definitions and conceptual dimensions of \(RRI\): a literature review](#), Burget, M. et al. in *Science and Engineering Ethics*, April 2016

⁶² [Defining 'Responsible' in Responsible Research and Innovation](#), Mehari Y. et al. in *Social Innovation in Higher Education*, January 2022

Cities2030 develops more specially on Responsible Innovation (RI), a process which integrates the broader impacts of research and innovation. The figure 3.8.6 (below) illustrates the RI environment and drivers.⁶³

Figure 3.8.6 – Illustration of RI environment and drivers



The practice of creating and deploying pioneering technologies is clouded in uncertainty in the technological, ethical, and social spheres.

For scientists, RI is a practice which aims to stimulate innovation and opportunities for knowledge and innovation that are socially advantageous and carried out in the public benefit. Innovation has the ability to not only generate anticipated perception, expertise and value, but also unexpected outcomes, queries, ethical dilemmas and social changes. Cities2030 proposes to play a significant role in supporting advances to RI that will provide impetus for ongoing reflection about the prospective ethical and societal repercussions of the innovation proposed by the project, and, also, the project's citizen science approach encourages targeted communities to do likewise.

The public expects project Cities2030's consortium to act responsibly, and the project's RI approach creates spaces and processes to explore innovation and its consequences in an open, inclusive and timely way. Cities2030 raises the challenge and goes beyond only considering ethics, public commitment, risk and regulation. Cities2030 promotes the concept that innovation is a mutual accountability, where the actors of the food system, interested and impacted parties, including the unorganised public, all have a valuable role to play.

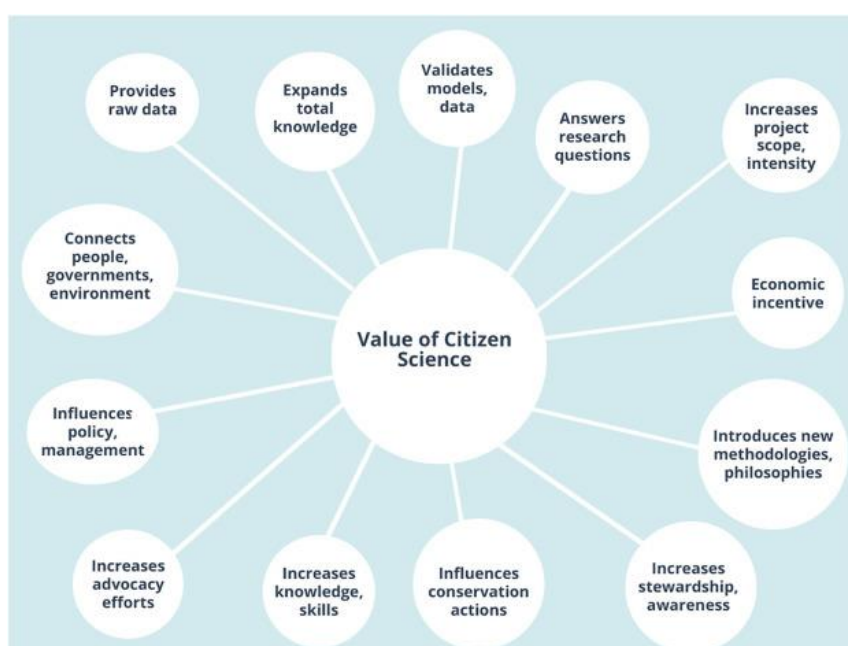
⁶³ [Responsible Research and Innovation](#), Ricardo Chavarriaga, January 2022

For businesses, RI is the thorough understanding of, and activities to focus on, the possible impacts of launching in the marketplace, a novel product, service, practice, system or business model. Along with other factors, businesses overlook at the impact on the innovating enterprise, their customers and suppliers, their shareholders, the broader society and natural environment. Pioneering and innovative solutions are improved when the advantages for society can be achieved and any potential shortcomings prevented.

3.8.7 Citizen Science

What is Citizen Science? There are recognised challenges in its definition.⁶⁴ The figure 3.8.7 (below) illustrates the added value of Citizen Science approaches.⁶⁵

Figure 3.8.7 – Illustration of RI environment and drivers



Well managed food systems are the basis for sustainable agriculture, affecting food production, environmental impact, economic and societal concerns. As such, aligning and improving the functionalities of the actors of food systems is of interest throughout the value chains, however, it is these actors who often carry the greatest responsibilities in the management and enhancement of food systems key features. These actors are required to follow specific regulations and policies globally subject to assessment on a regular basis, although informal evaluations occur in between (from simple assessments to more sophisticated physical and biological analysis). However, this is unlikely to be sufficient to inform decision-making and to observe the results of changes to management practices.

Citizen science, where the actors of the food system are the citizen scientists, could provide the ideal solution to this knowledge gap, by co-creating with a highly engaged community and providing evidence that can be used to educate, design and monitor progress towards key targets of the FOOD2030 policy, and even drive policy innovation frameworks.

⁶⁴ [What Is Citizen Science? The Challenges of Definition](#), Haklay M. et al. in *The Science of Citizen Science*, January 2021

⁶⁵ [Power of the people: A review of citizen science programs for conservation](#), MacPhail V. et al. in *Biological Conservation*, September 2020

A concrete example can be, considering the functionality “production”, that whilst some factors that influence soil health can’t be changed, e.g., soil type, weather, typography, etc., farm management can have a substantial impact on soil health and improve soil yield. As living systems, soils will adapt and change to the conditions that are given to them by climate and human management practices. As such, it’s essential for farmers to be able to monitor and understand the health of their soils.

Cities2030’s identified innovation frameworks (identified in WP-3), may consider (for example), providing farmers the ability to do this through a toolkit of quick and easy to perform tests that provide objective insights into the physical, chemical and biological properties of their soil. These tests are (a) soil texture (physical soil condition, as a proxy for understanding soil structure); (b) soil infiltration (physical soil condition, as a proxy for understanding soil structure); (c) soil colour (as a proxy of soil organic matter content, chemical soil condition); (d) soil earthworm counts (biological soil condition, as a proxy for biodiversity), and; (e) vegetation cover (as a proxy of how well soil is protected).

The data is entered into the online platform created in WP-6, e.g., the Single Click CRFS Platform (S2CP), collating data from all around the rural area, and allowing farmers undertaking tests to follow up their measurements over time and identify changes to and the potential needs of their soils. The platform allows farmers to compare their results with those from other farms, communicate with other farmers, facilitating knowledge exchange and best-practice generation. This is a concrete example bringing rational to the need of a TS-CBP aligned with the food system realities and FOOD2030.

Embedded in the category “social” (see figures 3.1a and 3.1b), the TS-CBP proposes to deliver a series of materials to support citizen science practices throughout the food system considering all its functionalities, from production to inclusion and equity. Cities2030 implements futureproofing activities in identified cities and regions areas and proposes to outline these locations in the concept of simplified socio-ecological systems (SIMSES). Citizen science uses the collective strength of the communities and the public situated in these SIMSES, to identify innovation action questions, collect and analyse data, interpret results, generate new discoveries, and develop technologies and applications – all to understand and address all key features of FOOD2030.

Citizen science fill data gaps, leverages large numbers of people to perform research that other resources may not have been available to pursue, and builds meaningful relationships with communities fostering innovation through co-creative processes and incorporation of new ideas. Citizen science initiatives that support the goals of Cities2030 are identified through a scoping process involving a comprehensive online search, and advertisement in the SIMSES and across citizen science networks. The citizen science initiatives are then be evaluated against a criteria of need co-created with the SIMSES communities and the highest scorers selected for regional funding. The MICS (Measuring the Impacts of Citizen Science) platform may be used in project Cities2030 (synergy) to monitor these citizen science initiatives.⁶⁶ MICS has developed metrics and instruments to evaluate citizen-science impacts across 5 domains: science, society, governance, the economy, and the environment. The MICS platform was developed considering best practices in the co-creation of hands-on citizen science and provides clear recommendations for those involved in citizen science projects, making it the perfect online platform through which to evaluate active citizen science projects as well as providing them with clear directions for improvement.

⁶⁶ [Guiding principles for assessing the impacts of Citizen Science](#), project MICS (H2020 ID: 824711), May 2021

3.9 Countries specifics

The TS-CBP builds upon local and regional initiatives which are then structured to generate the project learning environments and scale per the suggested Tiers. The table 3.9 (below) shows the identified local and regional learning environments upon which Cities2030 builds the TS-CBP.

Table 3.9 – Cities2030 identified learning environments via the CRFS-LL

City/Region	Country	Description	Potential uptake
Arganda	Spain	Advance of digitization of the industry with data brokering for monitoring working conditions and food chain transparency	Production, processing, distribution, markets, consumption, security, livelihood, growth, inclusion, equity
Fethiye	Turkey	Develops especially in the fisheries and also aquaculture sectors to generate sustainable technologies for short food value chains	All ten project's focus areas
Haarlem	Netherlands	Further the current extensive sustainability programme focusing on climate adaptation, energy transition and circular economy	All ten project's focus areas
Iași	Romania	Connecting stakeholders from CRFS for identifying and assessing the particular issues of the urban food system	All ten project's focus areas
Menteşe	Turkey	Develops especially in the fisheries and also aquaculture sectors to generate sustainable technologies for short food value chains	All ten project's focus areas
Muğla	Turkey	Develops especially in the fisheries and also aquaculture sectors to generate sustainable technologies for short food value chains	All ten project's focus areas
Murska Sobota	Slovenia	The Green Point (<i>Zelena točka</i>) CRFS Living Lab acts in the area of Short Food Supply Chain integrating all dimensions of local CRFS	All ten project's focus areas
Pollica	Italy	Via the "Paideia Campus" which develop as an experimental center for "integral ecology", in which the Mediterranean diet is a platform	Consumption, ecosystem services, livelihood, growth, inclusion, equity
Roeselare	Belgium	Co-creation processes to develop, test and further improve new greenhouse horticultural technologies and demonstrate installations	Production, processing, markets, consumption
Vejle	Denmark	Promoted by the Culinary Institute which is an existing platform to connect innovators and stakeholders in food and gastronomy	Consumption, ecosystem services, livelihood, growth, inclusion, equity
Velika Gorica	Croatia	Multidisciplinary, participatory approach in learning, corrective pathways (CRFS lacks), nudging stakeholders to be agents of change	All ten project's focus areas
Vicenza	Italy	Via "the Ortoobook", aim to foster stakeholders cooperation to improve knowledge about paths towards innovation in the CRFS scene	All ten project's focus areas

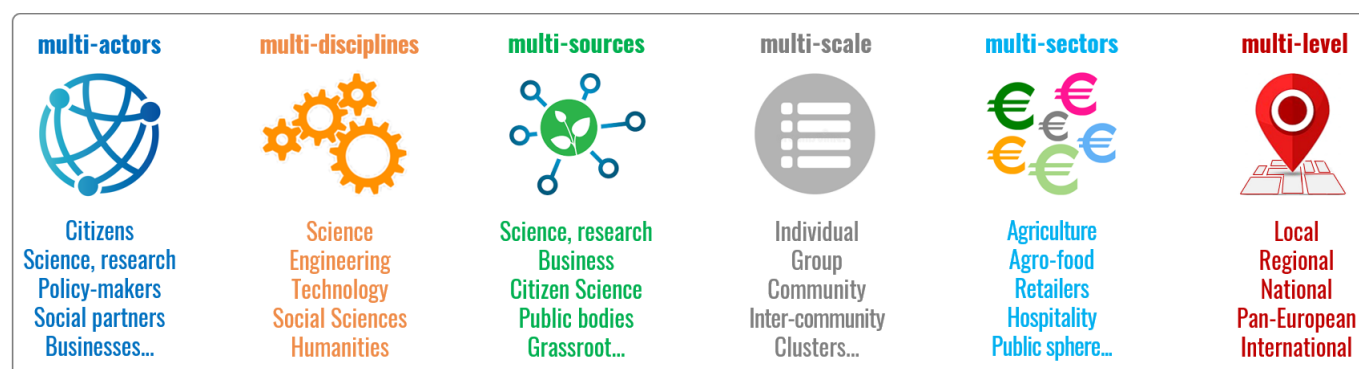
3.10 Evidence and synergies

Cities2030 draw on a comprehensive set of evidence (see also chapter 3.8), from a vast series of sources spanning from the project partners portfolio, research and innovation actions, often structured in scientific literature, white and green papers, policy briefs and EU-funded initiatives such as Horizon 2020, Interreg, PRIMA, COST, Life or Eureka Programmes, and most importantly practical uses-cases rooted in cities' specific initiatives, which encompass transferable settings and a substantial potential for innovation, they are, for instance:⁶⁷



In addition, Cities2030 implements a 'multipoints' approach which main aim is to ensure the comprehensive integration of the CRFS complexity, whilst also certifying that innovative approaches to creating value for and with the project targeted communities, spanning from the rural scene (e.g., agricultural, farming, rural) to the strict urban landscape, and who are undergoing transformative change, are well addressed, thus that Cities2030 engages many different groups of stakeholders adequately in the process. The figure 3.10 (below) illustrate this 'multipoints' approach which structure a cross-scale, cross-sectoral and cross-governmental setting.

Figure 3.10 – Illustration of the project 'multipoints' approach



⁶⁷ [European cities leading in urban food systems transformation](#), independent expert report, the European Commission, September 2019

Together with the aforementioned approach, Cities2030 provides impetus for local and regional initiatives developing on education and training on food systems (and to some extent their national dimension as well), for example Wissen Schafft Lebensraum⁶⁸ see the list of local and regional initiatives introduced in the table 3.10 (below), which also lists a series of projects relevant to the purpose of Cities2030'CBP.

Table 3.10 – TS-CBP identified source of evidence

Projects	Description	Potential uptake
2016-2021 Strength2Food ID: 678024	Improve the effectiveness of EU food quality schemes (FQS), public sector food procurement for ex. via hybrid forums, school educational resources, etc.	Web-based tools and instruments for empowerment globally such as hybrid forums to stimulate dialogue and mutual learning amongst CRFS actors
2017-2020 FIT4FOOD2030 ID: 774088	Establish multi-stakeholder, platform, mobilizing a wide variety of stakeholders (cities, regions, countries) towards sustainable food systems (FOOD2030)	Engagement activities and instruments, laboratories conceptual approach and practices to facilitate, web-based tools and instruments for empowerment
2017-2021 FoodSmartphone ID: 720325	Establish training sites (universities, research centres, innovation SME), network-wide science, innovation and transferable intersectoral skills training,	High level multidisciplinary training integrated into a common supra-disciplinary goal, to combat major socio-economic challenges (healthy, safe, fair food)
2017-2022 SafeConsume ID: 727580	Reducing the health burden from food-borne illness in Europe, education programs increasing skills and knowledge aiding teenagers to handle food safely	Results of surveys on identify needs for educational tools on food hygiene and safety, aligned to behavioural theory teacher training modules to support educators
2017-2023 Eat2beNICE ID: 728018	Identify nutrition and lifestyle drivers, characterize etiologic paths, initiate and support societal change by media-based information and education	"Learn Online" platform rooted in audio-video recordings in support of media-based information and education
2018-2021 SMARTCHAIN ID: 773785	Generate concrete actions for knowledge transfer, through organisation innovation workshops and training activities (coaching, peer-to-peer learning)	Training materials and use-cases, practices, etc. in food supply chains to build resources and materials
2018-2022 NEXTFOOD ID: 771738	Support the transition to more learner-centric, participatory, action-based and action-oriented education / learning in agrifood / forestry systems	Curriculum design approach, definition of key features for education and training, methodologies and supporting use-cases
2018-2022 SmartAgriHubs ID: 818182	A thematic network to accelerate the Pan-EU agri-food sector digital shift, consolidate, activate, extend digital ecosystems via Digital Innovation Hubs (DIHs)	Digitally enhanced participative and interactive learning tools
2018-2022 RECOMS ID: 765389	Train Early Stage Researcher (ESR) in transdisciplinary approaches to support resourceful community of practice, tackling food-related societal challenges	Bespoke programme of advanced training events, courses, secondments and doctoral studies
2019-2023 FNS-Cloud ID: 863059	Develop a Community of Practice, online learning framework, to develop practical skills and knowledge via workshops and eLearning.	Train-the-Trainer (reflective, engaging, participatory), Community of Practice (share ideas, find support, Work-based learning (real-life issues)
2019-2023 AquaVitae ID: 818173	Set up an industry and research w/social responsibility, community outreach on sustainable aquaculture production, including macroalgae, shellfish, etc.	Project approach on industry apprenticeships, MOOC, student exchanges and other complementary work-based learning methodologies
2020-2023 FoodSHIFT2030 ID: 862716	Create new jobs in the food sector and SMEs, increase urban-rural cohesion, and improve food system and citizen empowerment for urban-rural cohesion	Capacity building and children and Youth education programmes via FoodSHIFT Accelerator Labs for upscaling and multiplying food system innovations
2020-2024 FOODLAND ID: 862802	Empower smallholder farmers and food operators to foster nutrition-responsive, sustainable agro-biodiversity, productivity, resilience food supply chains	Training course packages and "food hub" concept, joint training events formats (seminars, tutorials, action-based learning residencies, etc.)

⁶⁸ [Wissen Schafft Lebensraum](https://www.wissen-schafft-lebensraum.de/), Bremerhaven University of Applied Sciences, May 2021

3.11 EU landscape

The Pan-EU-AC landscape proposes a vast panoply of learning environments, in different format, yet with the virtual dimension more representative in the overall portfolio. The table 3.11 (below) lists a few of these education and training environments (non-exhaustive), considering an EU-driven framework, liaising with the FOOD2030 agenda.

Table 3.11 – Example of learning environments (non-exhaustive)

Source	Country	Short description	Potential uptake
FAO	World	The FAO elearning Academy ⁶⁹ provides learning opportunities and multilingual elearning courses for professionals working in food and nutrition security, social and economic development, and sustainable management of natural resources, with the overall goal of strengthening the capacity of member countries to achieve the 2030 Agenda for Sustainable Development.	The FAO elearning Academy offers free access to content on a variety of topics of global interest, which is available in a range of formats, including elearning courses for self-paced learning, blended learning programmes, massive open online courses (MOOCs), technical webinars, online tutored courses, mobile learning, face-to-face training workshops and university master's and postgraduate degree programmes.
EU	Europe	Better Training for Safer Food (BTSF) ⁷⁰ - The single information source for all BTSF training resources and activities. To improve the knowledge and implementation of EU rules covering food and feed law, animal health and welfare, as well as rules on plant health and plant protection products	Training courses formats and contents to be adjusted to CRFS realities (e-learning, face-to-face courses and virtual classrooms), training material library model, key findings from published reports and calls for tender
EIT Food	Belgium	European Food Systems Education (EFSET) ⁷¹ and Training. Multidisciplinary and collaborative approaches that simultaneously target different parts of the food system, the course gives postgraduate students the confidence and skills necessary to bring about positive change	Multidisciplinary and collaborative approaches which simultaneously target different parts of the food system, on-line modules, face-to-face skills workshops, Summer School
Rikolto	Belgium	GoodFood@School for Belgian pupils ⁷² , to contribute to better school performance, lower drop-out rates and a healthier lifestyle	School Food Labs and Councils concept and School Food System, Online tool kit, nutrition quiz, thematic escape board game
INAGRO	Belgium	V International Workshop on Innovations in Agro and Food Technologies - WIAFT-V-2021 ⁷³ (scientific sessions, multidisciplinary forum)	Provisions on a wide range of fundamental and applied problems in various ecological, environmental and agri-technological systems
MATIS	Iceland	School on Adding Value to Food Side Streams 10-day course coached by professional tutors ⁷⁴	Building ideas and soft skills and entrepreneurship training to enhance innovation

⁶⁹ [FAO elearning Academy](https://elearning.fao.org/)

⁷⁰ [Better Training for Safer Food \(BTSF\)](https://btsf.eu/)

⁷¹ [European Food Systems Education \(EFSET\)](https://eitfood.eu/)

⁷² [GoodFood@School for Belgian pupils](https://goodfoodschool.eu/)

⁷³ [V International Workshop on Innovations in Agro and Food Technologies - WIAFT-V-2021](https://wiaft-v-2021.eu/)

⁷⁴ [School on adding value to food side streams](https://matis.eu/)



Rural Youth Europe	Hungary	Study Session: Feed it Forward – Food as a human right ⁷⁵ to explore the sustainability and reflect on contradictions	Non-formal educational methods and the conceptual approaches on considerations about food as a human right
Universitaet Fuer Bodenkultur Wien	Austria, Portugal, France, the UK, Spain, Germany, Italy, Greece	European Food Studies & Training Alliance (EuFood-STA) ⁷⁶ . Establishes and provides such a required frame for collaborations between the company and the academic sector by developing the independent “EuFood-STA Centre” (virtual platform and physical hubs) to implement, sustain and extend the developments of this alliance.	Potential for non-formal and informal learning adjustments of the needs and demand analysis approach, EuFood-STA network, which will be an organisational innovation hub model (instrument), Food Study Programmes curriculum.

⁷⁵ [Study Session: Feed it Forward – Food as a human right](#)

⁷⁶ [European Food Studies & Training Alliance \(EuFood-STA\)](#)

3.12 Interactive repository

Cities2030 ensures the learning environment of the project and all its instruments abides the EU agenda on data management. Cities2030 participates in an open-access data pilot and complies with the EU's Open Research Data policy framework and the set of guidelines for FAIR data management, e.g., scientific data management and stewardship⁷⁷, via the series of actions described next. At start, the project generates (and later maintains) a Data Management Plan and Framework (DMPF), as per the EC's requirements from project grantees. The plan is based on the principles of making data findable, accessible, interoperable and re-usable (FAIR) and includes information on the data standards to be applied by the project, how the data is exploited and how it is curated and preserved. The project data is published in the open access section of the project website and disseminated to all audiences with tailored strategies, especially by means of fostering local and global open science communities e.g., openaire.eu, etc. Cities2030 leverages key learnings, recommendations and tools delivered by a series of projects e.g., 'FAIRsFAIR' (H2020 ID: 831558), especially the data competences and research culture to build Cities2030 measures and solutions. Data collected include results from the empirical assessment of end user needs, designs for the algorithms, software components and the integrated platform and the results of testing and validation studies. These are shared with the consortium using a secure data sharing platform 'Lean Agile Data Management Commons' (LeanData). Due to the significant potential for exploitation of the project results, the DMPF includes provision for embargo of any data that is commercially relevant. Only once exploitation rights are preserved, can the data be included in open access scientific publications, and stored in the repositories of the publishing partners or public databases. Experimental data is collected in laboratory record books that will be stored once finished. They constitute a proof of ownership in case of conflict and a permanent record of the work done, including experimental details and operating procedures. Entries are sufficiently detailed so that someone else could replicate the procedure. Lab books include raw data or reference to the digital location. Lab records are the basis of scientific publications, which are also published in an open access basis, making accessible the methodologies used that will enable data verification and re-use. ***More specifically:*** (a) *types of data/outputs*, the project activities collects, delivers, use and reuse a vast series of public and private forms of data (surveys, events, materials reviews, etc.) constituting an overall size of ca 1 Tb; (b) *findability of data/output*, based on proper data protection protocols, available via the LeanData platform, project website and connected platforms (community of practice, forum, etc.), and linked to the European Open Science Cloud, supported by well-known and open formats and software, open globally-scoped repositories such as Zenodo⁷⁸, DataHub⁷⁹, DANCE⁸⁰, and EUDat⁸¹. (c) *accessibility of data/outputs*, all datasets openly accessible (or minimal licensing) except very specific materials related to intellectual property or privacy (GDPR), ethical matters in some cases; (d) *interoperability of data/ outputs*, the project practices relevant standards for metadata and community agreed schemas, controlled vocabularies, keywords, thesauri or ontologies where possible; (e) *reusability of data/ outputs*, see b); (f) *Curation and storage/preservation costs*. Cities2030 adds value to data, maximizes access, and ensures long-term preservation, through the curation process, data are organized, described, cleaned, enhanced, and preserved for public use; (g) *data security*, Cities2030 DMPF encompasses expert legal knowledge - detailed data privacy guides across key jurisdictions, including EU GDPR, US State, China, a Breach Response App, daily global monitoring (email alerts

⁷⁷ [OpenAIRE guides for researchers, EU's](#) Horizon 2020 OpenAIRE ID: 777541 and 101017452, February 2022

⁷⁸ [Zenodo Open Science platform](#), February 2022

⁷⁹ [Datahub Publish and Deployment](#), February 2022

⁸⁰ [DANCE Data Station](#), February 2022

⁸¹ [EUDAT: a new cross-disciplinary data infrastructure for science, Lecarpentier D. et al. in International Journal of Digital Curation, March 2013](#)

service), a Rulefinder Data Privacy (easy to use online resource with practical analysis of data privacy); (h) regulatory and ethical aspects, Cities2030 practices a Digital Data Governance suite system (via the DMPF) to ensure a full compliance with EU GDPR, but also compliance to digital standards and government regulations worldwide.

4. TRAINING MODULES

4.1 Situation analysis

The chapter “1.3 Concept and methodology - (a) Concept” of the project description emphasises on the complexity of CRFS, even on the very definition of the concept, highlighting CRFS proteiform orders and sui generis settings, making it a complex task to integrate research concepts and innovation actions⁸² to support transition toward circularity and sustainability, a situation providing the same level of complexity in tentative to generate accurate and independent thematic aligned with the comprehensive umbrella of CRFS. Accordingly, the TS-CBP proposes end-users must tailor the training modules curriculum per a place-based situational/need analysis approach, which may be implemented via the suggested template labelled “Sustainable Food System Assessment Cities2030”, though respecting the project’s ten key focus areas (see figure 3.1a).

4.2 Overview

4.2.1 Training module approach

Cities2030 proposes a TS-CBP organised in training modules with one learning sequence and up to four distinct training sessions / learning outcomes. The figure 4.2.1 (below) illustrate this approach structured in a template.

Figure 4.2.1a –Training modules approach and template

2. LEARNING SEQUENCE

	Unit of Learning outcome**	Description	Ressources and materials	Role of the trainer*	
SESSION 1	Title : Format : <i>on site / online</i> Duration : <i>in minutes, max 55 min.</i> Specifics: <i>if applicable, anything specific and for example learners will use their Smartphones, etc.</i>	<i>At the end of the session, the learner will be able to...</i>	<i>Overall description of the training session (comparable to an executive summary)</i>	<i>Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session</i>	<i>Short explanation of the role of the trainer** before, during and after the session</i>
SESSION 2	Title : Format : Duration : Specifics:				
SESSION 3	Title : Format : Duration : Specifics:				
SESSION 4	Title : Format : Duration : Specifics:				

* Other definitions: pedagogical objective(s)

** Or educator at large e.g., teachers, mentors, facilitators

⁸² [The challenge of food systems research: what difference does it make?](#), Ruben R. et al. in Sustainability, December 2018

4.2.2 Educational matrix

The TS-CBP proposes to structure the learning framework in eleven (11) ULO. Cities2030 proposes to generate “independent” yet “correlated” units which can be practiced at any time of a learning sequence, and “independently” of the other units, to facilitate the process. However, only Unit 1 must (necessarily) be practised before any other unit, for Unit 1 delivers an overview of the project’s learning environment, considering the complexity of the CRFS which is simplified via the present instrument.

The figure 4.2.2a (below) shows the proposed educational matrix of ULO n.º 1 to n.º 7, and the present document relates to the technology and social dimension only (see highlighted area).

Figure 4.2.2a – Educational matrix for the TS-CBP’s ULO n.º 1 to n.º 7

CRFSInnovation Unit 1	Societal and actor engagement and connection (online platform), project fine-tune introduction Global overview of the CRFS landscape considering local, regional, national and pan-EU levels					
	Production Unit 2	Processing Unit 3	Distribution Unit 4	Markets Unit 5	Consumption Unit 6	Waste Unit 7
Policy	Unit 2-Pol	Unit 3-Pol	Unit 4-Pol	Unit 5-Pol	Unit 6-Pol	Unit 7-Pol
Technology	Unit 2-Tec	Unit 3-Tec	Unit 4-Tec	Unit 5-Tec	Unit 6-Tec	Unit 7-Tec
Business	Unit 2-Bus	Unit 3-Bus	Unit 4-Bus	Unit 5-Bus	Unit 6-Bus	Unit 7-Tec
Social	Unit 2-Soc	Unit 3-Soc	Unit 4-Soc	Unit 5-Soc	Unit 6-Soc	Unit 7-Soc

The figure 4.2.2b (below) shows the proposed educational matrix of ULO n.º 8 to n.º 11, and the present document relates to the technology and social dimension only (see highlighted area).

Figure 4.2.2b – Educational matrix for the TS-CBP’s ULO n.º 8 to n.º 11

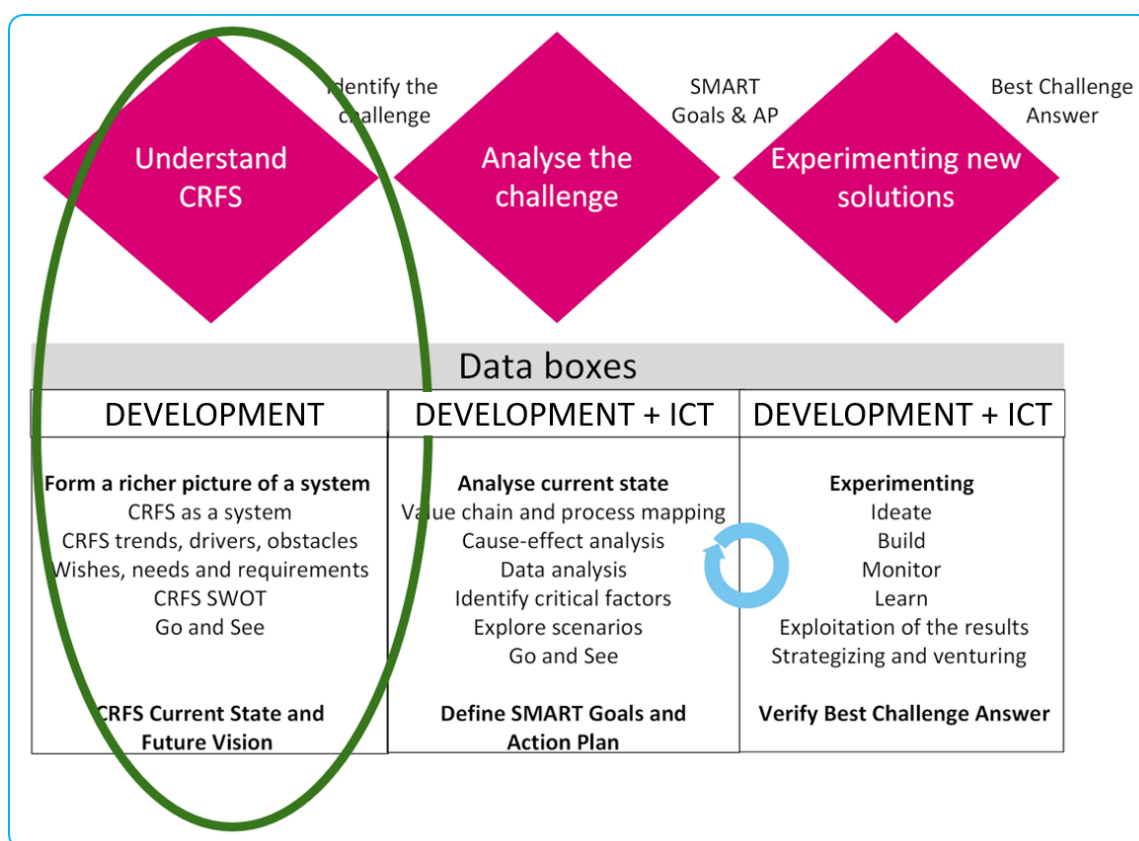
CRFS Unit 1	Societal and actor engagement and connection (online platform), project fine-tune introduction Global overview of the CRFS landscape considering local, regional, national and pan-EU levels			
	Security Unit 8	Ecos.Services Unit 9	Livelihood Unit 10	Inclusion Unit 11
Policy	Unit 8-Pol	Unit 9-Pol	Unit 10-Pol	Unit 11-Pol
Technology	Unit 8-Tec	Unit 9-Tec	Unit 10-Tec	Unit 11-Tec
Business	Unit 8-Bus	Unit 9-Bus	Unit 10-Bus	Unit 11-Bus
Social	Unit 8-Soc	Unit 9-Soc	Unit 10-Soc	Unit 11-Soc

4.3 Training modules

4.2.1 Conceptual approach

The project Cities2030's conceptual approach on innovation cycles and process is rooted in understanding CRFS first, from simplified to more complex characterisation. The innovation dimension of the project aim at building capacities in all actors of the CRFS, via the present guidelines, and also suggests how to explore CRFS external and internal environments to identify current settings, challenges, future vision, and the gap between those. The figure 4.2.1 (below) illustrates the project Cities2030's conceptual approach on innovation cycles and process, labelled "Extended Innovation Pattern". This approach is highly correlated to the CRFS-LL that plays a fundamental role in co-creating the TS-CBP and also in hosting the capacities' building as such. The output of the exploration and the result of the first diamond (see figure 4.2.1) is to identify and define the challenge for the CRFS-LL, to prepare ground for further development in the cycle: analysis and experimentation.

Figure 4.2.1 – Project Cities2030's "Extended Innovation Pattern"



All-in-all, the TS-CBP aims to contribute to advance holistic approaches to sustainable urban food systems, capture the wider landscape of CRFS and connect real-life issues to local and place-based CRFS settings, avoid sub-optimization and non-impactive measures, raise awareness and build capacity on systems thinking methodologies applicable to CRFS innovation processes. In addition, the TS-CBP aims at contributing to build capacities on how to evaluate the long-term impacts on personal, community, national, EU-wide development, considering the following models: adjusted PESTLE, Iceberg Model and the four Pillars of Food Security characterised by the FAO.

4.2.2 Resources

Materials – The TS-CBP is place-based and must therefore be implemented in the country language. End-users identify and organise material which can be printed or digital such as books, papers, reports and audio-video recordings matching the intended focus area subject to the training session. For example, should the focus area be about policies to facilitate food production in Turkey (here specially seafood), the training sessions maybe organised as shown in the figure 4.2.2a (below), here proposed as an illustrative demonstration only.

Figure 4.2.2a – Example of a TS-CBP training module related to food production

2. TRAINING MODULE					
		Unit of Learning outcome*	Description	Ressources and materials	Role of the trainer**
SESSION 1	Title : seafood production in Turkey Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand the current situation of seafood related value chains in the Province of Muğla (Turkey) and how corresponding supply chains are structured in CRFS	The learners are presented with data organised in a slideshow during the first 30-35 minutes, then they are invited to debate on key findings to explore drivers for sustainable sea food production in Turkey	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	The trainer circulate the material via email prior to the session so that learners familiarise with the supporting resources, and organise a virtual meeting ante and post training session
SESSION 2	Title : technology for seafood 1 Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand how technology may facilitate the production of seafood in the Province of Muğla (Turkey) in a sustainable way, and how it connects with FOOD2030 policy (four pillars)	The learners are presented with use cases organised in a slideshow during the first 30-35 minutes, then they are invited to debate on possible ways to for the sustainable production of sea food in in the Province of Muğla	5 use-cases of small-scale seafood production in Turkey	The trainer inform about the key thematic of the use cases via the distribution of a short note/outline of the use cases
SESSION 3	Title : technology for seafood 1 Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand how technology may facilitate the production of seafood in the Province of Muğla (Turkey) in a sustainable way, and how it connects with FOOD2030 policy (four pillars)	The learners are presented with use cases organised in a slideshow during the first 30-35 minutes, then they are invited to debate on possible ways to for the sustainable production of sea food in in the Province of Muğla	3 use-cases of large-scale seafood production in Turkey	The trainer inform about the key thematic of the use cases via the distribution of a short note/outline of the use cases
SESSION 4	Title : seafood and well-being Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand more in detail how technology for the sustainable production of seafood in the Province of Muğla (Turkey) connects with the "nutrition" pillar of FOOD2030	The learners are presented with data organised in a slideshow during the first 30-35 minutes, then they are invited to debate on key findings to explore drivers for public awareness-raising on the thematic	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	The trainer circulate the material via email prior to the session so that learners familiarise with the supporting resources, and organise a virtual meeting ante and post training session

* Other definitions: pedagogical objective(s)
 ** Or educator at large e.g., teachers, mentors, facilitators

Human resources – Cities2030 proposes that each current and candidate participating countries to identify and assign a specific individual, a facilitator, part of the partner's staff or network, or possibly via an Open Call campaign, to ensure the TS-CBP is well and accurately represented and promoted. In the countries represented in the project Cities via one or more organisation, one of this organisation must generate a link with this facilitator if not already existing. In other countries, where candidate end-users may manifest interest in implementing Cities2030 applicable and pertinent practices, the same approach should apply: one or more organisations would be identified to generate a link (if not existing already) with the TS-CBP facilitators.

The TS-CBP curation is operated via the project digital learning platform, hosted by the project website, and animated by the aforementioned facilitator. Here it is suggested to substantially invest in the TS-CBP impact maximization dimension, which is rooted in the creation of a multi-actor project ownership via the assistance of local recognised and influential individuals: Cities2030 Stewards (influencers) who can come from a vast number of socio-economic background spanning from farmers to mayors or local governing agents.

Together with other resources dedicated to impact maximisation Cities2030 Stewards promotes the TS-CBP via events organised by the project CRFS Alliance and beyond. Also, considering the "functionalities" of Cities2030 Stewards, it is suggested they also could be the very facilitators, trainers, teachers, mentors, and more globally "educators" of the PCB, and could actually be integrated in the TS-CBP "resource pack" as such.

In addition, a “train-the-trainer” programme must be co-created by organisations developing with facilitators to equip them accurately. The figure 4.2.2b (below) illustrates the Internet presence of the TS-CBP in the project website.

Figure 4.2.2b – Presentation of the TS-CBP in the project website



4.2.3 Dynamics

The project ambitions to assemble up to fifty cities to be MUFPP signatories, most of them situated in twenty countries participating in the project, but not strictly. As mentioned in the previous chapter, the TS-CBP is place-based and must therefore be implemented in country languages. Yet Cities2030's TS-CBP must be available to all candidate user and continuously updated as well.

To ensure the TS-CBP availability and continuous updating, Cities2030 proposes to apply to the TS-CBP the same dynamics suggested for the participative innovation processes hosted by the project's CRFS Labs, and which development are also supported by the project's Community of Practice e.g., 'Cities2030 Community' via the pages "Labs", "Forum", etc.: the TS-CBP is built via a multi actor participative contribution, and follows a procedure as described next.

First, in a given country, the TS-CBP is supervised by a specific organisation either partner in the present consortium, or external to it. This organisation triggers the production of training modules according to the project's educational matrix via opening topics in the page "Forum" of the platform Cities2030 Community.

For example, the partner P40 (CITAG from France) opens the topic “urban farming” corresponding to the focus area “production” thus Unit 2-Pol, or an organisation external to the consortium but engaged as “Alliance Partner” via the project’s CRFS Alliance network, Muğla Sıtkı Koçman University (Muğla, Turkey), opens the topic “safe sea food” corresponding to the focus area “consumption” thus Unit 6-Pol, etc. Then, the organisation who opened the topic animates discussions in the page “Forum” aiming at defining the training module until its corresponding template is produced. The template is conceived to inform about the overall production process including the participating organisations via the fields “Cities2030 partner” (if applicable) and “Other organisations involved (design, training, etc.)”, for all cases. The figure 4.2.2 (below) illustrates the production process of one or more training modules of project Cities2030 TS-CBP, in the case it is triggered by one of the project partners. The same principles apply to any other source of participative production.

Figure 4.2.3 – Example of production process of a training module for the TS-CBP



4.2.4 Thematic

Cities2030’s learning environment proposes to implement training activities to equip participants for the development of technology, business and social innovation co-creation processes, based on ten focus areas e.g., identified thematic, illustrated in the figure 3.1a, and understood as learning outcomes under the present learning process. However, the first ULO proposes to address innovation as a whole (concept, framework, approaches, applications, etc.) to provide a comprehensive umbrella for the co-creation and implementation of the ten ULO.

Consequently, the TS-CBP starts with ULO n.º 1, to ensure participants are well informed about the prismatic character of CRFS. The chapter 4.1 outlines the matter of situation/need analysis which the starting point of the TS-CBP. The table 4.2.4 (next page) outlines suggested thematic specific to each focus area (see also figure 3.1a), and for ULO n.º 1 as well.

Kindly note that practically all the possible thematic proposed in random order for each of the ten thematic of project Cities2030 can actually be combined. For example, the first suggestion for the ULO n.º 1 e.g., “1) develop via case-studies and good practices on what is innovation in science, technology, and in the social dimension when considering transforming food systems in Europe, ‘Associated Countries’ and beyond, and what are their respective and distinctive role(s) in the process” is applicable to any of the ten thematic. For example, this ULO n.º 1 first suggestion gives for the thematic “distribution” the following: “develop via case-studies and good practices on what is innovation in science, technology, and in the social dimension when considering food transportation in Europe, ‘Associated Countries’ and beyond, and what are their respective and distinctive role(s) in the process”.



Table 4.2.4 – TS-CBP suggested non-exhaustive thematic per focus areas

ULO	Focus area	Short description	Possible thematic (random order)
1	CRFS technology and social innovation action framework	The main aim of this ULO is to build capacities on the overarching notions of CRFS-related technology, business and social innovation frameworks nexus e.g., innovation process as such, development, testing, assessment and validation.	1) Develop via case-studies and good practices on what is innovation in science, technology, and in the social dimension when considering transforming food systems in Europe, 'Associated Countries' and beyond and what are their respective and distinctive role(s) in the process 2) Explore and discuss the EIT Food's innovation model 3) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS when considering the technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 4) Develop via case-studies and good practices on how to effectively harvest and structure CRFS data and overall intelligence to support innovation in the technology, business and social sphere 5) Develop via case-studies and good practices on how to practice living labs to facilitate co-creation and co-production of sustainable technology, business and social innovation pathways 6) Develop via case-studies and good practices on how to future-proof sustainable CRFS innovation in the technology, business and social dimensions via cities' scale pilots and experiments 7) Develop via case-studies and good practices on how to ensure sustainable and efficient learning environments to foster technology, business and social innovation in the CRFS sphere 8) Develop via case-studies and good practices on how to integrate ICT-based enablers in the process of co-creating technology, business and social innovation frameworks, and how to use ICT-based enablers to generate sustainable CRFS 9) Develop via case-studies and good practices on how European Technology Platforms contribute to co-creating sustainable food systems? 10) Develop via case-studies and good practices on how innovation models in food industry contribute to co-creating sustainable food systems 11) Develop via case-studies and good practices on the role of the European Innovation Partnership in linking Innovation and Research in Agricultural Knowledge and Innovation Systems



ULO	Focus area	Short description	Possible thematic (random order)
			12) Develop via case-studies and good practices on the European Innovation Hubs for Start-Ups in the food Industry promoted by the EU 13) Develop via case-studies and good practices on how sustainable technology, business and social innovation pathways contribute to the FOOD2030 Policy e.g., build competences on the notion/concept of “co-benefits” 14) Develop via case-studies and good practices on how social innovation in food systems is happening and how it could be fostered to generate more sustainable CRFS and especially food security and accessibility 15) Develop via case-studies and good practices on how specific social innovation environments such as food sharing communities and economies provide pertinent pathways towards sustainable CRFS 16) Develop via case-studies and good practices on how specific social innovation environments such as food sovereignty movements and economies provide pertinent pathways towards sustainable CRFS 17) Develop via case-studies and good practices on how the specific concept of circularity generated by technology, business and social innovation provide pertinent pathways towards sustainable CRFS 18) Develop via case-studies and good practices on how system dynamics and innovation models concepts and approaches, proposed by food networks, provide pertinent pathways towards sustainable CRFS 19) Explore the role of Social Media on CRFS 20) Explore the specific impact of the still ongoing COVID-19 pandemic on CRFS, considering all ten thematic part of the project Cities2030 concept 21) Explore and examine the European Union (EU) and the EU ‘Associated Countries’ policy framework and panorama, agendas and strategies applicable to CRFS technology and social innovation action framework and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 22) Explore and examine the United Nations’ strategy and agendas applicable to CRFS technology and social innovation action framework and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
2	Production	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the production of food towards building sustainable CRFS	1) Globally introduce the key concepts of food production spanning from plant to animal and beyond 2) Develop via case-studies and good practices on the global impact dimensions of food production on the environment, socio-economic and social arena



ULO	Focus area	Short description	Possible thematic (random order)
			3) Identify innovative food production technology, business and social mechanisms trends of the past decade and develop knowledge on enablers, drivers, obstacles and vulnerabilities 4) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS when considering food production technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 5) Develop via case-studies and good practices on how the specific concept of circularity generated by food production innovation provide pertinent pathways towards sustainable CRFS 6) Build capacities via case-studies and good practices on how food production can contribute to drivers and enablers of sustainable CRFS such as shortening supply chains, or reducing waste, or facilitating access to land, or decreasing use of natural resources, or preserving biodiversity, as well as any other applicable fields 7) Build capacities via case-studies and good practices on how specific social innovation, for example Citizen Science can contribute to generate sustainable food production technologies, and correlate with the business sphere and the social innovation sphere as well 8) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food production and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 9) Explore and examine the United Nations' strategy and agendas applicable to food production and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
3	Processing	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the processing of food towards building sustainable CRFS	1) Globally introduce the key concepts of food processing spanning from grinding to fermentation and beyond, also considering novel raw materials used for food 2) Develop via case-studies and good practices on the global impact dimensions of food processing on the environment, socio-economic and social arena 3) Identify innovative food processing technology, business and social mechanisms trends of the past decade and develop knowledge on enablers, drivers, obstacles and vulnerabilities 4) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS when considering food processing technology, business and



ULO	Focus area	Short description	Possible thematic (random order)
			social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 5) Develop via case-studies and good practices on how the specific concept of circularity generated by food processing innovation provide pertinent pathways towards sustainable CRFS 6) Build capacities on how food processing can contribute to drivers and enablers of sustainable CRFS such as shortening the supply chain, or reducing waste, or decreasing use of natural resources, etc. 7) Build capacities via case-studies and good practices on how specific social innovation, for example Citizen Science can contribute to generate sustainable food processing technologies, and correlate with the business sphere and the social innovation sphere as well 8) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food processing and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 9) Explore and examine the United Nations' strategy and agendas applicable to food processing and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
4	Distribution	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the distribution of food towards building sustainable CRFS	1) Globally introduce the key concepts of food distribution spanning from packaging to home delivery via digital platforms 2) Especially, explore the role and responsibilities of governments and businesses for developing efficient food distribution networks to ensure that supply does not outstrip demand 3) Build capacities via case-studies and good practices on the environmental dimension of the principle of the "last mile" of delivery, etc. 4) Build capacities via case-studies and good practices on the economics of food distribution, for example the preservation of frozen food quality and safety along the distribution chain 5) Build capacities via case-studies and good practices on the "civic" and social dimension of food distribution, correlated to "alternative food networks" for example producer-consumer networks 6) Develop on key identified barriers, enablers, drivers and key CRFS agents role(s) related to the development of sustainable food distribution systems



ULO	Focus area	Short description	Possible thematic (random order)
			7) Explore subsets of the more general food distribution network such as “food service distribution” (delivery of food from producers, processors and manufacturers to food service operators such as grocery stores, chefs, food and beverage managers, hospitals, cafeterias, restaurants, nursing homes and beyond) 8) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related distribution technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 9) Explore and examine the European Union (EU) and the EU ‘Associated Countries’ policy framework and panorama, agendas and strategies applicable to food distribution and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 10) Explore and examine the United Nations’ strategy and agendas applicable to food distribution and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
5	Markets	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to food marketplaces towards building sustainable CRFS, also consider here the marketing and sales scene	1) Globally introduce the most important concepts of food commodisation spanning from food price to food sharing economies 2) Build capacities via case-studies and good practices on food banks and correlated social innovation mechanisms 3) Develop on key identified barriers, enablers, drivers and key CRFS agents role(s) related to the development of sustainable food marketplaces, both physical and digital 4) Explore what are the different types of food markets and types of grocery stores e.g., conventional super-markets, limited assortment supermarkets, supercentres, warehouse clubs, convenience stores, etc. 5) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related markets technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 6) Explore the different types of food retailers and current correlated industry shifts, such as the vast eCommerce panorama, also non-store retailing, franchising, etc. 7) Explore how cities and regions can facilitate urban-rural linkages, support a market for regional products, and



ULO	Focus area	Short description	Possible thematic (random order)
			use the panoply of their institutional purchasing power to support small and local producers 8) Explore the role of place-based cuisine (local, regional, national or cross-borders) e.g., cuisine based upon place-based resources, which may vary considering food availability and trade, varying climates, cooking traditions and practices, and cultural differences 9) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food markets and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 10) Explore and examine the United Nations' strategy and agendas applicable to food markets and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
6	Consumption	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the consumption of food towards building sustainable CRFS, also consider here behavioural change in nutrition/eating habits	1) Globally introduce the key concepts of food consumption spanning from healthy habits to correlated pressures on natural ecosystems and climate, or co-benefits to the FOOD2030 Policy 2) Develop on key identified barriers, enablers, drivers and key CRFS agents role(s) related to the development of sustainable food consumption, and, especially, explore the concept of "healthy, nutritious, sustainable and culturally appropriate" (HNSN) food 3) Develop on key identified barriers, enablers, drivers and key CRFS agents role(s) related to the development of sustainable consumption 4) Explore the specific concept of consumption-related "food value chain" 5) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related consumption technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 6) Develop especially on the consumer side of identified lack of government programmes in promoting support and awareness and higher consumption of HNSN 7) Explore especially the direct and indirect greenhouse gases emissions from household consumption considering in particular the component "climate-smart food systems that adapt to climate change, conserve natural resources and help reduce the flow of greenhouse gases into the atmosphere" of the FOOD2030 Policy

ULO	Focus area	Short description	Possible thematic (random order)
			8) Explore especially the potential of urban-farming considering all other 9 features of the project' CRFS concept, considering in particular the component "fostering environmentally friendly sustainable agriculture and aquaculture" of the FOOD2030 Policy 9) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food consumption and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 10) Explore and examine the United Nations' strategy and agendas applicable to food consumption and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
7	Waste	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the management of food waste and loss towards building sustainable CRFS	1) Globally introduce the key concepts of food waste spanning from to cross-sectoral synergies (e.g. with water and energy systems) to waste valorisation (circularity) 2) Explore especially the concept of circularity considering that circular food systems prioritise and foster regenerative production, favour reuse and sharing practices, reduce resource inputs and pollution and ensure resource recovery for future uses, to name but these key features only 3) Develop on key identified barriers, enablers, drivers and key CRFS agents role(s) related to the development of sustainable waste management systems spanning from reduction to treatment as such 4) Explore in particular the households dimension when considering circular model to contribute making households sustainable through inclusive circular food waste practices, e.g., what are the possible mechanisms of transition enabling the change from a take-make-waste society to sustainability, resource-efficiency and circularity in the living environment, i.e. at the consumers' homes? 5) Build capacities via case-studies and good practices on the economics of food waste management 6) Especially, explore the role and responsibilities of governments and businesses for developing efficient food waste management ecosystems to ensure the lowest impact on the environment considering the component "achieving zero food waste" of the FOOD2030 Policy 7) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS when considering food waste and management technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact

ULO	Focus area	Short description	Possible thematic (random order)
			assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 8) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food waste and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 9) Explore and examine the United Nations' strategy and agendas applicable to food waste and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
8	Security	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to food security towards building sustainable CRFS	1) Globally introduce the key concepts of food security spanning from traceability to fraud 2) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related security technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 3) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food security to identify trade-offs and discuss on possible pathways to mitigate or even eliminate these trade-offs 4) Explore and examine the United Nations' strategy and agendas applicable to food security to identify trade-offs and discuss on possible pathways to mitigate or even eliminate these trade-offs 5) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food security and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 6) Explore and examine the United Nations' strategy and agendas applicable to food security and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs
9	Ecosystem Services	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to the preservation, maintenance and restoration of food-related Ecosystem Services towards building sustainable CRFS	1) Globally introduce the key concepts of food related Ecosystem Services spanning from pollination, water purification, soil fertility, climate regulation, etc. up to cultural values 2) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related Ecosystem Services technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact



ULO	Focus area	Short description	Possible thematic (random order)
			assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 3) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food-related Ecosystem Services and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 4) Explore and examine the United Nations' strategy and agendas applicable to food-related Ecosystem Services and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 5) Explore and examine the provision of services panorama of food and CRFS e.g., food as such (also the conditions for these food resources to grow) 6) Explore and examine the regulation of services panorama of food and CRFS e.g., ecological balance (soil health, water, biodiversity, climate change mitigation, waste reduction, resource conservation, etc.) 7) Explore and examine the support of services panorama of food and CRFS e.g., habitat for different life forms, retain biodiversity, nutrient cycling, and other services for supporting life on the earth 8) Explore and examine the support of services panorama of food and CRFS e.g., tourism, recreational, aesthetic, cultural and spiritual services, etc.
10	Livelihoods, growth	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to food-related livelihoods towards building sustainable CRFS	1) Globally introduce the key concepts and features of food-related livelihood and growth spanning from diversification of income sources, increased access to food, employment opportunities, increased value addition, sustainable production practices, safety and quality, etc., up to innovation and technology adoption 2) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related livelihoods and growth technology, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 3) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food-related livelihoods and growth, and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 4) Explore and examine the United Nations' strategy and agendas applicable to food-related livelihoods and



ULO	Focus area	Short description	Possible thematic (random order)
			growth, and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 5) Explore, examine food- and CRFS-related diversification of income sources 6) Explore, examine food- and CRFS-related access to food 7) Explore, examine food- and CRFS-related employment opportunities, increased value addition 8) Explore, examine food- and CRFS-related sustainable production practices, safety and quality 9) Explore, examine food- and CRFS-related innovation and technology adoption
11	Inclusion, equity	The main aim of this ULO is to build capacities on notions of technology and social innovation action frameworks applicable to food-related inclusion and equity towards building sustainable CRFS	1) Globally introduce the key concepts of food-related inclusion and equity spanning from the definition of food environments, accessibility, food justice, food sharing economies, participation and engagement, inclusivity and diversity, fair trade and labor practices, health and nutrition, etc., up to education and awareness 2) Develop via case-studies and good practices on what is a monitoring framework of sustainable CRFS correlated to food-related inclusion and equity technology aspects, business and social innovation dimension, encompassing indicators and cost-effective methodologies for impact assessment, and how to co-create accurate CRFS indicators; here explore the MUFPP, EIT Food, etc. 3) Explore and examine the European Union (EU) and the EU 'Associated Countries' policy framework and panorama, agendas and strategies applicable to food-related inclusion and equity, and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 4) Explore and examine the United Nations' strategy and agendas applicable to food-related inclusion and equity, and identify trade-offs to discuss on possible pathways to mitigate or even eliminate these trade-offs 5) Explore, examine food- and CRFS-related food- and CRFS-related definition of food environments 6) Explore, examine food- and CRFS-related accessibility, food justice, food sharing economies 7) Explore, examine food- and CRFS-related participation and engagement, inclusivity and diversity, 8) Explore, examine food- and CRFS-related fair trade and labor practices 9) Explore, examine food- and CRFS-related health and nutrition 10) Explore, examine food- and CRFS-related education and awareness

4.2.5 Production

Cities2030 proposes to structure the training modules via a template and this chapter aims at assisting understanding how to use it in learning environment practices. The figures 4.2.5a and 4.2.5b (below) illustrate this approach and the components of the template: framework (information) and learning sequence.

Figure 4.2.5a – Training module framework for the TS-CBP

TRAINING MODULE TEMPLATE FOR Cities2030 CAPACITY BUILDING PROGRAMME FOR TECHNOLOGY AND SOCIAL INNOVATION	
1. FRAMEWORK	
Cities2030 partner	Extended legal name and position in the GA
Other organisations involved (design, training, etc.)*	For example, in Turkey all training modules are co-created and practices are organised systematically with 1) a research body 2) a city 3) a business and 4) a Civil Society Organisation (CSO) or Community-Based Organisation (CBO)
Title	Suggested to better recognise and "brand" the training session and compare it with other
Focus area	One of Cities2030's focus areas, see Figure 3.1a of the document "Policy co-creation capacity building programme" (D4.1)
Unit of Learning outcome	For instance, "Unit 1 – Policy" or "Unit 2 – Production, Policy", or "Unit 10 Livelihoods, Policy"
Language	Either country's language or English, or any other languages, for example in Turkey it is done in Turkish and Arabic
Synchronous sessions	For instance, if one of the steps of the present training session is done at the same time with a step of another training session
Correlated sessions	For instance, if one of the steps of the present training session is correlated with a step of another training session
Target group	Identified per the project definition, see Figure 2 of the document "Policy co-creation capacity building programme" (D4.1)
Sector	For instance, "farmers of vegetables" or "cash carry" or "hospitality" or "civil society" or "policy-makers", etc.
Pre-requisite	For instance, if the participants must read specific materials, or participate to a specific event (other training sessions, etc.)
English level (if applicable)	For instance, "not applicable", or, if applicable "advanced" or "average" or "basic"
Main resources	One or two major supporting material such as a book, or a paper, etc.
Steps	1) To be completed 2) To be completed, etc.

* as Associated Partner e.g., "Alliance" partner registered in the project "CRFS Alliance" platform/panorama (community, synergies, good practices, observatory, etc.)

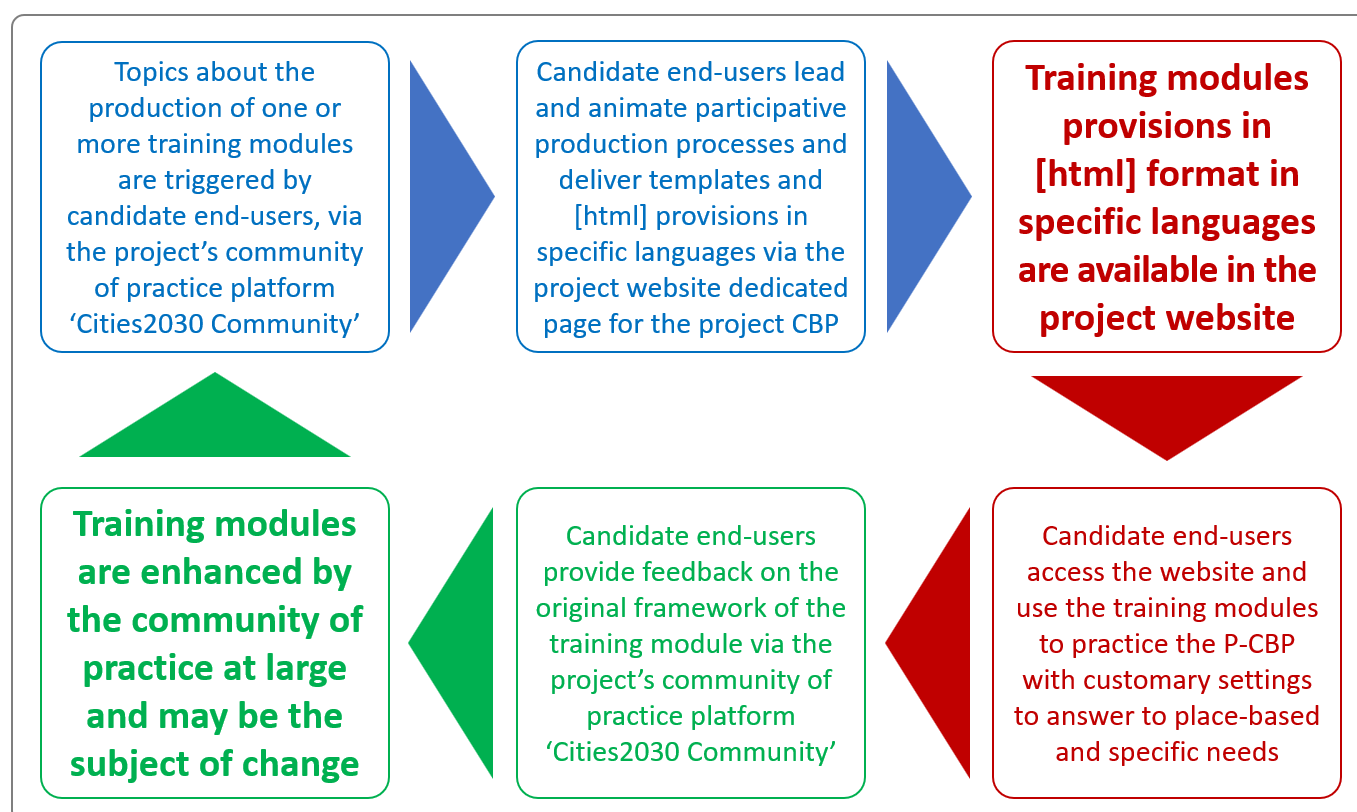
Figure 4.2.5b – Training module learning sequence for the TS-CBP

2. LEARNING SEQUENCE		Unit of Learning outcome**	Description	Ressources and materials	Role of the trainer*
SESSION 1	Title : Format : on site / online Duration : in minutes, max 55 min. Specifics: if applicable, anything specific and for example learners will use their Smartphones, etc.	At the end of the session, the learner will be able to...	Overall description of the training session (comparable to an executive summary)	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	Short explanation of the role of the trainer** before, during and after the session
SESSION 2	Title : Format : Duration : Specifics:				
SESSION 3	Title : Format : Duration : Specifics:				
SESSION 4	Title : Format : Duration : Specifics:				

* Other definitions: pedagogical objective(s)
** Or educator at large e.g., teachers, mentors, facilitators

The templates are digitised to be available online in [html] format to facilitate the availability of the information in a vast number of languages, upon which, then, end-users may build upon to elaborate place-based and customary TS-CBP, in different countries and languages. The figure 4.2.5c (below) illustrates the overall training module production participative process, incorporating the resources, dynamics and thematic frameworks. This process is suggested to ensure three dimensions: first the availability of training modules in a vast number of languages via a [html] format, second, the possibility of any candidate end-user to trigger and supervise the participative production of training modules, and third, the continuous enhancement of the training modules as such.

Figure 4.2.5c – Overall production framework of the TS-CBP



The project community of practice generates training modules as a whole via the participative production of templates which are delivered to partners SLEAN (P14, Finland), together with IAAD (P5, Turkey). Together, partners ensure the materials are uploaded and made available in the project website, with the support of project's Cities2030 webmaster represented by partner ARFI (P29):

Contact person for Smart&Lean:.....Ms Tuula LÖYTTY via.... tuula.loytty@smartlean.fi

Contact person for IAAD:.....Ms Bruno SALES da SILVA research.iaad@gmail.com

IAAD is the partner assigned to supervise the TS-CBP curation in the project website and the main contact organisation for all matters connected to the participative production of the TS-CBP. This assignment comprises networking with all the entities contributing to the co-creation of the TS-CBP, whereas it is the organisation practicing the TS-CBP in a specific location (country) who ensures communication and development with the TS-CBP end-users. Both partners, Smart&Lean and IAAD, ensure all participants in the TS-CBP are engaged in the project community of practice via organising a structured networking with all organisation to that purpose.

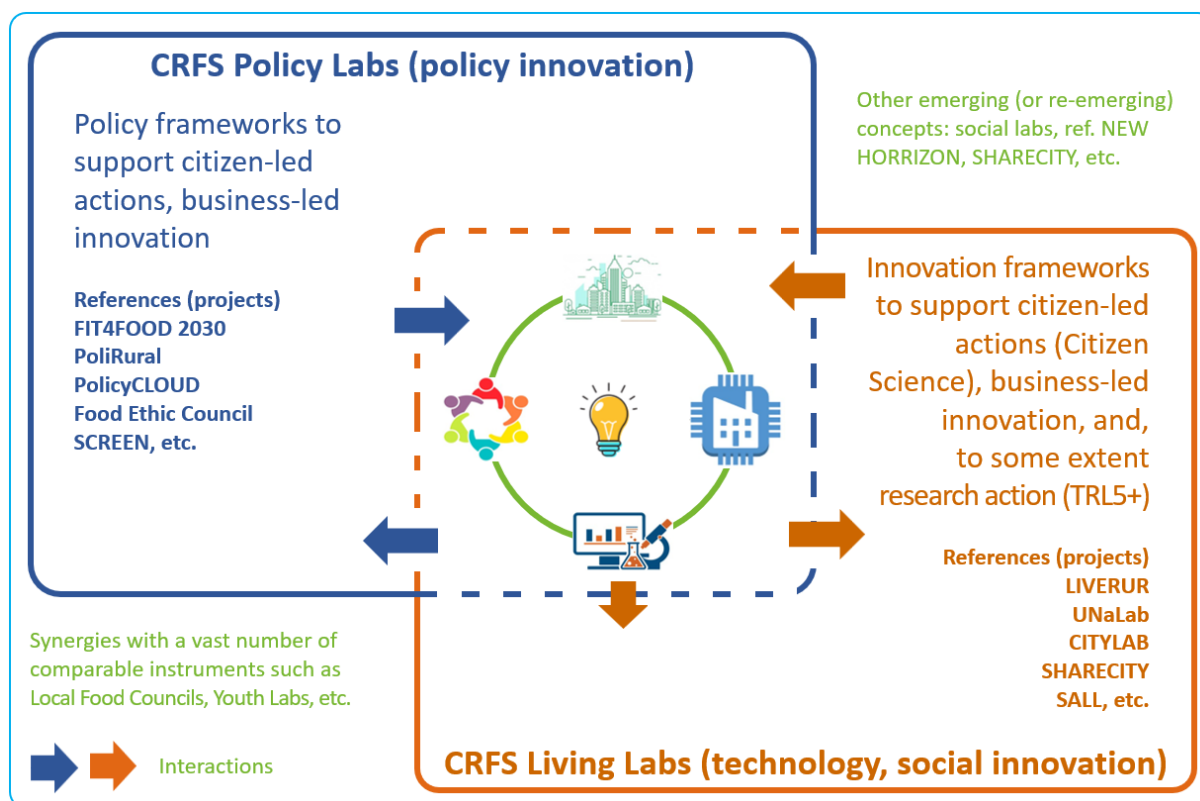
The project community of practice e.g., Cities2030 Community, constitute the main source for the production of the project training modules for it assembles the actors of local and regional CRFS.

The project' CRFS Labs, here in there format of 'Living Labs', play a significant role when considering the TS-CBP via two dimensions: first the CRFS-LL generate learning environments for the very co-creation of the CRFS-LL as such, thus this competences building must be integrated to the TS-CBP; second, the CRFS-LL host activities aiming at facilitating the participative production of training modules as such, and; third, CRFS-LL host the training sessions as such, but of course, not strictly. Indeed, training sessions may occur in any place to the extent it is suitable for the implementation of the anticipated training practices. Oppositely, the participative production of pioneering training modules occurs in the CRFS-LL for they are the core instruments of the project for the practice of innovation cycles in a multi actor environment. To that end, the organisations and individuals who are facilitating and managing the CRFS-LL must be entirely part of the TS-CBP development process. In addition, here, the interactions between the CRFS-LL and the TS-CBP must be supported by synergetic mechanisms with past (yet recent), ongoing and planned initiatives related to building capacities in individuals on sustainable CRFS (some examples are mentioned in chapter 3.10) specially those at local and regional levels. Concretely, promoters of training modules would liaise with pertinent parties engaged and active in identified local and regional developments, to build upon key findings from these developments (e.g., contents, methods, evaluation approach, impact monitoring and assessment, etc.)

4.2.6 CRFS Labs

The figure 4.2.6 (below) illustrates the project Cities2030's approach and the key actors of the CRFS engaged in leading the innovation framework environment: the organised civil society, cities, businesses, and research.

Figure 4.2.6 – Interaction between Cities2030's CRFS-PL and CRFS-LL



The project Cities2030 CRFS Living Labs (CRFS-LL) are instruments co-created to facilitate, accelerate and animate innovation cycles and processes, and established by place-based actors of the CRFS, among which partners of the project, but not strictly. CRFS-LL are the events in space and time which host the TS-CBP place-based co-creation as such, and also its implementation.

As indicated previously, these innovation framework are centered in the project ten thematic, illustrated in figure 3.1a and outlined (non-exhaustive) in table 4.2.3. Living Labs shortens the time from idea to implementation and therefore, represent a smart way to develop on innovation frameworks. By working with “test beds”, “pilots”, “experiments”, etc. in a real environment, it is possible to shorten the time from idea to implementation significantly. The method is particularly suitable in projects where many different actors are involved, such is the case of project Cities2030. When starting the work with an innovation process, it is common not know what the work will result in. By using the Living Labs methodology, it is possible to generate an efficient innovation cycle and structure at work, even if the content itself is initially unclear. Living Labs are about actor co-creation and co-operation, where all the actors part of a specific challenge setting are gathered, either in a physical or virtual space to invent together. This means that the actors gain a better understanding of each other's roles and the goals and challenges that are at play. This also creates trust that makes all actors more willing to share data, which can otherwise be a critical factor of innovation realisation.

4.2.7 'Do no significant harm' principle

The Regulation establishing the Recovery and Resilience Facility⁸³ (RRF) provides that no measure (i.e., no reform and no investment) included in a Member State's Recovery and Resilience Plan (RRP) should lead to significant harm to any of the six environmental objectives within the meaning of Article 17 of the Taxonomy Regulation⁸⁴ ranging from climate change mitigation to protection and restoration of biodiversity and ecosystems. The project Cities2030 'do no significant harm' principles (see below), or DNSH, are practiced throughout the planned activities and subject to a specific training module under the TS-CBP Unit 1 “CRFS innovation”. In addition, it recommended that all units abide these specific regulation adjusted to the realities of the TS-CBP practice (location, actors involved, thematic, etc.), especially when considering resources and materials to support the implementation of the TS-CBP.

4.2.8 Media material

Training modules co-production leaders are invited to publicise their initiative at centralised level via liaising with partner IAAD (P5), using the applicable Google Form template created to collect information on events. IAAD is then responsible for the publication of the event in the project Internet presence platforms.

Contact person for IAAD: Mr Bruno SALES da SILVA research.iaad@gmail.com

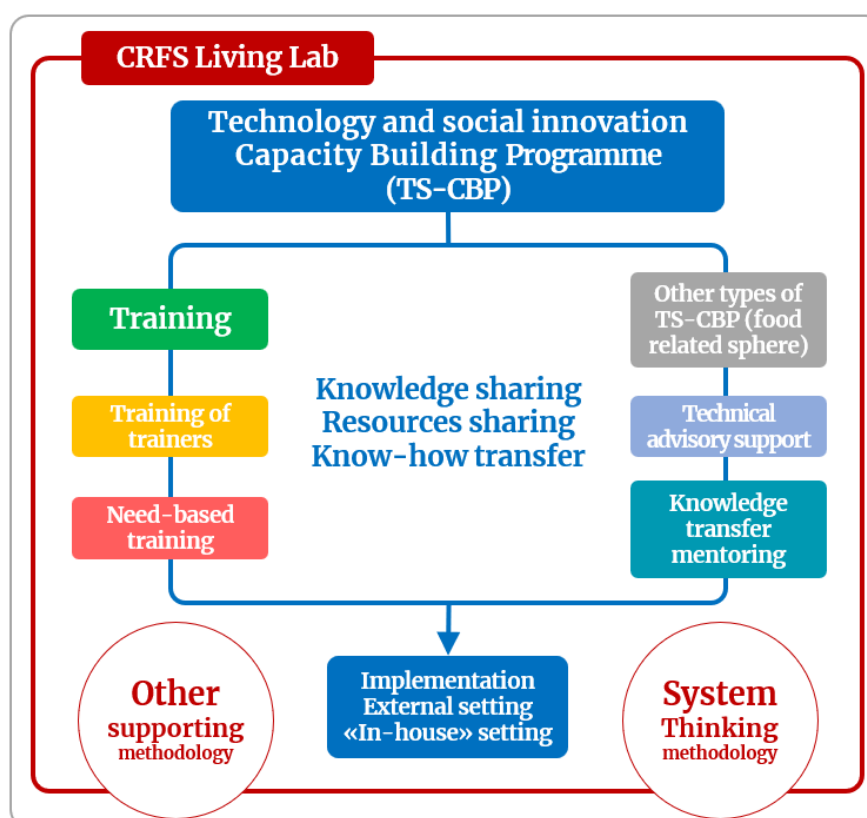
⁸³ [Technical guidance on Recovery and Resilience Facility \(RRF\)](#), the European Commission, February 2021

⁸⁴ [The EU Taxonomy Regulation](#), the European Commission, July 2020

5. PRACTICE

The TS-CBP is not only a capacity building instrument but a knowledge-sharing platform as well. It enables to structure processes in place-based settings to exchange critical information across the actors of the CRFS. One of the anticipated objectives is to generate a culture of knowledge where actors of the CRFS are encouraged to share their expertise and experiences with others which facilitates silos breaking. The TS-CBP is also a resource sharing platform, not only on the accessibility format of free licence but also per the principles of commons e.g., Open Educational Resources such as: OERcommons⁸⁵, which is a general term for shared resources in which each actor of an ecosystem has an equal or comparable interest in using a particular set of resources spanning from experts to facilities and equipment. The TS-CBP aim at facilitating knowledge transfer in a broaden sense and can be structured by a limitless series of approaches, methodologies and sources of learning, spanning from small urban vegetable gardens construction and management, accessible to all in terms of knowledge capabilities, to food science and engineering, more oriented for junior researchers and scientists. The figure 5a (below) illustrates the operational framework of the TS-CBP.

Figure 5a – TS-CBP operational framework

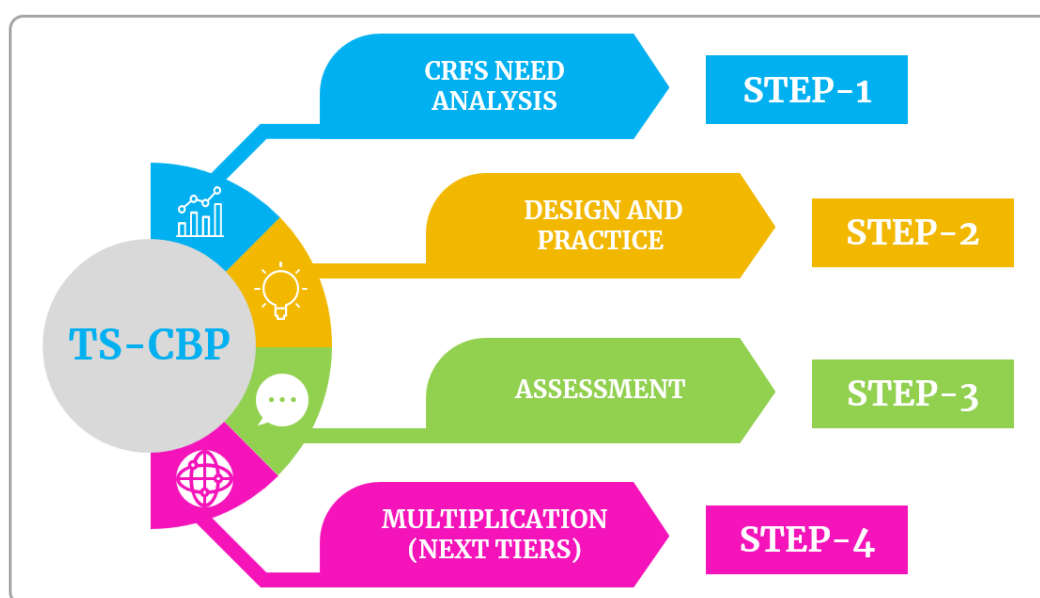


The suggested TS-CBP is organised in a series of components which are vital to the implementation e.g., training, training of trainers and need-based training (left side of the figure) and optional quality enhancing components e.g., other type of existing food-related TS-CBP, technical advisory support and knowledge transfer mentoring. The TS-CBP is hosted in and develops with the CRFS-LL as an integrated component of the innovation cycle.

⁸⁵ [OERcommons](https://oercommons.org/), February 2022

The TS-CBP is implemented with the assistance of supporting instruments and methodologies e.g., System Thinking and other applicable approaches for problem solving, and with a vast panoply of techniques and methodologies chosen by the TS-CBP practitioners according to their needs. The TS-CBP implementation starts with the realisation of a need analysis via the Sustainable Food System Assessment Cities2030, which is a place-based need analysis assessment questionnaire template that may be created via a vast panoply of applications such as Google Forms. This questionnaire may be implemented online either directly by the interviewed entity/individual or with the support of one or more facilitators during a video-conference. It may as well be implemented via a structured interview using the questionnaire, either online or in presence. The figure 5b (below) illustrates the overall TS-CBP practice (summary of all chapters of the present guidelines).

Figure 5B – TS-CBP operational framework



The chapter 4 of the present guideline shows how practitioners may co-create the training modules of the TS-CBP with a limitless number of sources of learning, teaching and training methodologies. This flexibility is vital to safeguard end-users can effectively develop customary training sessions for each of the identified focus areas (see figure 3.1a). For instance, training methodologies may encompass a vast number of techniques from “conventional” classroom’s settings, to workshops, apprenticeships and transnational mobilities settings, to more informal science cafés, science-technology-policy dialogues or Youth-led bootcamps, to name but these few.

6. SUPPORTING MATERIALS (ANNEXES)

The table 6 (below) lists the supporting materials proposed for the implementation of the TS-CBP. End-users may as well further develop additional materials to best fit the setting of the anticipated programme.

Table 6 – Cities2030 supporting materials for the TS-CBP

Supporting material	Short description
Sustainable food system assessment cities2030 materials	Place-based need analysis assessment from WP-3 survey format
Technology and social innovation training module template	Table format for the detailed description of training modules
Enhancement framework template	Table format for the detailed description of enhancements

TRAINING MODULE TEMPLATE FOR Cities2030 CAPACITY BUILDING PROGRAMME FOR POLICY INNOVATION

1. FRAMEWORK

Cities2030 partner	<i>Extended legal name and position in the GA</i>
Other organisations involved (design, training, etc.)*	<i>For example, in Turkey all training modules are co-created and practices are organised systematically with 1) a research body 2) a city 3) a business and 4) a Civil Society Organisation (CSO) or Community-Based Organisation (CBO)</i>
Title	<i>Suggested to better recognise and “brand” the training session and compare it with other</i>
Focus area	<i>One of Cities2030’s focus areas, see Figure 3.1a of the document “Policy co-creation capacity building programme” (D4.1)</i>
Unit of Learning outcome	<i>For instance, “Unit 1 – Policy” or “Unit 2 – Production, Policy”, or “Unit 10 Livelihoods, Policy”</i>
Language	<i>Either country’s language or English, or any other languages, for example in Turkey it is done in Turkish and Arabic</i>
Synchronous sessions	<i>For instance, if one of the steps of the present training session is done at the same time with a step of another training session</i>
Correlated sessions	<i>For instance, if one of the steps of the present training session is correlated with a step of another training session</i>
Target group	<i>Identified per the project definition, see Figure 2 of the document “Policy co-creation capacity building programme” (D4.1)</i>
Sector	<i>For instance, “farmers of vegetables” or “cash carry” or “hospitality” or “civil society” or “policy-makers”, etc.</i>
Pre-requisite	<i>For instance, if the participants must read specific materials, or participate to a specific event (other training sessions, etc.)</i>
English level (if applicable)	<i>For instance, “not applicable”, or, if applicable “advanced” or “average” or “basic”</i>
Main resources	<i>One or two major supporting material such as a book, or a paper, etc.</i>
Steps	<i>1) To be completed 2) To be completed, etc.</i>

* as Associated Partner e.g., “Alliance” partner registered in the project “CRFS Alliance” platform/panorama (community, synergies, good practices, observatory, etc.)

2. LEARNING SEQUENCE

		Unit of Learning outcome**	Description	Ressources and materials	Role of the trainer*
SESSION 1	Title : Format : <i>on site / online</i> Duration : <i>in minutes, max 55 min.</i> Specifics: <i>if applicable, anything specific and for example learners will use their Smartphones, etc.</i>	<i>At the end of the session, the learner will be able to...</i>	<i>Overall description of the training session (comparable to an executive summary)</i>	<i>Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session</i>	<i>Short explanation of the role of the trainer** before, during and after the session</i>
SESSION 2	Title : Format : Duration : Specifics:				
SESSION 3	Title : Format : Duration : Specifics:				
SESSION 4	Title : Format : Duration : Specifics:				

* Other definitions: pedagogical objective(s)

** Or educator at large e.g., teachers, mentors, facilitators

Capacity Building Programme for Policy Innovation (P-CBP)



Belgium

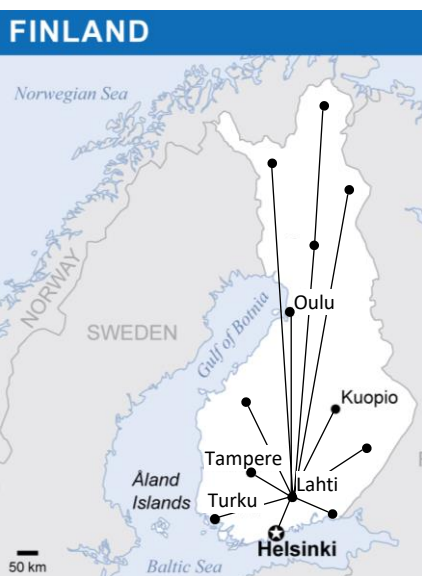
The Policy-driven Capacity Building Programme implemented in Belgium is facilitated by VIVES University of Applied Sciences (Hogeschool VIVES)

[Contact the facilitator](#)



Turkey

[Contact the facilitator](#)



Smart & Lean



SMART & LEAN HUB OY (P14), together with the other partners situated in Finland, and also with their corresponding active community of practice

1

P14 opens/animates one or more topics in the 'Cities2030 Community' platform to trigger the co-creation of training modules

2

P14 supports the participative production of one or more training modules

3

P14, together with all participants, delivers one or more training modules in the project website

Topics about the production of one or more training modules are triggered by candidate end-users, via the project's community of practice platform 'Cities2030 Community'



Candidate end-users lead and animate participative production processes and deliver templates and [html] provisions in specific languages via the project website dedicated page for the project CBP



Training modules provisions in [html] format in specific languages are available in the project website



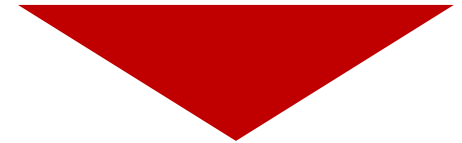
Training modules are enhanced by the community of practice at large and may be the subject of change



Candidate end-users provide feedback on the original framework of the training module via the project's community of practice platform 'Cities2030 Community'



Candidate end-users access the website and use the training modules to practice the P-CBP with customary settings to answer to place-based and specific needs



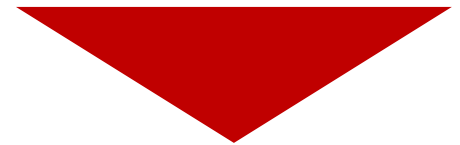
Topics about the production of one or more training modules are triggered by candidate end-users, via the project's community of practice platform 'Cities2030 Community'



Candidate end-users lead and animate participative production processes and deliver templates and [html] provisions in specific languages via the project website dedicated page for the project CBP



Training modules provisions in [html] format in specific languages are available in the project website



Training modules are enhanced by the community of practice at large and may be the subject of change



Candidate end-users provide feedback on the original framework of the training module via the project's community of practice platform 'Cities2030 Community'



Candidate end-users access the website and use the training modules to practice the P-CBP with customary settings to answer to place-based and specific needs

CRFS Living Lab

Technology and social innovation Capacity Building Programme (TS-CBP)

Training

Training of
trainers

Need-based
training

Knowledge sharing
Resources sharing
Know-how transfer

Other types of
TS-CBP (food
related sphere)

Technical
advisory support

Knowledge
transfer
mentoring

Other
supporting
methodology

Implementation
External setting
«In-house» setting

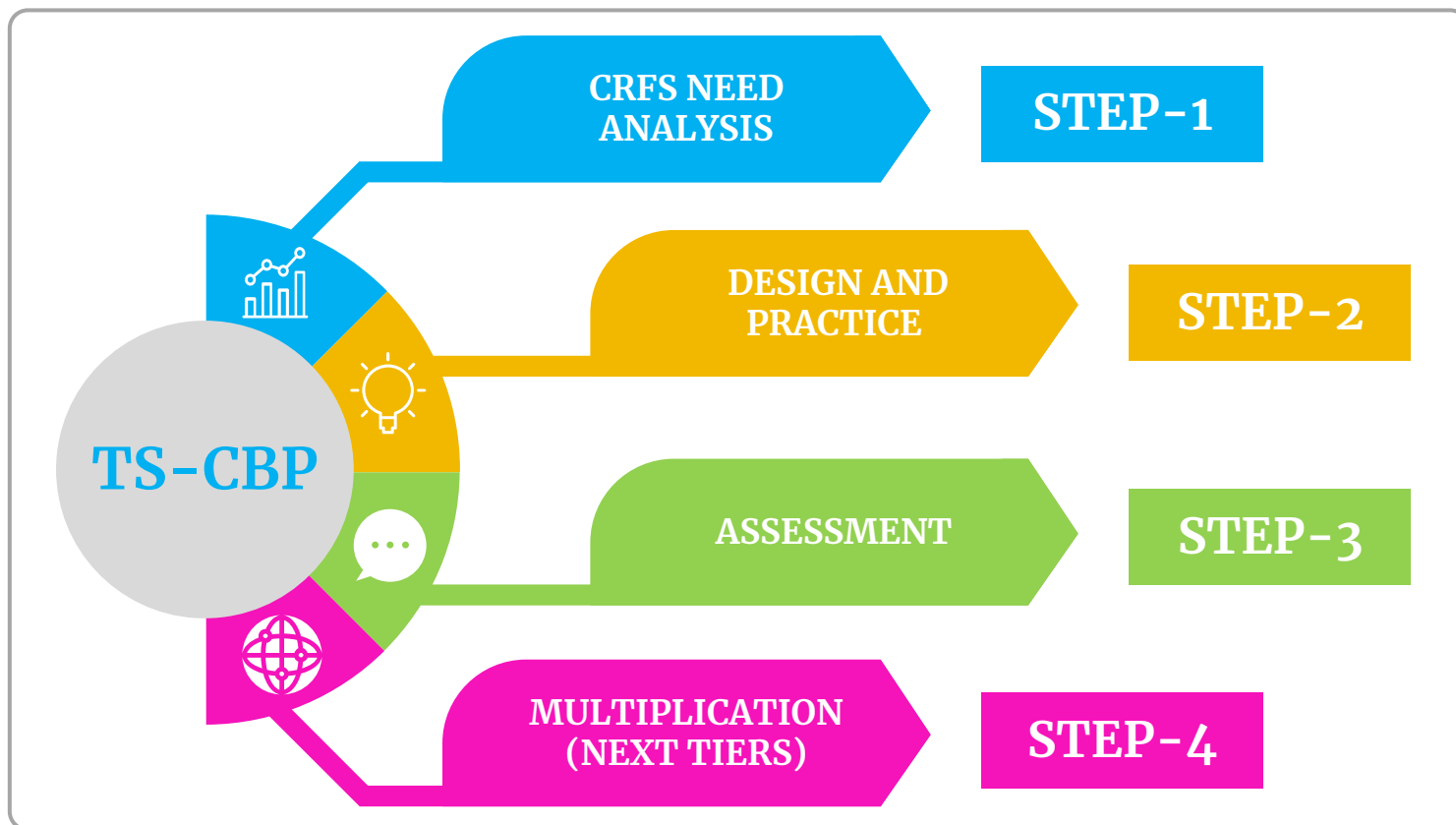
System
Thinking
methodology

2. TRAINING MODULE

		Unit of Learning outcome**	Description	Ressources and materials	Role of the trainer*
SESSION 1	Title : Format : on site / online Duration : in minutes, max 55 min. Specifics: if applicable, anything specific and for example learners will use their Smartphones, etc.	At the end of the session, the learner will be able to...	Overall description of the training session (comparable to an executive summary)	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	Short explanation of the role of the trainer** before, during and after the session
SESSION 2	Title : Format : Duration : Specifics:				
SESSION 3	Title : Format : Duration : Specifics:				
SESSION 4	Title : Format : Duration : Specifics:				

* Other definitions: pedagogical objective(s)

** Or educator at large e.g., teachers, mentors, facilitators



1 - Vulnerabilities
Characterize vulnerabilities
(propagation pattern,
impact)

T32 - P22 MATIS
D3.2 – P33 IVM

T3.3 - P16 TTZ
D3.2 – P13 AGRIA

2 - Obstacles
Characterize obstacles to
sustainable CRFS in identified
food supply chains

3 - Policy
Policy life cycle examinations,
policy lab prototype
and CRFS Observatory

T35 - P1 UNVE
D3.5 – P38 IUAV

T3.6 – P25 LLF
D3.6/7 – P5 IAAD

4 - Tech. Bus. Soc.
Examination of
innovation landscape
and living lab prototype

5 - ICT
Data-driven CRFS
management system
ideation

T3.7 - P20 UPM
D3.8 - P20 UPM

1. TRAINING MODULE

Cities2030 partner	<i>Extended legal name and position in the GA</i>
Other organisations involved as training entity	<i>For example, in Turkey all training sessions are organised systematically with 1) a research body 2) a city 3) a business and 4) a CSO or CBO</i>
Other organisations involved*	
Title	<i>Suggested to better recognise and “brand” the training session and compare it with other</i>
Focus area	<i>One of Cities2030’s focus areas, see Figure 3.1a of the document “Policy co-creation capacity building programme” (D4.1)</i>
Unit of Learning outcome	<i>For instance, “Unit 1 – Policy” or “Unit 2 – Production, Policy”, or “Unit 10 Livelihoods, Policy”</i>
Language	<i>Either country’s language or English, or any other languages, for example in Turkey it is done in Turkish and Arabic</i>
Synchronous sessions	<i>For instance, if one of the steps of the present training session is done at the same time with a step of another training session</i>
Correlated sessions	<i>For instance, if one of the steps of the present training session is correlated with a step of another training session</i>
Target group	<i>Identified per the project definition, see Figure 2 of the document “Policy co-creation capacity building programme” (D4.1)</i>
Sector	<i>For instance, “farmers of vegetables” or “cash carry” or “hospitality” or “civil society” or “policy-makers”, etc.</i>
Pre-requisite	<i>For instance, if the participants must read specific materials, or participate to a specific event (other training sessions, etc.)</i>
English level (if applicable)	<i>For instance, “not applicable”, or, if applicable “advanced” or “average” or “basic”</i>
Main resources	<i>One or two major supporting material such as a book, or a paper, etc.</i>
Steps	<i>1) To be completed 2) To be completed, etc.</i>

* as Associated Partner e.g., “Alliance” partner registered in the project “CRFS Alliance” platform/panorama (community, synergies, good practices, observatory, etc.)

2. TRAINING MODULE

		Unit of Learning outcome*	Description	Ressources and materials	Role of the trainer**
SESSION 1	Title : seafood production in Turkey Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand the current situation of seafood related value chains in the Province of Muğla (Turkey) and how corresponding supply chains are structured in CRFS	The learners are presented with data organised in a slideshow during the first 30-35 minutes, then they are invited to debate on key findings to explore drivers for sustainable sea food production in Turkey	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	The trainer circulate the material via email prior to the session so that learners familiarise with the supporting resources, and organise a virtual meeting ante and post training session
SESSION 2	Title : technology for seafood 1 Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand how technology may facilitate the production of seafood in the Province of Muğla (Turkey) in a sustainable way, and how it connects with FOOD2030 policy (four pillars)	The learners are presented with use cases organised in a slideshow during the first 30-35 minutes, then they are invited to debate on possible ways to for the sustainable production of sea food in in the Province of Muğla	5 use-cases of small-scale seafood production in Turkey	The trainer inform about the key thematic of the use cases via the distribution of a short note/outline of the use cases
SESSION 3	Title : technology for seafood 1 Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand how technology may facilitate the production of seafood in the Province of Muğla (Turkey) in a sustainable way, and how it connects with FOOD2030 policy (four pillars)	The learners are presented with use cases organised in a slideshow during the first 30-35 minutes, then they are invited to debate on possible ways to for the sustainable production of sea food in in the Province of Muğla	3 use-cases of large-scale seafood production in Turkey	The trainer inform about the key thematic of the use cases via the distribution of a short note/outline of the use cases
SESSION 4	Title : seafood and well-being Format : on site / online Duration : 55 minutes Specifics : CRFS-LL organised in the facilities of the company Hatko, Muğla, Turkey	At the end of the session, the learner will be able to understand more in detail how technology for the sustainable production of seafood in the Province of Muğla (Turkey) connects with the "nutrition" pillar of FOOD2030	The learners are presented with data organised in a slideshow during the first 30-35 minutes, then they are invited to debate on key findings to explore drivers for public awareness-raising on the thematic	Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session	The trainer circulate the material via email prior to the session so that learners familiarise with the supporting resources, and organise a virtual meeting ante and post training session

* Other definitions: pedagogical objective(s)

** Or educator at large e.g., teachers, mentors, facilitators

3. MEDIA MATERIAL

3.1 Webliography

Be so kind as to add here all pertinent weblink related to the training session

3.2 Media materials

Be so kind as to use the link below (Google Form) to deliver all pertinent and public information on the training sessions.

@Codrin missing link of one of the Google Form created

4. REPORTING

To be confirmed by P2

TRAINING MODULE TEMPLATE FOR Cities2030 CAPACITY BUILDING PROGRAMME FOR TECHNOLOGY AND SOCIAL INNOVATION

1. FRAMEWORK

Cities2030 partner	<i>Extended legal name and position in the GA</i>
Other organisations involved (design, training, etc.)*	<i>For example, in Türkiye all training modules are co-created and practices are organised systematically with 1) a research body 2) a city 3) a business and 4) a Civil Society Organisation (CSO) or Community-Based Organisation (CBO)</i>
Title	<i>Suggested to better recognise and “brand” the training session and compare it with other</i>
Focus area	<i>One of Cities2030’s focus areas, see Figure 3.1a of the document “Policy co-creation capacity building programme” (D4.1)</i>
Unit of Learning outcome	<i>For instance, “Unit 1 – Policy” or “Unit 2 – Production, Policy”, or “Unit 10 Livelihoods, Policy”</i>
Language	<i>Either country’s language or English, or any other languages, for example in Türkiye it is done in Turkish and Arabic</i>
Synchronous sessions	<i>For instance, if one of the steps of the present training session is done at the same time with a step of another training session</i>
Correlated sessions	<i>For instance, if one of the steps of the present training session is correlated with a step of another training session</i>
Target group	<i>Identified per the project definition, see Figure 2 of the document “Policy co-creation capacity building programme” (D4.1)</i>
Sector	<i>For instance, “farmers of vegetables” or “cash carry” or “hospitality” or “civil society” or “policy-makers”, etc.</i>
Pre-requisite	<i>For instance, if the participants must read specific materials, or participate to a specific event (other training sessions, etc.)</i>
English level (if applicable)	<i>For instance, “not applicable”, or, if applicable “advanced” or “average” or “basic”</i>
Main resources	<i>One or two major supporting material such as a book, or a paper, etc.</i>
Steps	<i>1) To be completed 2) To be completed, etc.</i>

* as Associated Partner e.g., “Alliance” partner registered in the project “CRFS Alliance” platform/panorama (community, synergies, good practices, observatory, etc.)

2. LEARNING SEQUENCE

		Unit of Learning outcome**	Description	Ressources and materials	Role of the trainer*
SESSION 1	Title : Format : <i>on site / online</i> Duration : <i>in minutes, max 55 min.</i> Specifics: <i>if applicable, anything specific and for example learners will use their Smartphones, etc.</i>	<i>At the end of the session, the learner will be able to...</i>	<i>Overall description of the training session (comparable to an executive summary)</i>	<i>Short list of resources such as books, reports, papers, articles, use-cases, projects, and miscellaneous sources to support the training session</i>	<i>Short explanation of the role of the trainer** before, during and after the session</i>
SESSION 2	Title : Format : Duration : Specifics:				
SESSION 3	Title : Format : Duration : Specifics:				
SESSION 4	Title : Format : Duration : Specifics:				

* Other definitions: pedagogical objective(s)

** Or educator at large e.g., teachers, mentors, facilitators



3. MEDIA MATERIAL

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4. REPORTING

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