cities2030

D4.3
Pilot cities policy action plans

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Document short abstract	Deliverable 4.3 describes the Policy Lab creation process and results. Supportive materials have been developed in the form of a step-by-step guide that the labs can follow to guide them through the process of lab creation, consisting of: - Setting up a stakeholder network - Assessing the policy context in which the lab operates - Formulation of a vision for the policy lab - Formulation of SMART goals and SMART tasks D4.3 builds upon the approach developed in D4.2 and the WP4 support model consisting of the policy lab seminar series, a peer network for policy labs and the development of action plan templates. Combined these form an integrated WP4 approach and provide support to the policy labs in their development.

Disclaimer

Document history

Version	Date	Main Changes	Author
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1. Introduction

Food production faces several challenges to secure future production and adequate nutrition. The challenges are multifaceted, consisting of resource depletion due to the resource intensive farming systems commonly used. This contributes to, amongst others, GHG emissions, a leading cause of climate change. Additionally, health and ethical aspects are linked to food production sustainability. This is captured by hunger and obesity; both are linked to malnutrition and attributed to inequality in access to food. The aspect of equality extends to providing adequate nutrition to future generations. Urban areas are most affected by inequality in access to food, caused by socioeconomic differences and higher demand for resources (Ruel, 2020). Within Europe the main driver of food insecurity has been identified to be inequality in access to food rather than a lack of food availability (Roberts, 2015).

Cities 2030 is a project within Horizon 2020 and the Food 2030 Policy Framework. In this context, CITIES2030 aims to contribute to transforming the European food system through the use of City Region Food System (CRFS) labs. These labs pilot several ways to restructure food system production, transport and recycling. It aims to utilize short supply chains and engagement of consumers, industry, innovation and research institutes across multiple disciplines. The project aims to achieve five specific objectives, being (1) secure healthy and sustainable food, (2) stop food poverty and insecurity, (3) protect and preserve natural resources, (4) enhance circularity and local economic benefits and (5) develop food culture and skills. The scope of these objectives indicates the multi-faceted and interconnected nature of food-system issues and their related solutions.

Addressing food system challenges requires the involvement of stakeholders from multiple sectors, with varying levels of expertise, interest, involvement and mandate in the issues addressed. Policy that is specifically designed to govern the food system is practically non-existent on the local level (Pothukuchi & Kaufman, 1999) partially due to a lack of responsibility for food systems governance at the regional level. Therefore, this process is typically initiated by stakeholder dialogue and assessment of policy options. The policy lab contributes to this process by developing policy options, facilitating the assessment of policy options and evaluating options through policy analysis. This process will vary strongly across labs as it is dependent on the relevant actors involved in the region, the system characteristics of the food system and the political/governance context within which a food governance strategy is being developed and/or trialled (Forster & Escudero, 2014).

2. Purpose of Deliverable

The overall aim of WP4, in which this deliverable is nested, is to activate all food system partners to pilot policy-based solutions for CRFS transformation. This process is facilitated by capacity building, policy co-creation processes and policy lifecycles to assess food system transformation by policy labs. These policy labs are to design, pilot, validate and deploy sustainable innovative food system-related policies. The solutions that the pilot experiments

should fit in the context of the pilot and transnational CRFS-related programs and strategies such as Food2030 and the UN SDG goals. In addition, the pilots build onto existing frameworks, such as the CRFS approach and MUFPP+. The building blocks of the pilot policy labs are set out in this section and placed within the goals of WP4, consisting of the CRFS lab approach, the theoretical framework on which the policy lab approach is built and finally the position of the deliverable within the overall WP and the function of WP4 activities in supporting the pilot labs in efficient execution of CRFS pilots.

2.1 CRFS Pilot Cities

CRFS labs within CITIES2030 have two primary purposes. The ultimate goal of CRFS labs is to assess the feasibility and effectiveness of innovation and policy solutions in addressing food system challenges. Each pilot assesses solutions that are the best fit for their specific context. Within a wide array of tasks that CRFS labs perform, this deliverable focuses on the policy aspect of food labs.

Secondly, the experiences of the CRFS labs currently piloting solutions are intended to form a base on which cities and regions can build policy labs moving forward. The scope of CITIES2030 is planned to increase as it progresses. At the time of writing this deliverable (winter 2021/22) the project is ongoing for one year and sixteen labs are active. It is expected that the number of labs will increase during the progression of the project. This lab guide builds upon the experiences of the MUFPP and CRFS pilots and the first Cities2030 labs and aims to facilitate those policy labs that join Cities2030 in the future in the planning and setting up of the policy lab and evaluating its outcomes.

Table 1 Requirements and Activities within WP4

Work Package Requirement	Work Package Activities
WP4 ensures an adequate activation of all involved participants from the food systems and ecosystems, building capacities to facilitate an efficient co-creation process. WP4 substantially leverages learning from the MUFPP+ securing synergies and correspondence with key findings. WP4 delivers policy life cycle assessments within labs, to design, pilot in real scale, validate and deploy sustainable CRFS policies which meet the EU FOOD2030 and UN-SDG 11 policy framework. WP4 explores policy-framed and technology-based scenarios, builds competences at city level and deploy	Food systems actors are activated within the context of CRFS policy labs. The approach developed within WP4 heavily builds upon the MUFPP+ and introduces system resilience and the CRFS approach as main elements of policy labs. The guide presents system thinking and policy life cycle assessment as core methods, placed within the context of EU and UN strategies. This deliverable fulfils the task of providing an initial guide for follower labs that support policy life cycle assessments within labs to pilot sustainable CRFS policies. The guide presented in this deliverable ensures the

policies at regional level towards compliance with the aforementioned policy framework. Likely WP1-6, WP4 foster synergies with comparable developments. All in all, WP4 generates an overarching development paradigm driven by resilience, focusing on reframing policy areas within the methodological framework of city resilience, up-taking from the MUFPP+.	adoption of the MUFPP+ and CRFS approach as they are core elements of the approach presented.
Task Requirement	
Co-creation and implementation of a deployment action programme to reach 50 pilot cities by 16.10.2024. Production of a series of actionable instruments whose core is structured by a multiplier team in all participating countries. The programme also emvompasses material for training and a practical roadmap transferable to a vast majority of settings (climate, typography, etc.) yet tailored for specific CRFS setting depending on the characteristics of the food system arena. This provision will be accessible online.	This deliverable supports the WP4 deployment programme by providing a step-by-step action plan that supports follower labs in their setup and pilot activities. The initial guide is based on the MUFPP+ and CRFS frameworks and will be expanded by pilot policy lab experiences and approaches to identify guidelines for specific pilot settings and contexts. This will support follower labs in their processes of setting up, executing and validating policy pilot activities that are in line with the Cities2030 approach and tailored to the CRFS-specific context.
Deliverable Requirement	Activities
A comprehensive provision gathered in a digital format and incorporating a set of information describing with precision the programme to implement the pilot in the city or regions.	Expansion of MUFPP+ framework in a step-by-step action plan for policy labs. This document aims to support policy labs in their creation by providing direction to their efforts through situation analysis, creation of a vision and goal definition amongst others. This process is supported by a seminar series through identifying best practices, as well as validation and extension of the methods. The labs will provide a lab action plan in which they set out their context, aims and activities to reach those aims, which will be reported in this deliverable.

Table 1 lists the requirements of the work package and the actions that have been taken within WP4, indicating the relevance of this deliverable within the task and work package. The work package aims to activate food labs and provides guidance in their efforts through capacity building and supporting the policy lab creation process. This deliverable targets (future) CRFS labs in providing an action plan for lab development. This pilot lab guide sets out a pathway for future actors to follow in a step-by-step approach to support them in the formation of a policy lab and validation of food system policies. The steps are based on existing CRFS programs (FAO & RUAF, 2018) and the Milan Urban Food Policy Pact (MUFPP, 2015). This approach will be further advanced and validated using the experiences of the labs currently involved with CITIES2030 with the final goal of facilitating future endeavours to trial food system policies. This is an ongoing process, and the final deliverable will support future food labs in setting up a policy lab.

2.2 Support in the Organization and running of CRFS Labs

The overarching goal of the step-by-step guide is to assist the policy lab throughout the entire process; from assessing topics and defining goals to the execution of the lab as well as defining goals, policies and proving value for continuation of successful pilots. Additionally, the guide aims to support labs in their understanding of the overall project, to promote cooperation and integration between deliverables and tasks and to provide standardized reporting procedures, which in turn assists labs in documenting progress.

The pilot action plans that result from following the guide will assist policy labs to build upon lessons learned by CRFS policy labs, find common ground with labs operating in a similar context and anticipate issues that may arise during the pilot. These lessons will be transposed in the policy lab blueprint (D4.4) going forward. This newly found knowledge will promote efficiency in the execution of the pilot and lead to more productive trials. Additionally, although the focus of the step-by-step guide is to serve the labs, it may support analysis at later stages of the project through standardization of the CRFS lab start-up process which facilitates assessment of the policy context elements affecting the creation and outcome of effective measures.

2.3 Position of deliverable within CITIES2030

The overall project goal of Cities2030 is to assess the role of city-regions as agents of positive change, using innovation and policy as tools to reshape the food system landscape. The added value of the project lies in its bottom-up approach; rather than supporting the advancement or implementation of new innovative developments to be adopted across industries or society, it aims to implement small systemic changes at the local (city-region) level with strong citizen and stakeholder involvement. The resulting pilots support the view of each urban food system as an unique system with interlinked components. Solutions to CRFS challenges are tailored to the region context and connected into a comprehensive strategy that contributes to increasing the resilience and sustainability of the region's food system.

Figure 1 Working Groups across Cities2030 Thematic

This deliverable has been developed by building upon activities in other CITIES2030 work packages; it is most strongly linked to activities in work packages three and five, although multiple connections exist across multiple tasks and deliverables.

2.3.1 Relation with work package three

Work package three provided the conceptualization of core elements of CRFS labs and introduced the data driven CRFS and systems thinking methodology. The delineation of the concepts of CRFS, living-and policy labs were explored in tasks 3.5 and 3.6 through a survey held amongst CRFS labs that mapped out the conceptualization of innovation and policy elements across the pilot labs. Additionally, a meeting was held between labs and work package leaders (WP3 and 4) to discuss further definition of living and policy labs. This discussion is ongoing to some extent and the innovation/policy lab distinction is iterative. The conceptualisation from work package three allowed work package four and five to continue to work on the policy element (WP4) and the innovation element (WP5).

2.3.2 Relation with Work Package Five

Work package five focuses specifically on supporting the development of innovation in food labs. Activities aim at identifying, structuring, and accelerating innovation processes by incorporating the design, pilot, validation and deployment of cutting-edge food-related technology. A capacity building program is being developed with the specific goal of supporting innovation piloting and a handbook has been developed that supports innovation

labs in the process of lab creation. The innovation labs ensure the involvement of innovation stakeholders in the policy labs and the assessment of technologies in food labs that stimulate the development of CRFS sustainability and resilience.

2.3.3 Position of Deliverable within Work Package Four

Within the broader context of Cities2030, work package 4 builds on the concepts of CRFS labs, data driven CRFS and systems thinking. The work package aims to support food labs in their process of creating and implementing solutions and the support of solutions through policy initiatives. It does this through a number of tasks and deliverables that are listed in table X.

Table 2 Tasks & Deliverables within WP4

Task		Deliverable	
4.1	Capacity building programme to foster learning for transformation	4.1	Training program "Policy co-creation capacity building program"
4.2	Policy life cycle assessment, co-creation, co-production, and piloting	4.2	Methodology "Guidelines for policies & pilots' development"
4.3	Deployment and multiplication	4.3	Step-by-Step Guide and policy lab action plans "Pilot city policy action plan"
		4.4	Policy lab blueprint "Blueprint for policies to generate sustainable CRFS"
		4.5	Action plan for each lab "Pilot city deployment programme and action plan"
4.4	WP4 specific impact monitoring and assessment implementation	4.6	Results "WP4-specific IMA reports"

Food system actors across CRFS systems are activated through the project pilots and more specifically, through three elements across the labs. First, actors are activated and informed through capacity building and training, which provides actors with the tools and information necessary to efficiently pilot relevant solutions. This is captured in T4.1 and D4.1. Second, the policy labs will assess the policy lifecycle to explore the policy making process within the pilots

regions. Supportive materials have been developed that aim to support CRFS actors to get an understanding of the relevant processes. These have been captured in activities executed under T4.2 and materials developed in D4.2. These activities and materials aim to support the policy labs in their approach, which in turn will facilitate the policy co-creation process captured in this deliverable. The policy lab step-by-step guide builds on the work completed in the tasks and deliverables of WP4 and describes the processes the pilot labs go through in setup, execution, and assessment of their pilot activities. The guide presented in this deliverable summarizes lessons drawn from desk research, literature studies and continuous learning from policy labs through the identification of best practices. These materials are compressed in one singular overview of the policy lab creation process in a structured format of a step-by-step guide. This guide and the feedback collected from pilot labs will contribute to the future development of the policy lab blueprint, the pilot action plans and the final impact reports from the policy labs.

2.3.4 Synergy across WP's

The work packages involved with the lab creation process aim to synergise the process across work packages to facilitate consistency across the project. WP3 introduced the diamond model and WP5, which focuses on the innovation aspect of labs, applies the diamond model. The materials developed within WP4, including D4.2 and the step-by-step guide (D4.3) adopted a structure similar to the diamond model to ensure consistency across the work packages for pilot partners.

The diamond model presents the lab creation process as consisting of separate phases, ranging from 0 to 5. Labs start by (0) gaining an understanding of the CRFS through assessing the CRFS as a system, identifying the trends, drivers and obstacles that characterise the CRFS, which forms the basis of the lab vision. Labs progress to (1) identify the challenge the lab will address based on this gained understanding through SWOT analyses. The (2) challenges are analysed and based on the outcome of this assessment (3) SMART goals will be defined. Execution of these goals consists of (4) experimentation with new solutions for CRFS along with data collection to support monitoring of activities and results. The final phase consists of (5) assessing the outcome of the experiment and concluding on the learnings and best practices of the lab process.

A vital aspect of this approach is the existence of diamonds i.e. data boxes. These boxes -that reflect the processes of understanding CRFS, analysing the challenge and experimenting with potential solutions for CRFS challenges- each contain a strong data element and a degree of data collection and analysis is part of these processes. The diamond model also indicates that the lab creation process is not necessarily linear. Interaction between the five phases is expected, particularly between the processes of challenge analysis and solution experiments. This interaction consists of intermediary results feeding back into challenge analysis and re-aligning the SMART goals according to lab insights. This feedback loop can lead to an iterative process and allows for an adaptive approach to formalising and executing lab activities.

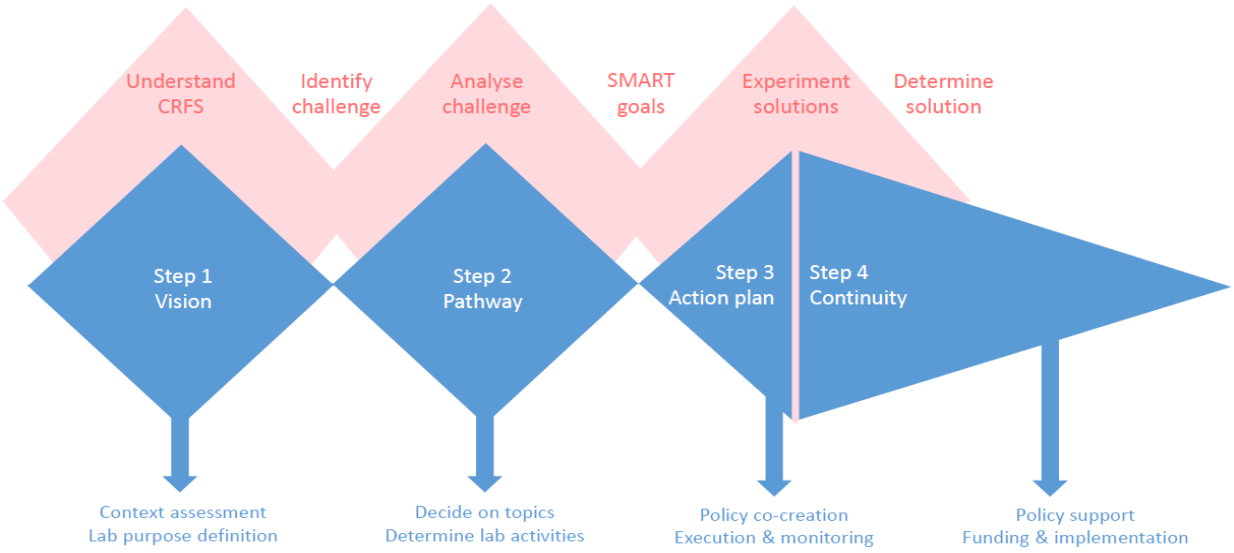

Figure 2 The relationship between Diamond Model (WP5) and Step by Step Model (WP4)

The approach taken in the policy labs is comparable to the diamond model in its core structure. The creation of policy labs is split into steps, which will be elaborated on in section 6 of this deliverable. However, it is important to recognise that activities across the steps overlap with the activities as presented by the diamond model. The step-by-step-guide starts with an assessment of the CRS context to define the lab purpose, i.e. understanding CRFS and identifying the challenge. The steps "pathway" and "action plan" describe the process of assessing and deciding upon the methods for analysing the challenge, leading to the defining of SMART goals. The execution of these plans leads to ex-ante policy assessment and finding support for continuation of policy implementation.

3. CRFS Policy context

Policy is an essential part of the governance processes guiding food system transformation that is required to ensure food security, food safety, environmental sustainability, community culture and public health (Vignola et al, 2021). Policy primarily has a supportive role in these processes.

3.1 Multilevel food Governance

The EU has responded to food system challenges through multiple policy frameworks aiming to transform the current system. The overall goal of Horizon 2020 is to stimulate the application of science and innovation to increase Europe's competition position, including addressing the food system by supporting the transition towards optimal use of biological resources and adequate social value.

The Food Policy Framework aims to tackle the multifaceted array of issues surrounding food and nutrition security through a systematic approach using research and innovation across the entire food chain to future-proof food systems to make them sustainable, resilient, diverse, inclusive and competitive for the benefit of society (European Commission, 2017). This is in line with the UN Sustainable Development Goals (UN, 2015).

The Farm to Fork Strategy aims directly to accelerate a transition towards a sustainable food system" that *works for consumers, producers, climate and the environment"* (European Commission, 2020). It touches upon elements of sustainable production and consumption, food security, reducing food waste and food fraud and stimulating research and innovation.

Active stakeholder involvement is desired under these strategies. Stakeholder inclusion with a balanced representation of stakeholders is crucial to the development of open, transparent decision making (Tanasescu, 2009). In addition, stakeholder involvement also allows for solutions to be formulated at a more granular level than the national or supranational European level.

3.2 Local level Governance & CRFS Approach

Food governance is going through a regionalisation process, driven by changes in the agri-food sector, market developments and a general recognition of the significance of local food systems for community, local economic development and contributing to decreasing the environmental impact of food systems (Little et al, 2012). This new-found institutional landscape focuses on the local and provides opportunities for the development of local identities and capacity building. Within this context of rising significance of the region in food system governance processes, the City Region Food System (CRFS) approach is evolving. The CRFS approach is used as a tool to assess the flow of resources, people and knowledge across

city-region boundaries and the role of policies in the supporting and steering of these processes.

The CRFS concept facilitates an integrated approach, allowing for procedures tailored to the CRFS that address resource flows across sectors, resource types and territorial boundaries. As such, the CRFS approach frames food policies through wide actor engagement across multiple sectors and supports policy co-construction of integrated policy solutions aiming for food sustainability.

4. Policy Lab Feedback & Support

4.1 Pilot City Feedback to Policy Lab Action Plan

Bilateral meetings were held at the start of the project to map interest areas and key tools used by partners. This information assists in assessing the role of policy in food system transformation processes and identifying potential bottlenecks and needs for support. Policy labs drew direct connections with local production and supply chains. A first element is the creation of short supply chains (Haarlem, Vicenza, Vidzeme, Murska Sobota). A second element of CRFS transformation is local and urban farming (Iasi, Vidzeme, Haarlem, Marseille, Bremerhaven). City-region food production includes greenhouse farming in an urban context (Inagro, Murska Sobota).

However, different reasons underlie these activities. For example, urban farming can stimulate local economic growth and reaching circular economy goals (Haarlem, Quart de Poblet). Simultaneously local production is in some cases stimulated to provide a general boost to local economic development to combat population drain, particularly in more rural regions (Troodos). In addition to this main focus, policy labs touch upon all Food2030 framework key priorities for food and nutrition; covering the aspects of nutrition, climate, circularity, innovation and policy.

4.1.1 Nutrition

With regard to nutrition, multiple partners focus on the health aspects of the food system by addressing the market and the public. Several partners address sale points, such as markets, public bodies and the hospitality sector (Murska Sobota). This exhibits overlap (or contrast) with economic interests and/or public procurement initiatives. Local and traditional food is promoted as a means to stimulate healthier dietary habits of the population (Vicenza, Murska Sobota). Dietary habits of the general population is also recognised as an element of dietary health by labs, and is addressed through education and training, for example through knowledge distribution and cooking classes (Velje, Marseille).

4.1.2 Climate

The theme of climate change is integrated throughout lab activities as sustainability is part of regions or national development plans (including Marseille). Pilots include the introduction of green spaces to stimulate biodiversity (Haarlem) and multiple urban farming initiatives. Local food production is considered a useful strategy to reducing the CO2 footprint of the regions CRFS. It is stimulated on the production side through carbon and heat capturing by urban greenhouses (Inagro). On the consumption side local food is stimulated by activities aiming to steer markets and increase public awareness through education and promotion.

4.1.3 Circularity

These activities are integrated with waste reduction and circularity and supported by the integration of innovation in the supply chain. Circularity is a much used term in the description of pilot focus and activities, although little activities are dedicated solely to stimulating circularity within the food system specifically. Mostly circularity is integrated into existing plans for reaching a circular economy. Related to circularity is food waste reduction, which is activated through increasing consumer awareness, improvement of logistics infrastructure and the implementation of circular economy models (Murska Sobota).

4.1.4 Innovation

The focus of policy labs is primarily on the policy arena, yet innovation plays a role in how food system transformation is achieved, and which activities policies are to support or steer. Innovation activities centre around waste reduction (Haarlem), the application of AI and analytics for food system modelling to reduce environmental impact (Marseille) or blockchain. Partners describe the application of innovation development and industry innovation uptake as potential policy goals (Quart de Poble, Murska Sobota, Inagro, Bremerhaven).

4.1.5 Policy

Policy plays a vital role in CRFS transformation by influencing the CRFS context of legislation, funding, strategies, guidance, promotion, and communication surrounding food system transformation. Labs include Food Councils as one of the ways to promote public inclusion and facilitate bottom-up policy creation to support the CRFS transformation. Policy functions to support innovation uptake and steer developments. This is valuable for CRFS considering that sustainable food technologies, such as food waste reduction or alternative food production and distribution systems, are often not economically viable. Market actors and public actors are recognised as vital actors to include in the development of strategies that aim to stimulate these goals and developments, leading to a participatory multi-actor approach including actors across the entire agri-food chain.

Bilateral policy lab meetings clarified the role of policy in food system transformation and demonstrated that CRFS level policies address welfare, both on the social and economic welfare aspects. Social welfare is stimulated by urban community farming (Haarlem) and urban greenhouses (Inagro), with the goal of community empowerment (Haarlem, Seinajoki,

Vicenza). Community building can assist the integration of vulnerable groups (Quart de Poblet, Marseille). Additionally, food culture is promoted with particular attention to health (Seinajoki, Vidzeme, Murska Sobota, Vicenza, Bremerhaven). Many of these efforts include education, through awareness building and education of the public on food production (Haarlem, Inagro, Vidzeme). Particular attention goes out to reaching equality in access to food across all social groups (Haarlem, Vicenza, Marseille), with special attention for children (Seinajoki), the elderly (Bruge, Bremerhaven) and immigrants (Marseille). The societal value of food system transformation processes at the local level typically includes bottom-up processes and the inclusion of the public in food systems.

Economic welfare in CRFS transformation is for a large part integrated into existing general urban development plans (Haarlem, Iasi, Murska Sobota), including existing circular economy plans (Haarlem). Policy labs demonstrated an overall recognition of the potential that new markets hold that are characterised by high sustainability and local (i.e. city-region) production. Due to a perceived higher quality of local and sustainable food, these market segments hold potential higher profit margins, thereby stimulating the development of a sustainable food sector that, in turn, may aid the development of the local economy (Haarlem, Murska Sobota). Public attitudes and consumer knowledge are recognised as being directly related to this aspect of food system transformation (Marseille, Bremerhaven). The development of sustainable businesses is stimulated overall (Seinajoki, Pollica, Haarlem), particularly the hospitality sector (Haarlem, Bruge, Vidzeme, Murska Sobota). The CRFS approach allows pilots to address the social and economic aspects of welfare, focusing on those elements most applicable to their CRFS.

4.2 Support for Policy Lab Action Plan

The policy labs are asked to proceed with the planning and setting up of their labs as soon as the step-by-step guide material has been shared through the seminar series and the correlate platform. The formulation of vision and action plan supports the design of focused and impactful lab activities that are tailored to the specific context in which the policy lab operates. The supporting materials developed within this deliverable are extensive in nature as to assist each lab in its creation process. Considering the unique context every policy lab operates in, the materials support a wide array of activities. Labs are therefore advised to judge the applicability and necessity of each activity defined per step, and select the information that applies to their specific context. The policy lab action plans should be of a simple nature so the lab can focus on executing the activities and complete the plan in a timely manner.

Table 3 Support for Policy Lab Action Planst: The WP4 Seminar Series

Seminar topic	Date
Introduction of the action plan and support model	September 2021

Policy Lab vision	November 2021
Policy lab application and signature of the MUFPP	January 2022
Policy Lab Pathway to Action	June 2022
Policy Lab Action Plan	August 2022
Policy Labs Peer Sharing	November 2022
On-site: Policy Lab Festival	February 2023

The policy labs are supported in the creation of lab action plans. This support model developed in WP4 consists of several elements, out of which the main support in defining policy lab action plans consists of seminars that are open to all labs and relevant partners. This seminar series served two purposes; on the one hand it informed policy labs on the status of deliverables and provided labs with detailed information on the step-by-step approach; on the other hand it informed work package leaders on the strengths of the guide and identified opportunities for improving the materials.

These seminar series covered several topics, listed in table 3. The series initially aimed to cover one step (as described in the step-by-step guide) per seminar session. This would provide labs with the necessary information as they progressed through the process of lab creation and execution. This approach was believed to be particularly valuable while the step-by-step guide was under development, so conveying relevant information directly to labs could well avoid delays in the process of lab setup and planning. This approach was partially followed, as the seminars adapted to the needs of policy labs as they arose. At the start of the series (September 2021), a seminar session was held to introduce the overall approach and the support model with the aim of informing labs on the overall goals and objectives of the work packages and the role of policy labs therein. At a later stage (January 2022), feedback from policy labs elucidated that labs were lacking information and instructions on the application of the MUFPP framework and the process of signing the MUFPP Declaration.

Therefore, the seminar series were adjusted and a separate session was devoted to the application of the MUFPP to Cities2030 policy labs. Subsequent sessions covered the action plan steps to support policy labs as they progressed through the process of action plan development. The CRFS labs could present their lab activities and partake in knowledge-and experience sharing in an on-site event in Haarlem where the consortium congregated to share lab activities and take part in multiple workshops. Future seminar sessions will provide support to labs in activities focussing on identifying and engaging in follower labs, as well as providing structure and depth to the peer groups that have been formed on CRFS thematic.

Additional materials have been developed to provide support to policy labs. This deliverable sets out the process of lab creation in a detailed step-by-step manner. Templates will support the labs in following the step-by-step guide in an efficient manner. Particularly the *Action Plan* template will facilitate labs in producing an effective deliverable. A benefit of using templates is the consistency they provide in the reporting across labs in format and approach. This consistency will support project-wide reporting of lab activities and results as well as research activities at a later stage by facilitating comparative assessment. The use of the templates was facilitated by the seminar series, in which the templates were introduced to the labs, the relationship between the templates and the step-by-step guide was explained and general instructions for filling out the templates were provided. A weekly call-in hour was also organised, in which labs could contact P33 IVM to discuss the step-by-step guide and the application of the templates to the labs unique development path. Additional mentoring activities focusing on the use of the templates will take place per need and request.

5. An overview of the step by step guide

The purpose of the CRFS labs is to identify methods to support the transformation of food systems to be more "*sustainable, resilient, diverse, inclusive and competitive for the benefit of society"* (European Commission, 2017). In order to reach this goal, key steps and resources are defined in the context of the Milan Urban Food Policy Pact (FAO & RUAF 2019), which this guide heavily draws from.

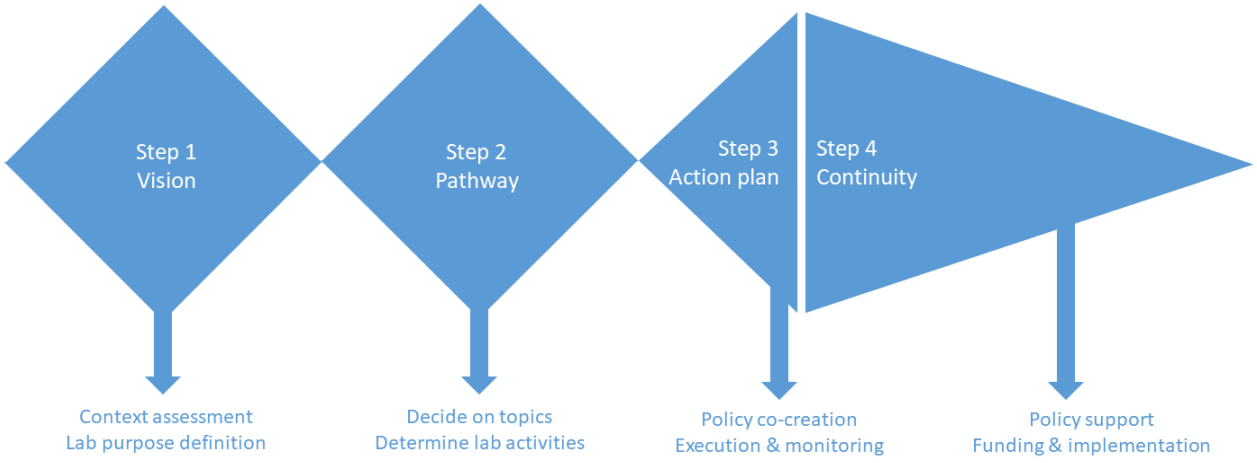

Figure 3 The Step by Step Model (WP4)

Table 4 Overview of Lab activities across Development Phase and Available Resources

Lab Development phase	Activities	Resources
Step 0 - Setting up the lab		
Assess available tools	Explore availability of data	
	Set up team	
	Assign roles	
	Map stakeholders	
	Engage in training	D.4.1 "Policy co-creation capacity building"
Step 1 - Vision		
Assess context	Situation analysis	Policy lab seminar session Nov. 2021
	Assess CRFS potential	Template 1
Define purpose	Develop a narrative	
	Develop work plan	
Step 2 - Pathway Development		
Resources	Data collection	Policy lab seminar session June 2022
Decide on topics	SWOT	Template 2
	Indicator selection criteria	
	Set priorities	
	Define boundaries CRFS	
Determine activities	Define SMART goals	
	Create agenda	
Step 3 - Action Plan		
Execution	Reiterate CRFS specific context	Policy lab seminar session Aug. 2022
	SMART goal tasks	Policy lab seminar session Nov. 2022
	Prioritize tasks	Template 3
	Deadlines & milestones	
	Identify resources & indicators	
	Plan visualization & communication	
	Plan monitoring & evaluation	
Policy lab approach	Co-creation process	
	Data & communication	
Step 4 - Scaling up & continuity		
Policy support & planning	Policy analysis	
	Policy formulation/ revision	
	Policy integration	
	Policy outreach & buy-in	
IMA	Impact Monitoring Assessment	WP1 + WP4 IMA deliverables
Funding	Assess societal costs and benefits	
Implementation	Food networks	
	Food governance structures	
	Capacity development	

The process of CITIES2030 framing of CRFS labs is depicted in figure 3. The overarching goal of this process is to assess policy actions to support the transformation of regional food systems towards more sustainable and resilient CRFS that provide equal access to a healthy diet for the public. Each step in this process represents a phase in lab development and addresses a specific goal:

Step 0: Lab setup. Activities in the lab setup phase aim at the initial organization of lab resources. This phase is not included in the step-by-step model as many partners will have a certain method of organization in place when they join Cities2030. However, this phase is described in the detailed guide to assist novel labs that may need to go through this process. Labs organize their setup by assessing available personnel, skills, financial resources, data and an assessment of their stakeholder network and building skills within the team where necessary.

Step 1: Vision. The process of defining a lab vision aims at gaining an understanding of the concept and application of CRFS labs. This includes forming holistic insights into what a CRFS lab entails; viewing it as a system by which stakeholder inclusion and piloting policy instruments inform the policy creation process. The policy context and urban-rural food system interdependencies that are specific for the CRFS lab are set out and assessed. This assessment functions as a base on which the lab narrative can be built and a work plan can be developed.

Step 2: Pathway development. The second step focuses on the identification of the challenges CRFS lab may face. The lab builds onto the lab vision through performing a situation analysis (SWOT) that provides more granular insight into which policy themes require action and which requirements and bottlenecks can be expected within those themes. The identified challenges will need to be analyzed in their current state to provide insights that support the selection and trialing of policy instruments. Linking lab activities directly to the assessed challenges supporting the creation of SMART goals.

Step 3: Action plan. The final planning step aims to list the key tasks and prioritises them according to the SMART goals defined in the previous phase. The action plan provides an overview of the tasks and processes that will lead to execution of pilot goals. The selection of policy instruments is highly dependent on the findings from the SWOT analysis and the SMART goals that have been defined. Experimenting new solutions will require constant monitoring of the process. Documentation of the learning process is required to assess the outcomes of the CRFS lab.

Step 4: Scaling up & continuity. The final lab phase concentrates on assessing lab results and aims at realizing continuity of those activities that have proven successful in the CRFS. This includes the identification of best practices, based on policy analysis and integration of policy results into food networks and food governance structures existent within the CRFS. As a part of this process, the balance between the societal costs and impacts of each activity should be assessed to come to informed decisions regarding the long-term impact on the CRFS.

6 Step 0: Set up the lab

Table 5 Set up the lab

Lab phase		Lab actions
Assess available tools	Explore data	Create inventory of CRFS data sources
	Set up team	List team members Identify missing expertise or skills within the team
	Assign roles	Assign team members according to skillset
	Map stakeholders	Create inventory of stakeholders Indicate availability / expertise / skills
	Engage in training	Set up training and information events to maximise expertise and skills within team and stakeholder network

6.1 Assess tools & resources

It may be tempting to dive straight into defining goals at the startup phase of a policy lab, but labs are urged to start at the root by assessing the region context to assess the potential of a CRFS policy lab. The main goal of the initial startup phase is to assess available tools and facilitate optimal utilization of needed resources. This will increase the effectiveness of lab activities at a later stage.

6.1.1 Explore Data

Data availability is reported in table 0.3 in the policy lab template

Creating an inventory of available data is vital for the relevance of policy lab activities. Data can support lab activities, validate efforts by demonstrating outcomes quantitatively and at a later stage it may assist in the extrapolation of lab results to applicability at higher governance levels. At project level the data-driven approach allows for identifying best practices and quantifying the effect of initiatives and policy input. Therefore, it is vital to assess on which topics data is available before lab kick-off.

Relevant data may already be collected by government institutions, with sources including national data archives. However, public data collection often takes place at the national level with little opportunities for the assessment at the local level. Therefore, it is worth assessing the availability of local level data. In cases where there is no data available on the exact element you are interested in, options may exist to gauge the topic through proxies.

Policy labs could also benefit from private-sector data to address challenges, through sourcing data through partners. For example, market partners may collect customer information which may be accessible (in anonymised form) through collaboration with market stakeholders.

Additionally, data may be retrieved from research institutions that collect their own research data or have developed proxies for research purposes.

6.1.2 Team

The team consists of all individuals responsible for executing tasks and producing deliverables outlined in the lab action plan, and as such team setup is central to the lab and has a profound impact on lab capacity and results. Team members should be confirmed as part of the lab and their capacities should be identified clearly. At the minimum it should be clear how many hours each member has to spend on the lab next to other responsibilities. Additionally, each team member brings a unique combination of experience, skills, and network. This should be noted early in the process so these qualities can be taken into consideration in the development of the action plan and members can be mapped to the components in which their skill sets can be maximized.

6.1.3 Stakeholders

We briefly return to the concept of CRFS, which is defined as *"all the actors, processes and relationships that are involved in food production, processing, distribution and consumption in a given city region"* (FAO, 2023). CRFS is characterized by a strong interconnectedness of the food system element and partners across several dimensions.

The first dimension is connection across sectors, such as food security, economic development, water and waste management, energy, transport, health, climate change, governance and spatial planning.

The second dimension is the connection of CRFS across territorial boundaries; sectoral systems such as those mentioned above often have boundaries that do not align perfectly with the CRFS territory. This can consist of neighbouring towns or cities as well as national, European or global networks.

Therefore, a multitude of systems with varying territorial scopes will impact the CRFS and these linkages should be acknowledged in the policy labs. The importance of this integration is stressed by the dependence of policy labs on political will to invest in the policy opportunities that the lab builds its activities on.

Additionally, research has demonstrated that inclusion of stakeholders leads to more effective food policies (Saviolidis, 2020). Therefore, any policy lab should involve actors from those sectors and territories that most strongly affect the opportunities assessed by the lab.

7. Step 1: Vision

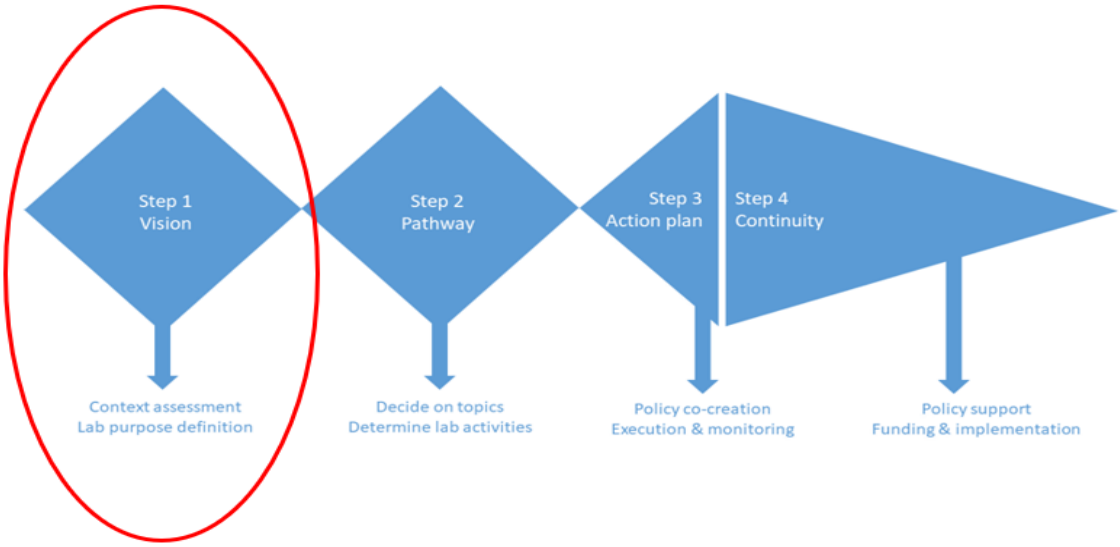

Table 6 Vision

Lab phase		Lab actions
Assess context	Situation analysis	Create inventory of policies affecting CRFS Identify policy areas Optional: Identify policy (instrument) types Identify policy gap
	Assess CRFS potential	Context assessment Identify region-specific key issues and needs
Define purpose	Develop a narrative	Develop targeted strategies Develop work plan

The policy lab vision gives direction to activities by defining a broad project goal. It defines the priority areas that labs will be working on and assesses the role of the MUFPP framework within the lab approach. A well-developed vision directs lab activities and provides focus. A vision statement links lab activities to your (policy) context and thereby functions as a method to align stakeholders. As a result, a well-established vision statement can increase the impact of the policy lab.

The vision creation process will continuously run through the assessment and planning process and will advance as the lab progresses. However, a vision should be defined at the policy lab initiation to create directed purpose for all actors involved. The vision builds on the concepts of CRFS and MUFPP to align the policy lab with the Cities2030 context. The stage of vision-creation comprises assessing the context of the policy lab and, building on this assessment, defining the purpose of the policy lab with special consideration of the lab's unique circumstances.

7.1 Assess context

A vital part of vision creation is context assessment of the policy lab. This consists of evaluation of two components; (1) an overview of the policies that are in place in the lab territory focusing on food system policies and (2) the place of the policy lab in the CRFS. The combination of these two elements will allow the policy lab to take into account the regions' unique characteristics in the development of a vision and the direction specified to the lab.

7.1.1 Situation analysis

A situation analysis aims to create an understanding of the environment in which a policy is being developed and assessed. It provides an overview of the risks and benefits of each policy option being assessed. At this early stage of the policy lab, a basic situation analysis should be conducted. There will be a more elaborate situation analysis at a later stage of the lab creation process.

The policy landscape is reported in table 1.1 in the policy lab template

Create inventory of policies affecting CRFS

In the early vision creation stage the situation analysis involves an analysis of the current state of food policies in the lab region. This takes the form of an inventorisation of policies that are in place and applicable to the field of food system governance in the region. An overview of the elements of the food governance situation analysis is given in table 7.

Table 7 Elements of Existing Food Policies supporting Vision Creation

Policies	
List policies	Local level policies National level policies European level policies
Policy area	
Work field	Educational policies Agricultural policies Urban (planning) policies Health policies … other fields to be identified by the lab
Policy type	
Policy effect	Distributive policies Redistributive policies Regulatory policies Constituent policies

Identify policy areas

The starting point is a list of all food governance policies in the CRFS. Policies will exist on the local, national and European level. It is advisable to focus attention on the local and national

levels, as they are the most impactful levels for the CRFS. European level reports, Directives and regulations can be accessed on the digital database of EC legislation and publications, EUR-Lex[1], whereas more general information on specific themes is accessible through the EC website[2]. The aim of this inventory is to gain an understanding of the intent expressed by regulators on different levels of governance with regard to the functioning and reforming of the food system. The inventory of the main policies influencing the CRFS can be used to identify any policy gaps that may be present.

It is vital that the work field is noted for each of these policies, i.e. to which food system themes these policies relate. Some examples of work fields are public procurement, food waste reduction, influencing consumer behaviour, public health and food security for the public, to mention a few.

As food systems are generally under-governed, most labs will be able to identify a policy gap by assessing which themes are adequately governed and which themes remain unaddressed. The goal of identifying policies in their respective fields is to identify any aspects of the food system that remain unaddressed by policy. When identified, these policy gaps provide opportunity for the policy lab to support the transformation of the CRFS. If an opportunity is defined based on the inventory, the labs can stop their policy analysis at this point and continue to the next phase of assessing CRFS potential.

Identify policy types

Labs may need to continue their assessment if no CRFS policy gap can be identified using the methods described above. Labs can continue this process by identifying other policy dimensions, which are listed in table 7. There is no fixed rule for the amount of or order in which policy dimensions should be assessed. It is up to the labs' judgement to decide which policy dimension is most relevant within their context and for the policies active in their region.

One option to delve deeper into policies is by specifying the policy type. Policies are specified by the methods in which they have effect, including distributive, redistributive, regulatory, and constituent effects (Bouwma et al, 2015).

[1] https://eur-lex.europa.eu/

[2] https://ec.europa.eu/info/food-farming-fisheries_en

Table 8 Definition of policy types

A distributive policy benefits specific constituents, but its costs are borne collectively. This is in contrast to a redistributive policy, where the costs are borne by a relatively small number of actors and the benefits are enjoyed by a different societal group. Regulatory policy focuses on achieving the government's objectives through the use of regulations, laws, and other instruments to deliver better economic and social outcomes and thus enhance citizens and businesses. Constituent policies consist of the establishment of government structures or rules or procedures for the conduct of government. Such rules aim at distributing or dividing power.

Identify policy gap

The policy gap is reported in table 1.1 in the policy lab template under the section "Identify the policy gap"

Once the policies in the CRFS are listed, labs can progress to assess the policy gaps within their territory. This gap can exist in each policy (instrument) type. It has been long recognised that the food system is under regulated, particularly in CRFS contexts (Pothukuchi & Kaufman, 2000) so labs are likely to identify policy gaps without going in-depth (i.e. determining the policy type or policy instrument). Once the policy gap has been identified, it should be assessed for each gap whether this would be an effective avenue to explore in the living lab.

7.1.2 Assess CRFS potential

The CRFS potential is reported in table 1.2 in the policy lab template.

The situation analysis can be finalized by assessing the lab potential in the CRFS context. This is a first step of pathway development, which will be elaborated on in the next step. This surficial assessment aims to use the findings from the situation analysis to provide direction to move the lab forward and therefore the more detailed assessment can be left for the pathway development stage.

Context assessment

Assess the context: i.e. create a snapshot of the CRFS, define its boundaries and list important characteristics, such as boundaries, governmental/jurisdictional structure, natural resources,

surface, demographics, socioeconomic situation, food security and health status, food infrastructure, land use, water resources, food prices and accessibility, import/production data. Identify any existing data gaps.

The living lab approach is characterized by the ability to account for the uniqueness of each CRFS in its context, governance structure and the food system itself. As such, the findings from the situation analysis can be used to identify region-specific food dependencies, potential weaknesses, and pressure points. The situation analysis provides an opportunity for city regions to assess their food system to plan interventions that address local key issues and needs based on context assessment. The final goal of this stage is to gain an understanding of the vulnerabilities and obstacles of UFSE and the impact of CFRS on society and citizens. This assessment supports the labs approach to policy making to support the transitioning towards a sustainable CRFS.

7.1.3 Determine CRFS Activities

Strategy development is reported in table 1.3 in the policy lab template.

The context assessment is the base on which CRFS activities can be determined, i.e. the identified policy gaps are the basis on which activities are determined. The CRFS activities should aim at filling the policy gap and thereby focus at those points where there is a lack of activity or policy and the suggested activities are expected to have a positive impact on reaching sustainable CRFS. For each activity the lab takes on, the relationship between the lab activities and the policy gap/context assessment should be clarified.

Cities2030 embraces the bottom-up approach as a method to include actors in local communities to support the development of sustainable CRFS. The Bruges food lab has experience with the bottom-up approach and when needed it can provide information on bottom-up food strategy development and local stakeholder inclusion. The final goal of this phase is to develop targeted strategies that fit the challenges and needs of each individual region.

Define purpose

The policy lab vision creation phase is finalized by defining the purpose of the policy lab by specifying the project goal. The purpose of the lab is defined based on the policy gap and the activities that fill that gap most effectively in the specific context of the CRFS. The potential of these activities within the CRFS rationale should be clarified. Based on this information a rough work plan can be developed. This gives an overview of the lab context, stakeholders involved, activities that the lab aims to accomplish and how these activities will link into the gaps of the current policy context.

The vision definition is reported in table 1.4 in the policy lab template

8. Step 2: Pathway Development

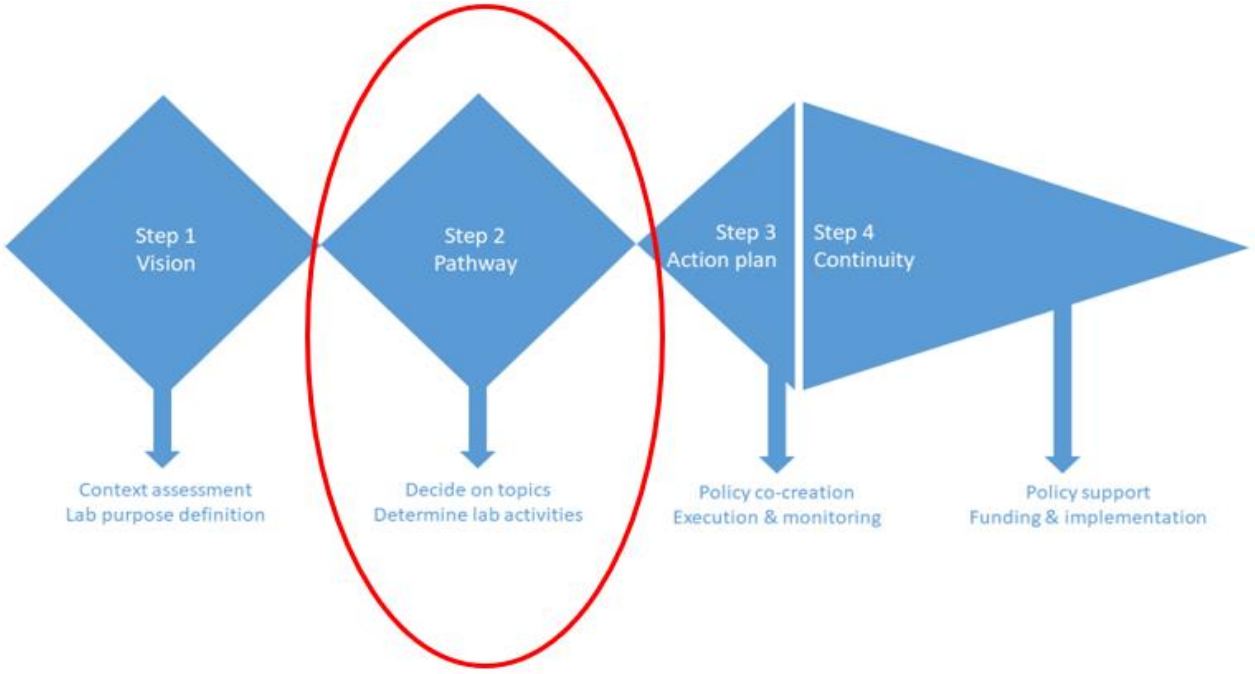

Table 9 Pathway Development

Lab phase		Lab actions
Resources	Data collection	Data collection
Analysis	Data assessment	SWOT
Decide topics	Define pathway	Set priorities Define boundaries CRFS
	Determine activities	Define SMART goals Create agenda

The pathway development stage builds onto the vision and aims to develop a concrete plan for activities to be executed. This stage consists of an in-depth assessment of activities that took place in the vision creation phase and the initial interactions with stakeholders. More elaborate data will be collected, either through using existing resources or through stakeholder engagement. The gaps that have been identified in the vision creation phase will be assessed more thoroughly through a SWOT analysis. Priorities are set and the CRFS elements are defined while the boundaries of the CRFS are clearly defined. Based on this information the final lab goals can be defined as SMART goals and the lab agenda is formulated.

8.1 Resources

Data collection is reported on in table 0.1 in the policy lab template

Review the data collected or assessed during the setup phase, or commence data collection, using data sources identified previously. This provides the possibility for informed decision-making and provides clarity in stakeholder dialogues. It is the labs responsibility to identify which data types are most useful in determining which activities best serve the CRFS. The text box below lists examples of data used by CRFS labs in the context of the MUFPP the pilot labs can refer to for clarification (FAO, 2023).

Table 10 Data collection examples

Data type	*Examples*
government structures and bodies	government bodies involved in CRFS functioning and governance, responsibilities and mandate
natural resources	surface areas, urban/rural divide, urban growth patterns, water (amount/quality)
demographic data	inhabitants, urban/rural numbers, gender, age, ethnicity, geographical distribution of population
socioeconomic data	SE status division, household income, poverty, employment, spatial distribution of socioeconomic characteristics
health & culture	food security, hunger, malnutrition, poverty obesity rates, diet-related disease incidence
food infrastructure	access to culturally suitable and nutritious diets across population/income group
land use	road infrastructure, distribution networks, markets, production, processing, storage and retail
resilience	agriculture, production systems, open spaces in municipal area and in city region, land prices/land availability regional consumption, food import per food groups, origin, regional/national/global imports)

The use of spatial data is encouraged, as this provides insight into the flow of resources and allows for active participation of stakeholders. One method of using spatial data in multi-actor and multidisciplinary settings is the use of interactive surface tables (or large tablets) that visualize data, such as geographical maps, infrastructure, land use and demographic information. The interactive nature of such a tablet supports discussions across stakeholders

with varying interests and can support the learning process of stakeholders to understand the interactive nature of CRFS elements under discussion and the complexities surrounding solution-searching in CRFS contexts. The participatory nature of this approach can support the application of modeling tools that leverage expert knowledge instead of applying complex and detailed simulation models. This approach has an added benefit of stimulating stakeholder interaction, thereby supporting the multi-actor approach that is essential to come to effective and enforceable solutions in the CRFS reality.

8.2 Analysis

8.2.1 Data assessment

The SWOT analysis is reported on in table 2.1 in the policy lab template

SWOT analysis is a planning tool that consists of the SWOT elements Strengths, Weaknesses, Opportunities and Threats as depicted in table 11. It is a type of extended situation analysis and a diagnostic tool that is commonly used to gain an understanding of internal and external factors that influence the pilot (Namugenyi et al., 2019). It assists in gaining an understanding of key factors in the city/region pilot. The SWOT analysis builds onto the pilot objective (or vision) by identifying any factors that impact the realization of the vision and ultimately aims to support decision making by assessing the best course of action. This approach is particularly suited for CRFS pilots as it supports self-assessment and is highly flexible, adjusting to a wide array of CRFS contexts and characteristics.

Table 11 SWOT Analysis

	positive	negative
Internal	Strengths	Weaknesses
External	Opportunities	Threats

Strengths

Strengths are considered positive attributes that are internal to an organization, within the organization's control and can be both tangible and intangible. The main questions one should ask when formulating the strength is *"What characteristics of the pilot policy lab (could) drive*

the policy lab vision forward? Which elements of the vision does this strength affect? Through which methods would these attributes cause a positive development?"

Opportunities

Opportunities are external positive factors that provide chances for development of the policy lab or realization of policy lab elements. The questions one should ask in formulating an opportunity is *"Which elements of the policy lab context could drive the policy lab vision forward? Which elements of the vision? Is there a time-frame for this opportunity? Through which methods could these attributes be utilized to create a positive development?"*

Weaknesses

Weaknesses are internal factors that are under the organizations' control and negatively impact the organisations' ability to achieve the vision or the overall goal. The questions one can ask to determine an organization's weakness are *"which areas could the organization improve to produce outcomes closer to its goals or vision? Which elements of the vision is this linked to? And are these areas difficult to change?"*

Threats

Threats are external factors that are beyond the organization's control but have a negative impact on the organizations' ability to reach the pilot vision or goal. More established pilots may have contingency plans for long-standing structural threats. If they are, their effectiveness should be assessed and included in the SWOT analysis. The severity and probability of occurrence should be assessed for each threat. The main questions to assess threats are *"What effect can this threat be expected to have on the realization of the pilot vision? What elements of the vision will this threat impact? Is there an (effective) contingency plan to minimize the threat?"*

Be aware that the quality of the SWOT analysis is greatly dependent on the quality of the data included. One example is the effect of including inflation in long-term financial data. The quality or detail of the information included in the SWOT can change its outcome completely. Therefore, the lab should ensure that the data represents all elements that make up the CRFS or the context in which the actor operates. Additionally, the SWOT analysis approach entails a certain degree of simplification. This should be assessed with care to ensure the SWOT provides an accurate depiction of the CRFS. Particularly when dealing with the viewpoints of several stakeholders, it is advisable to critically assess whether the SWOT correctly aligns perspectives held across the parties and feed into potential stakeholder resistance.

The SWOT analysis ultimately creates insights into the current CRFS situation based on information on both the internal/external axis and positive/negative axis. These insights can be useful in identifying the activities that have high impact in the effect of the pilot. The CRFS pilot will benefit from building onto the SWOT analysis; by applying the main outcomes

through playing on the CRFS strengths and weaknesses. This will support the process of defining goals, and ultimately activities, to focus on. The following step describes how goals and activities can be defined and prioritised.

8.3 Decide topics

CRFS prioritization is reported on in table 2.2 in the policy lab template

The data collection and assessment activities feed into the decision-making process of selecting priority topics for the pilot. This consists of narrowing down the potential activities the lab could take on and providing focus through priority setting and defining the boundaries of the pilot, and secondly determining the activities by formulating SMART goals and ultimately creating the pilot agenda.

8.3.1 Define pathway

Set priorities

A clear definition of key priorities is required to accurately define the pilot goals, as priorities inform the selection process of which activities receive priority action to optimize the impact of activities. The priorities can be based on the SWOT analysis in two ways. The first is to assess if it has become evident in the data collection process and the SWOT analysis that there is a lack of adequate information. In that case it can be a priority to address this lack of information and assess if the pilot would benefit from data collection to such an extent that this should be prioritized. Potential priority activities could consist for example of consultative stakeholder meetings to collect qualitative information, or quantitative approaches such as spatial mapping of food system flows or environmental effects.

A second way in which the SWOT analysis can be utilized is to assess the information captured in the analysis. If any element stands out as being particularly limiting to regional food system transformation, there may be value in overcoming that weakness or threat. Similarly, the elements that have been identified as driving food system transformation can be further exploited by prioritizing expansion of the opportunity or strength. However, when prioritizing actions always take the expected impact of the pilot into consideration. The final goal of prioritization is to optimize the impact of the policy labs.

Define boundaries CRFS

The boundaries of the pilot should be clearly formulated to correctly define the CRFS. A clear CRFS border is highly unlikely, as a CRFS itself is made up of multiple systems with varying

boundaries that can spread outside the city-region borders. In addition, each food system contains relationships that exist with national and global systems.

Ultimately, the processes of prioritization and boundary definition will feed back into the vision and a revised version of the vision can be created that is in line with the pilots internal and external influences and will maximize the impact of lab activities.

8.3.2 Determine activities: SMART goals

The SMART goals are defined in table 2.3 in the policy lab template

The activities within the CRFS lab are based on the pathway definition and will be defined as SMART goals. These goals include criteria of goals and objectives to be achieved. The SMART approach is based on acronyms that stand for Specific - Measurable - Attainable - Relevant and Time-based, as listed in table 9.

Table 12 SMART goals

S	Specific
M	Measurable
A	Attainable
R	Relevant
T	Time-based

Specific - The Specific criteria entails that the activity needs to be described explicitly with adequate detail to minimize misinterpretation about the definition, purpose or execution of the goal. Think critically about the different elements of the execution of the goal and ensure that they are all addressed in the description of the goal.

Questions one can ask to make a goal specific include: what needs to be done to reach the goal? What outcomes can be expected from these activities? What is the significance of these activities to the vision of the CRFS pilot? Who is and who should be involved in the execution of this task? Do other stakeholders need to be involved? What requirements are involved in reaching the goals? Can any barriers be anticipated?

Measurable - The Measurable element of the SMART goal specifies the method of assessing the activity effectiveness. This entails the assessment of objectives, which can be based on both quantitative and qualitative data. Quantitative data assessment allows for easier assessment of pilot results, but the data collection and assessment methods should be planned and described in this section. Effectiveness assessment is more challenging for qualitative elements. In these cases, indicators or data proxies should be described so an assessment process is planned.

Questions that contribute to formulating the measurability of the pilot goal can be formulated as; what data is required to measure progress on this goal? what data is available? Is there a data gap that should be addressed prior to formulating assessment methods? What assessment methods can be applied? What indicators are applicable in this context?

Attainable - The Attainable criteria reflects the need for objectives to be defined at the right level, where change is both noticeable and can be achieved. The correct level of change will be motivating for stakeholders and pilot partners to work toward, and the key component is realism.

Questions that assist in formulating realistic and attainable goals center around identifying the limiting and stimulating factors in attaining goals; what are the constraints in reaching this goal? Are there specific limitations in place? If so, what is the contingency plan? Is the time-frame realistic? Are resources available to execute the plans as planned? Is this plan realistic?

Relevant - All partners and stakeholders should recognise the relevance of this particular pilot goal to the overall pilot objective. As such, it is vital to emphasize the link of activities with the pilot vision. Emphasizing the relevance of each goal also ensures that goals are aligned and serve a shared goal or vision.

Questions one can ask to articulate the relevance of a goal are; what is the expected outcome of this action? Why is this important? Does this action fall within the boundaries of the CRFS? Is this action optimal for this specific CRFS (policy) context?

Time-based - Consider the deadlines that apply to this goal. List them and ensure they are accessible for all stakeholders and partners involved with the task. Even when no hard deadlines exist, state the important moments for the task and a clear completion date as deadlines create a sense of urgency and ensure that tasks are not under-prioritized.

9. Step 3: Action Plan

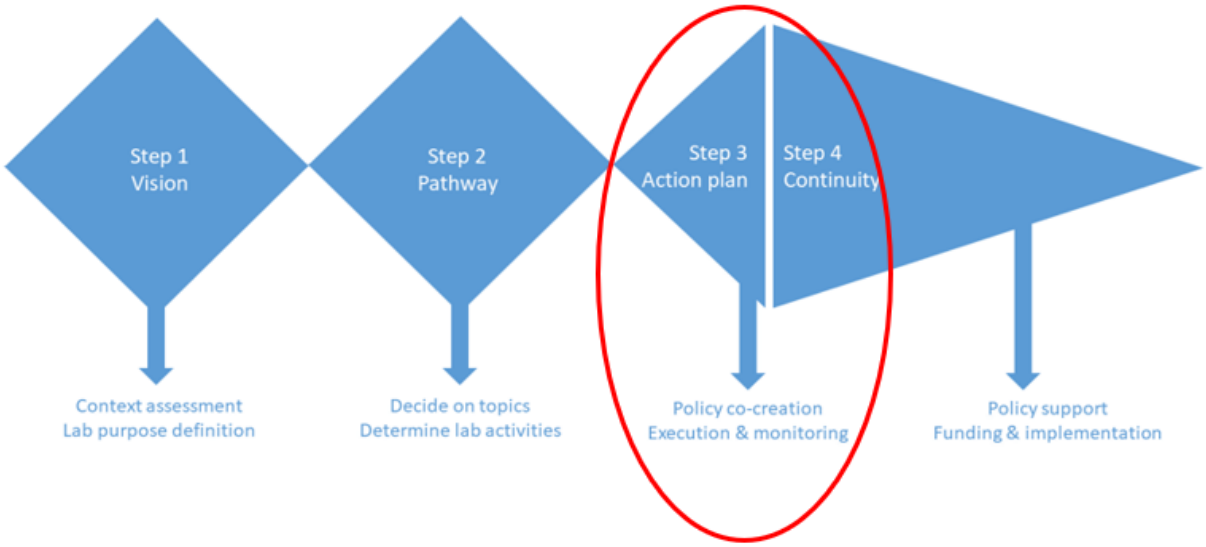

Table 13 Action Plan

Lab phase		Lab actions
Contextualization	CRFS-specific context	Re-iterate previous steps
Execution plan	Task planning	Create SMART task list Allocate & prioritize tasks
Evaluation plan	Evaluation planning	Plan monitoring & evaluation Identify resources & indicators
	Outreach planning	Identify deadlines & milestones Plan visualization & communication

The action plan aims to provide direction by emphasising critical tasks and outlining concrete actions needed to reach the specified pilot goals. Action plans are distinctly different from project plans; project plans are quite detailed whereas the action plan provides a high-level overview.

The action plan is divided into three sections; (1) contextualization, where the pilot is evaluated in the context of the assessments conducted in the previous steps; (2) an execution plan, which takes the form of a list of tasks and resources that assist in reaching pilot goals; and (3) an evaluation plan, where vital communication opportunities are identified and necessary data for communication and evaluation are anticipated. One particularly useful characteristic of an action plan is that it breaks down complex and multifaceted processes into smaller tasks in such a way that the process becomes more manageable and has specific tasks assigned to partners and at specific times.

9.1 Contextualization

The action plan translates the previously defined vision, pilot context and goals into concrete and actionable steps. As such, this is an appropriate moment to re-iterate and reflect on the

CRFS assessment in the previous steps. The step-by-step guide presents the pilot as consisting of a linear process, although in reality this is an iterative process with several feedback loops. For example, the lab vision may be altered after the SWOT analysis to align with the newly found insights in the lab's strengths and weaknesses. Such reverse alterations are natural in pilot processes and are even encouraged at this stage to assure that the actions set out in the action plan are in line with the assessment and definitions from previous steps. This is referred to here as contextualisation, as it aims to align the pilot actions to the several definitions and context assessments performed earlier in the pilot process.

9.1.1 CRFS-specific context

Pilot contextualisation centers around the characteristics of the CRFS that have been identified in the previous steps. Each pilot consists of a unique combination of territorial characteristics, political actors, strategies and mandate, socioeconomic context, and stakeholder attitudes/involvement, to mention a few. The relevance of these elements to the CRFS will have been emphasized in the vision formulation, the context assessment, SWOT analysis and SMART goal definition. Take a moment to carefully assess if these elements line up, and if any definitions, goals or objectives need to be updated to align with findings from the CRFS assessment process. Most importantly, reiterate the vision, the work area, the policies, strategies and goals the lab will be aligning with.

9.2 Execution plan

The execution plan is reported on in table 3.1 in the policy lab template

The next phase in the action plan consists of translating the information captured in previous steps into concrete actions. This execution plan can be structured as in table 10. Pilot labs are free to use the columns and are encouraged to assess how useful this degree of execution planning is for them. It is expected that this may not add much value to some of the more established labs, in which case this may be reported on with limited detail.

9.2.1 Task planning

The insights built in the CRFS assessment are here translated into concrete tasks. This process is initiated by reviewing the SMART goals that have been defined in step 3: pathway to action. A first step is to carefully scrutinize the completeness and the definition of this list of SMART goals to ensure that they are in line with potential new insights. The (updated) SMART goals are listed in the first column and their execution will be specified in the following columns.

Table 14 Execution plan reporting

SMART goal	*Execution plan*		
SMART task	Responsibility	Timeframe	Prioritization

SMART task	Responsibility	Timeframe	Prioritization

SMART task list

All SMART goals are defined in the specific SMART format (described in step 2) that facilitates assigning actions to each goal. Concrete tasks are identified to each of these goals. These actions should describe as specific as possible HOW these goals are accomplished using the same SMART-criteria as the pilot goals. The tasks should therefore contain the elements (*Specific - Measurable - Attainable - Realistic - Time-bound).* The task list is complete when the SMART goals will be fully realized if the activities listed have been completed.

Allocate & prioritize tasks

Once the SMART tasks are fully defined, they are allocated to the responsible actors. The majority of tasks will likely be assigned to project partners, but tasks may be assigned to other stakeholders. However, this is under the condition that stakeholders are fully aware of the responsibilities, are able to execute the task according to the specific SMART task definition and have explicitly agreed to take on the task. The time frame should be included for each task to facilitate planning at individual partner level.

Prioritization of tasks is necessary particularly in those instances where labs are under pressure due to (resource) constraints. Prioritization can be indicated dichotomously, by simply specifying "yes" or "no" under prioritization. Some partners may prefer a scoring system, where a task is allocated a priority score on a scale from 1-5 for example. Details on the prioritization methods are best defined on lab or partner level, but it is advisable to keep this simple and in line with the preferences of the actors responsible for the execution.

9.3 Evaluation plan

The evaluation plan is reported on in table 3.2 in the policy lab template

The action plan should include assessment of the evaluation of the pilot. This is divided into the evaluation of the pilot in terms of effectiveness and final lab output and the planning of outreach activities (i.e. activities aiming at expanding awareness and promoting the pilot). The outreach and evaluation elements each entail their own goals and activities.

9.3.1 Evaluation planning

The ex-ante pilot evaluation seems far away at this point, but consideration should be given to the final pilot assessment to anticipate future needs for data availability and activity tracking,

so the necessary resources are available to support the assessment of the pilot effectiveness. This is heavily linked to the impact assessment that is under development in CITIES2030. It is advisable for policy labs to check the development of this deliverable when they arrive at this phase as this can assist in the evaluation of the pilot lab effectiveness. Until these materials have been made available to the pilots, policy labs are encouraged to use the methods described underneath to create a rudimentary evaluation plan that can be expanded and refined once the project-wide evaluation methodology has been developed. The goal of the activities described below is to develop an approach towards the evaluation activities and ensure that activities are tracked and recorded, and any data required to assess the effect of the pilot is collected.

Table 15 Evaluation plan reporting

SMART goal		*Execution plan*		
SMART task	…	Data collection	Indicators	Monitoring
SMART task	…	Data collection	Indicators	Monitoring

Identify resources & indicators

Successful evaluation of reaching pilot goals requires a clear definition of the status quo, i.e. a baseline scenario, and the desired situation the pilot works towards. Ideally both these situations should be expressed, either qualitatively or quantitatively, but always in a format that allows before-and-after comparisons. In many cases the SMART definition of pilot goal and tasks include an element of measurability that provides enough information to define a baseline and/or pilot goal. Data collection aims specifically to support the comparison of the baseline and goal at evaluation stages of the CRFS pilot. Labs are encouraged to use existing data sources, but if these are not available pilot labs often use surveys across households, government institutions and businesses, expert consultations through focus group discussions or expert interviews, or, if the lab has a more quantitative approach, food flow mapping.

However, data that supports ex-ante pilot assessment is not always readily available. In that case labs are referred to the CRFS indicator framework[3]; a valuable source of inspiration for CRFS pilots. It provides an overview of the main themes identified in previous CRFS labs and potential outcomes and impact areas. Additionally, it lists indicators that may be used for each objective, along with suggestions for data sources that support the use of these indicators. Even when the data collection process is straightforward, it is advisable to review this framework to validate the methods and assess if additional or less labor intensive data sources can be used.

[3] Available at https://www.fao.org/3/i9255e/i9255e-CRFS-Indicator-Framework.pdf

Plan monitoring & evaluation

The potential indicators for lab impact and data collection methods have now been defined. The monitoring of this resource collection and the execution of goal-related general tasks should now be assessed. There is no standardized form for the lab monitoring; labs should setup a monitoring system that is both efficient and sufficient for them. It can be as simple as having a excel spreadsheet in which activities are listed, with core elements of each activity added to the listing.

Monitoring these activities fulfils several purposes. On the lab level, monitoring supports ex-ante assessment of the lab and can thereby support capacity building and/or lab promotion activities by providing information on the effectiveness of activities mid-process. Tracking activities and outcomes facilitates the identification of elements that support or block the pilot execution. Additionally, it supports labs on reporting activities as the information is kept in a central repository and can be easily accessed, presented, and summarized on request. On project level activity monitoring is useful to gain insight into lab progression and into factors that determine the successful pilot execution. The latter feeds into the blueprint for labs (D4.5) which informs follower labs on the most successful strategy for their context, based on the identification of best practices within existing policy labs.

9.3.2 Outreach planning

Outreach consists of all activities that aim to promote or advocate the CRFS pilot. These activities stretch over a broad spectrum of activities, ranging from promotion at the regional level with political or business actors to education initiatives at local schools. The ultimate goal of outreach is to maximize the impact of the pilot, through increasing public awareness and educating CRFS stakeholders. Additionally, outreach activities may increase stakeholder inclusion and increase political will due to education of the CRFS approach, increasing awareness and future projections on social, health, environmental, economic and resilience aspects of CRFS. These activities are broad and often fall into the capacity building activities. Therefore, make sure to review the capacity building materials developed in D4.1 as they may well support the communication activities.

Table 16 Outreach plan reporting

SMART goal		*Outreach*	
SMART task	…	Milestones	Communication
SMART task	…	Milestones	Communication

Identify deadlines & milestones

Each pilot process contains moments in which project milestones are reached; these results could be used to highlight the pilots activities and importance. Pilot milestones are excellent moments to take stock of the pilot activities and the impact it has on the regional CRFS. A first

step in this process is to identify which moments can be considered milestones. Commonly these centre around the completion of a deadline or a particularly impactful task in the task list.

Plan visualization & communication

Once milestones are identified, assess whether additional opportunities exist to promote the CRFS pilot and which form would be most fitting. A technical report is rarely an effective method to appeal to the public, project partners or stakeholders. This phase has room for creativity and a proactive approach. In previous steps pilots were advised to collect data as they progressed through the CRFS processes. Communication with policymakers as well as other target groups benefits from selecting the more fitting communication option, consisting of concise information with visual cues - such as fact sheets, maps or videos -, or in-person communication through public events and communication tailored to a specific audience. In this phase labs can review the SMART goals, and particularly the M -element (measurability). Pilot partners will have given consideration to the measurability of the pilot goal, which often consists of a form of data collection of event tracing. This data can be utilized to maximize the impact of the lab. The presentation and visualization of data should be carefully considered, particularly keeping in mind the target audience.

10. Policy Lab Action Plans

CRFS labs have applied the supportive materials from the policy lab seminar series and the templates to report on their activities during the first year of the project (2021-2022). The reported information provides insight into two aspects of CRFS lab creation: (1) the context in which labs operate, largely characterised by the stakeholder network and policy context; and (2) the lab action, described through the selection of thematic CRFS labs direct their focus on and the tools by which CRFS labs choose to do so. These two elements demonstrate strong interaction, as the selection of the adequate policy activities is largely dependent on the CRFS context, and vice versa.

The following sections will zoom in on the elements of CRFS policy lab creation, i.e. CRFS context and lab action. The main focus is on the pilot labs, consisting of the Bruge (Belgium), Haarlem (the Netherlands), Troodos (Cyprus), Velje (Denmark) and Vicenza (Italy) regions. Quantitative data on the Troodos is lacking. Yet, the remaining pilots provide insight into trends and focus points in piloting policy solution to CRFS-specific challenges.

10.1 Policy Labs Stakeholder Network

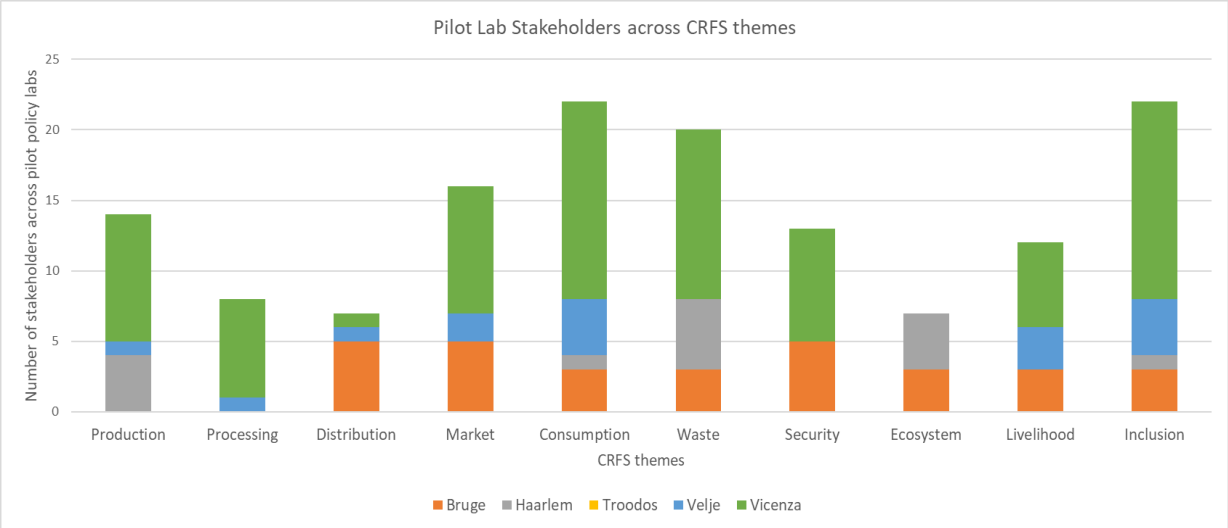

Figure 4 Pilot Lab Stakeholders across CRFS themes

Figure 4 depicts the number of stakeholders across CRFS thematic of production, processing, distribution, market, consumption, waste, security, ecosystem, livelihood and inclusion. Stakeholders were included from across all thematic, yet variation is evident. Most CRFS lab stakeholders are active in the areas of consumption (22), inclusion (22) and waste (20), followed by market (16), production (14) and food security (13). Lowest stakeholder inclusion levels were in the areas of livelihood (12), processing (7), distribution (6) and ecosystem (6).

In the interpretation of these results, one should remain mindful of the effect of each lab on these trends. The Vicenza lab actively includes a large number of stakeholders, thereby

dominating the patterns visible in the pilot labs. Therefore, it is useful to additionally include the trends visible across all CRFS labs that have reported on their activities.

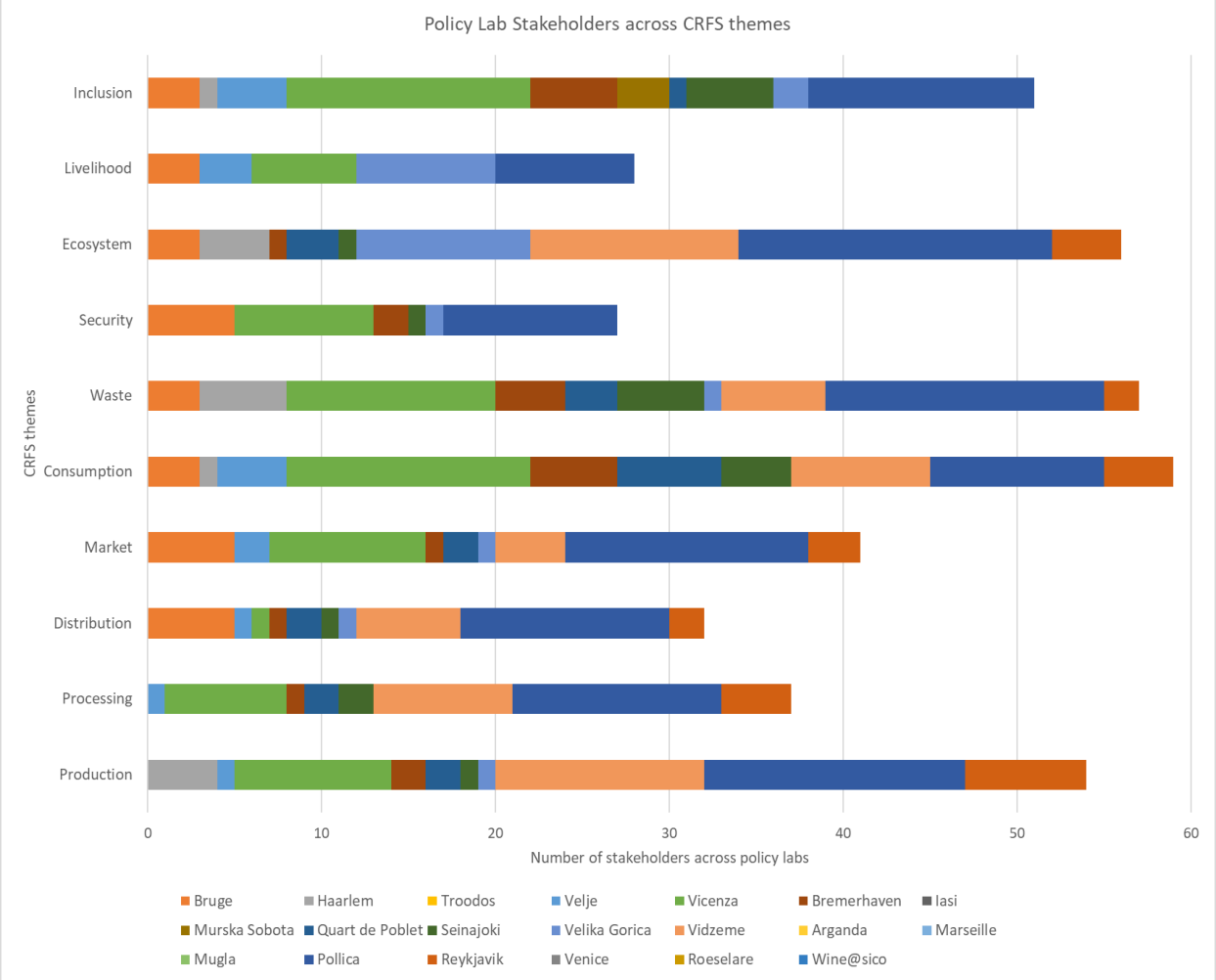

Figure 5 Policy Lab Stakeholders across CRFS themes

Figure 5 depicts the number of stakeholders across the CRFS themes for all CRFS labs that reported this data. Overall, a similar trend is visible, with the main areas represented by stakeholders being consumption (58), waste (57) and production (54). However, stakeholders from ecosystem-related themes enjoy a greater representation across policy labs than reported by the pilot labs (55). Stakeholders that were included in the CRFS labs were active in the theme inclusion (51), market (41), and processing (36). Lower levels of representation were found for the theme distribution (31), livelihood (28) and food security (26).

Another factor that stands out is the variation in the number of stakeholders included across CRFS labs. Labs that stand out as engaging with large numbers of stakeholders are Pollica, Quart de Poblet, Vicenza and Vidzeme. However, it should also be taken into consideration that these numbers do not reflect on the intensity of collaboration with these stakeholders,

but rather indicate any form of inclusion of the stakeholder with the CRFS lab. Similarly, an element of double counting is possible as certain stakeholders will be active in several thematic.

10.2 Policy Labs Policy Landscape

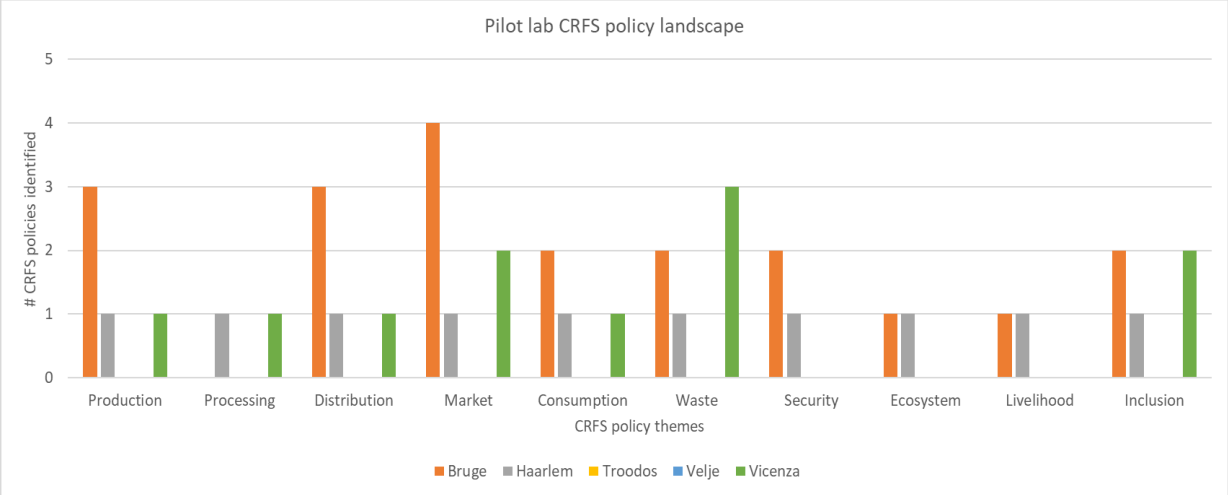

Figure 6 Pilot lab CRFS policy landscape

The policy context reported by the CRFS labs consist of a list and description of the policies that affect the CRFS, presented in figure 6. The pilot labs report large variations in the number and type of CRFS policies and strategies active. Bruge reports policies across all thematic, focusing mostly on the economic aspect of CRFS -the areas of production, distribution and market-, with less attention to consumption, waste, security and inclusion, and limited policies for ecosystem and livelihood. The Haarlem region shows a uniform -but low- spread of policies across all themes, whereas Vicenza policies address waste, inclusion and market to a larger degree than production, processing, distribution and consumption. Velje and Troodos were unable to list and describe CRFS policies. These trends indicate a large variation of policies across CRFS in the amount of CRFS policies in the regions as well as their focus areas and the spread of policies across CRFS themes.

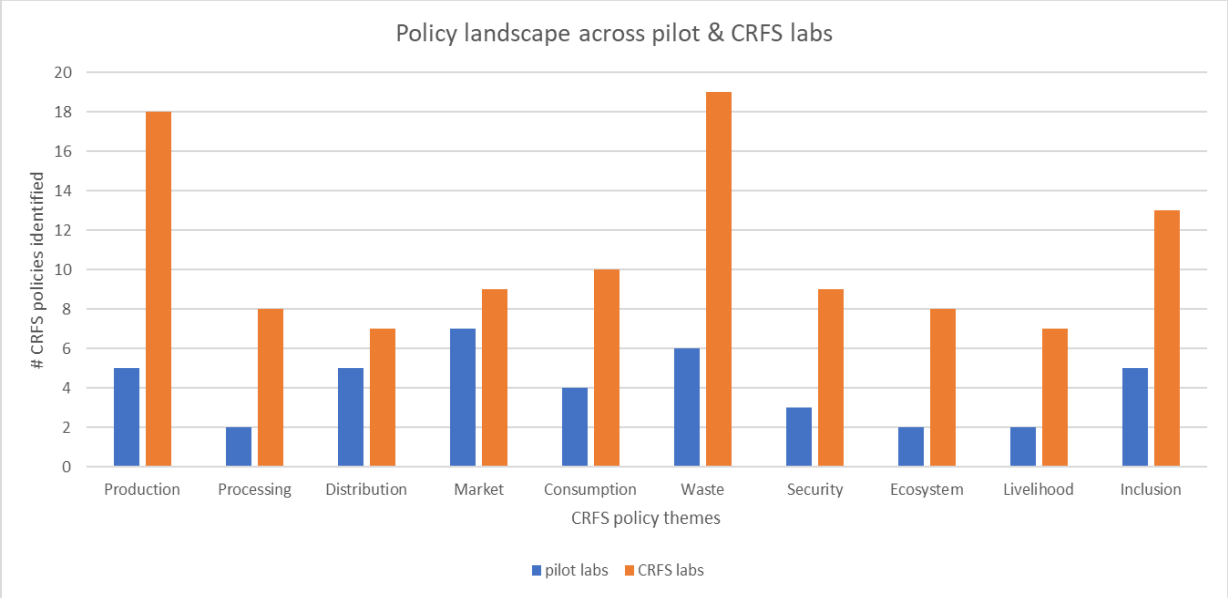

Figure 7 Policy landscape across pilot labs and CRFS labs

Inclusion of the additional consortium labs confirms the existence of large variation across the labs. Policies relating to CRFS themes amount to a combined 7 policies and strategies for livelihood and distribution, while the issue of waste has been identified in 19 policies and strategies across the consortium. However, consistent through the pilots as well as the pooled CRFS labs is the focus of policies and strategies on waste (19), production (18) and inclusion (13).

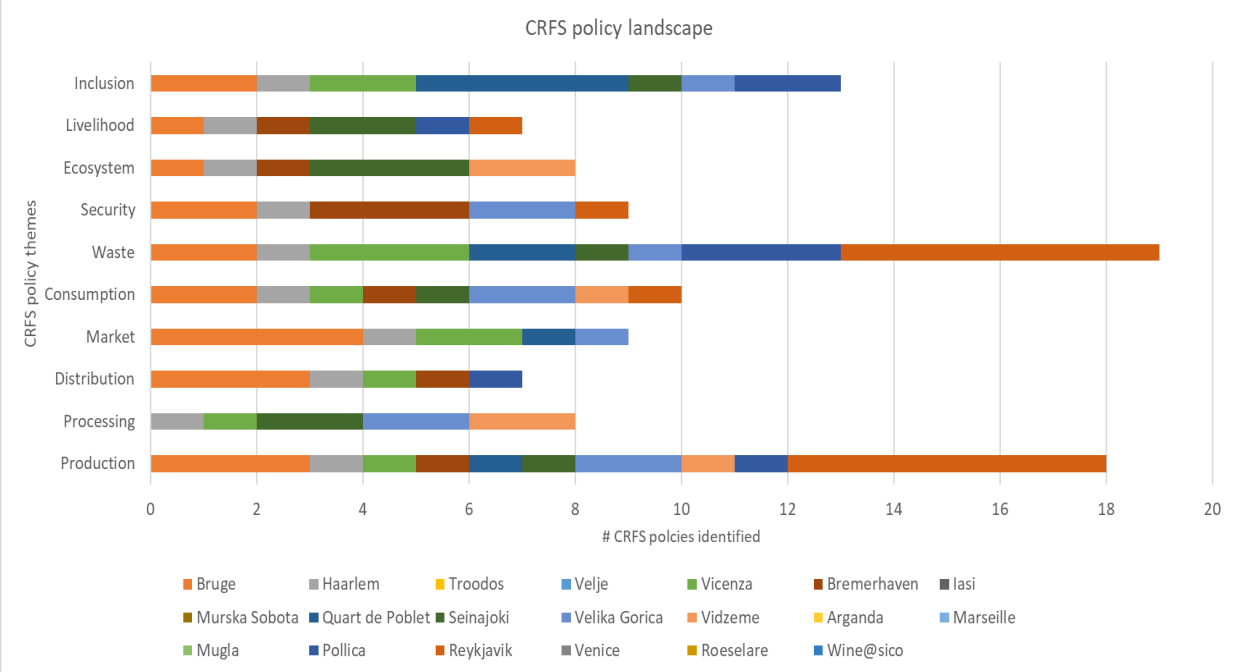

Figure 8 CRFS Policy landscape

10.3 Policy Labs SMART goals

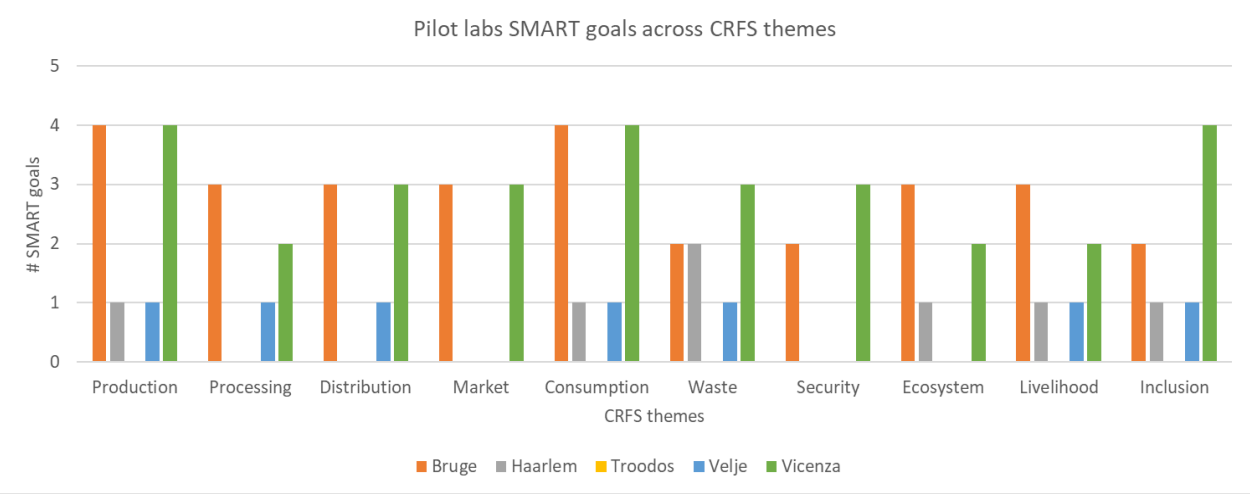

Figure 9 Pilot lab SMART goals across CRFS themes

In following the step-by-step guide, CRFS pilots translate the policy gap into policy lab actions, defined as SMART goals, depicted in figure 9. Surprisingly, CRFS pilots exhibit more consistency in their activities than their policy context. Pilot SMART goals cover all CRFS thematic. Particularly Vicenza and Bruge touch upon all themes in their goals and activities, while Velje and Haarlem are more selective in the direction of their efforts.

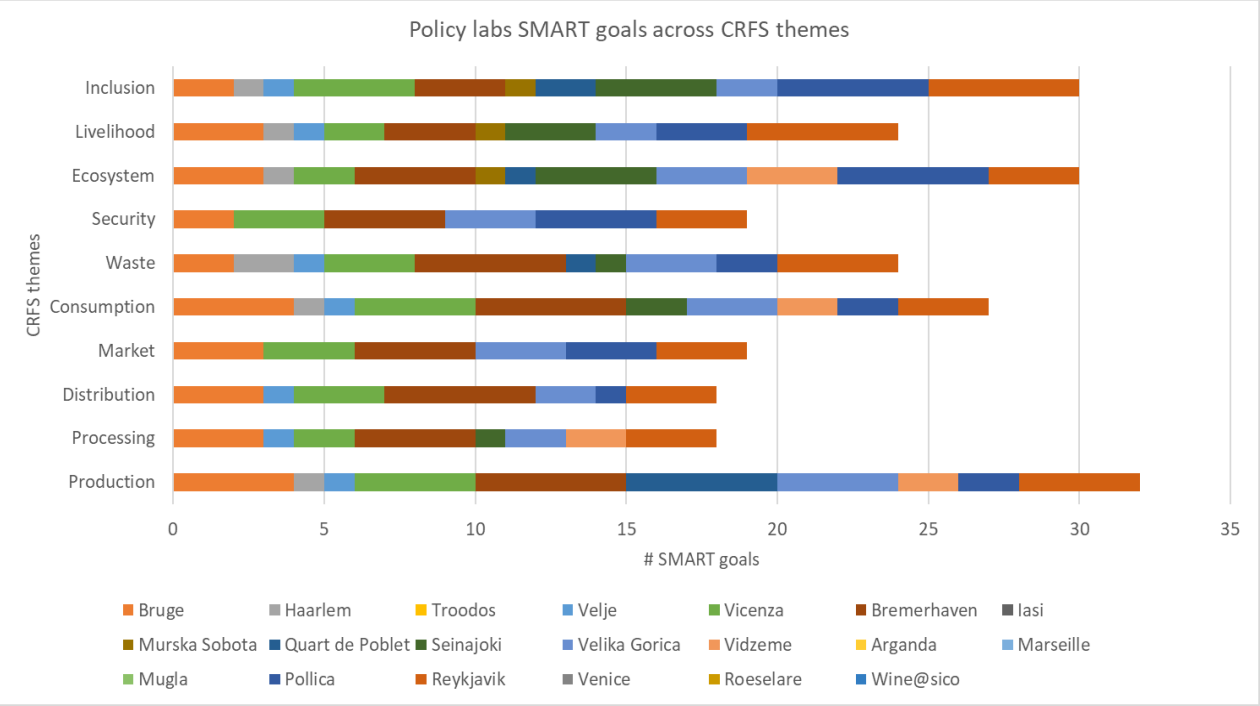

Figure 10 CRFS Policy landscape

Expanding the focus on the thematic addressed by SMART goals across all CRFS labs provides a similar image. All CRFS thematic are addressed in SMART goals in a relatively consistent manner. However, most policy lab activity focuses on the thematic of production, inclusion, and ecosystem (32, 30 and 30 SMART goals, respectively). In contrast, the themes addressed less across the consortium are food security, market, distribution, and processing (19, 19, 18, 18 SMART goals, respectively).

10.4 Policy Lab Action Plan Assessment

The policy lab action plans teach numerous lessons about CRFS lab creation. CRFS action plans are unique, demonstrating the large variation across CRFS in terms of their characteristics, which spills over into the status quo of the policy context in which policy labs operate. This variation stresses the importance of policy assessment in the development of viable and well-directed CRFS lab action. This emphasises the suitability of the open policy method, as it allows for stakeholder inclusion and continuous assessment of existing policy frameworks and governance approaches.

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