



**DELIVERABLE 5.3**

# **IMPACT ASSESSMENT REPORT FINAL REPORT**

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## EXECUTIVE SUMMARY

This deliverable provides a detailed assessment of the CENTRINNO impact after the completion of the third and final pilot sprint, reflecting on the entire span of the project's implementation. The report has been structured based on the Impact Assessment Framework (IAF) [1], which focuses on the monitoring and evaluation of three parallel processes of change, based on:

- (a) **pilot outcomes (pilot-level impact)**, defined as changes in actions, behaviours, and relationships on behalf of the individuals and organisations the pilot activities seek to influence;
- (b) **platform strategies (resource-level impact)**, related to the effectiveness of the project's resources in supporting pilots achieve their planned outcomes; and
- (c) **organisational practices (project-level impact)**, related to the development of the necessary capacities to implement the CENTRINNO approach and sustain the achieved outcomes in the pilot areas and beyond.

The report presents an overview and detailed description of the above processes that have been taking place in a **participatory and continuous** manner. Impact assessment is an integral part of the project's activities, in line with the **CENTRINNO overarching vision** of fostering sustainable urban transformation by **turning city districts into Fab City Hubs (FCH)**.

Chapter 1 introduces the scope and content of the report, along with some methodological notes. Chapter 2 provides a brief overview of the IAF and evaluation methodology to help navigate the rest of the sections. This includes a glossary for the terms necessary to follow the descriptions of various technical aspects of the methodology.

Chapters 3, 4, and 5 summarise the monitoring and evaluation processes in the three levels described above. All three chapters are structured in two phases reflecting the evaluation methodology cycles of interactions, namely, design and planning (sections [3.1](#), [4.1](#), [5.1](#)) and monitoring and evaluation (sections [3.2](#), [4.2](#), [5.2](#)), including a step-by-step presentation of the tools employed on each phase.

Finally, chapter 6 provides a synthesis of the project's impact drawing insights from all levels of monitoring and evaluation and a summary of the lessons learnt and next steps beyond the project completion.

Links to all supplementary material and datasets employed in the monitoring and evaluation processes are provided in the Annexes.

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## ACRONYMS AND ABBREVIATIONS

ACRONYM	DESCRIPTION
<b>CENTRINNO</b>	New CENTRAlities in INdustrial areas as engines for inNOvation and urban transformation
<b>OM</b>	Outcome Mapping
<b>IAF</b>	Impact Assessment Framework
<b>WP</b>	Work Package
<b>FCH</b>	Fab City Hub
<b>AMS</b>	Amsterdam
<b>BCN</b>	Barcelona
<b>BLO</b>	Blonduos
<b>CPH</b>	Copenhagen
<b>GEN</b>	Geneva
<b>MIL</b>	Milan
<b>PRS</b>	Paris
<b>TLL</b>	Tallinn
<b>ZAG</b>	Zagreb

# 1. INTRODUCTION

## 1.1. Purpose and Scope

This deliverable provides a detailed evaluation of the CENTRINNO impact, after the completion of the pilot activities and towards the project closure. The final evaluation report has been structured based on the Impact Assessment Framework (thereafter IAF) and evaluation methodology [1] Specifically, impact is monitored and evaluated in three parallel processes of change, based on:

- (d) pilot outcomes (pilot-level impact), defined as changes in actions, behaviours, and relationships on behalf of the individuals and organisations the pilot activities seek to influence;
- (e) platform strategies (resource-level impact), related to the effectiveness of the project's resources in supporting pilots achieve their planned outcomes; and
- (f) organisational practices (project-level impact), related to the development of the necessary capacities to implement the CENTRINNO approach and sustain the achieved outcomes in the pilot areas and beyond.

The methodological approach has been designed to best serve the project's complexities and specificities that requires a definition of impact assessment as a **participatory and continuous process**. Impact assessment is seen as an integral part of the project's activities, aligned with the **CENTRINNO overarching vision** of fostering sustainable urban transformation by **turning city districts into Fab City Hubs** (thereafter FCH) (see section [2.1](#) for more details on the IAF). As such, the evaluation methodology provides tools and facilitates relevant processes for the project as a whole to **continuously monitor and evaluate the effectiveness of the project's framework, approach, and resources in delivering the desired impact**.

## 1.2. Contribution to Other Deliverables

First, the final impact assessment report integrates the evaluation methodology presented in D5.1 [1], and refines the defined processes of impact assessment and complementing the methodological tools used, based on their actual employment with the parties concerned.

Moreover, with the IAF being an integral part of the CENTRINNO framework, the evaluation builds upon and in turn contributes back to several project deliverables. The most important connections are presented below.

The final evaluation report builds upon the **CENTRINNO framework (D1.2)** [2] by providing insights on the interpretation of the five key concepts of the CENTRINNO approach through pilot activities and the effectiveness of the approach in enabling change (section [3.2](#)) and operationalising them into the **CENTRINNO Handbook (D1.3)**.

Moreover, the final evaluation report aligns with the development of the CENTRINNO platforms and their supporting activities, providing insights and reflections on the relevance of the tools and methods employed (see section [4.2](#)). In this direction, it contributes to all tasks and deliverables related to the development of the **CENTRINNO platforms**, including the final

versions of the Cartography (D2.6 [\[3\]](#)), the Living Archive (D2.7 [\[4\]](#)), and the FCH Toolkit (D3.4).

Specifically, on the **FCH Toolkit**, a central contribution of the evaluation methodology is the documentation of organisational practices for FCH implementation, based on the ten FCH principles (D3.1 [\[5\]](#)). Through this process, the evaluation methodology contributed to the FCH Toolkit, as well as the overall project's vision, by demonstrating how the project's activities and the tools employed enable and support the capacities of the pilot cities to implement FCHs (see sections [5.1](#), [5.2](#)). Moreover, with regards to the **Cartography**, the connection of the strategies (section [4.2](#)) and the organisational practices (section [5.2.2](#)) with local challenges complements the integrated presentation of the urban ecosystems using the doughnut model, as the evaluation follows the same classification.

Finally, the final evaluation report complements the pilot cities' **collective results** described in **D4.4**, by illustrating how pilot outcomes and strategies supported pilot cities in refining their planned activities, how the project's resources have been operationalised and synthesised, and how they achieved impact in terms of both performance in relation to the pilot KPIs, but also furthering the CENTRINNO approach.

### 1.3. Structure of the Document

The rest of the document is structured as follows:

Chapter 2 provides a brief overview of the CENTRINNO IAF and evaluation methodology to help navigate the rest of the sections. This includes a glossary for the terms necessary to follow the descriptions of various technical aspects of the methodology (section [2.1.1](#)).

Chapters 3, 4, and 5 summarise the monitoring and evaluation processes in the three levels described above, namely, **pilots** (outcomes), **resources** (strategies), and **project** (organisational practices). All three chapters are structured in two phases reflecting the evaluation methodology cycles of interactions, namely, design and planning (sections [3.1](#), [4.1](#), [5.1](#)) and monitoring and evaluation (sections [3.2](#), [4.2](#), [5.2](#)), including a step-by-step presentation of the tools employed on each phase.

Finally, Chapter 6 provides a synthesis of the project's impact drawing insights from all levels of monitoring and evaluation and a summary of the lessons learnt and next steps.

#### 1.3.1. How to read the document

Given the total length and technical nature of this document, we provide a list of alternative ways to navigate through it for different groups of readers:

1. **If you are interested to get a concise overview of the CENTRINNO impact**, we suggest you go through section [2.1](#) first, and then read sections [3.2.1](#), [4.2.1](#) and [5.2.2](#) for a quick overview of the achievements across the three parallel processes of monitoring and evaluation. Afterwards, you can look in more detail at your discretion for specific pilots, key concepts, or platforms in the relevant parts of sections [3.2.2](#) and [4.2.2](#), and the impact inventory analysis in section [5.2.1](#). Where deemed necessary, you may double check the validity of the findings presented by going through the design

and planning processes in sections [3.1](#), [4.1](#), and [5.1](#), accordingly. You may finish with reviewing the reflexions and summary of lessons learnt in sections [6.1](#) and [6.2](#).

2. **If you are a member of a CENTRINNO pilot team or any other (fab) city community or initiative**, you may read section [3.2.1](#) to gain a bird's-eye-view on the overall achievement of outcomes across all pilots and dive deeper into the areas that look more relevant to your pilot activities in section [3.2.2](#), learning from the experience of other cities. Moreover, you may benefit from looking at different tools and actions that help develop capacities for FCHs documented in section [5.2](#), and the summary of lessons in section [6.2](#).
3. **If you are interested in the impact of mapping and documentation or the three CENTRINNO platforms**, you may jump to section [4.2.1](#) to review the cumulative results on the effectiveness of the strategies developed across the three platforms through the mapped pathways of change, and dive deeper into the process in different pilot cities in the sub-sections following. For better comprehension of the pilot outcomes achievement, a reading of sections [3.1](#) and [3.2.1](#) can help.
4. **If you are an impact assessment enthusiast or a member of a CENTRINNO's WP or task**, you may go through sections [2.1](#), and [2.2](#) to familiarise with the methodological approach and then jump to section [5.2](#) to find a synthesis of the three parallel processes of monitoring and evaluation. Additionally, you can dive deeper in any of the three processes by going through chapters 2, 3, and 4, respectively.

### 1.3.2. Methodological notes

The CENTRINNO evaluation methodology is a dynamic process that can be adapted to rapidly changing requirements on behalf of the various parties involved, such as pilot partners, WP leads, and platform owners. Hence, **some methodological notes** are deemed necessary to better navigate the document and assess its content:

- The quantitative evaluation of the **pilot outcomes** is based on ratings provided by the pilot teams in a process of self-assessment following the completion of each recurrent pilot sprint, facilitated by the WP5 team (see section [3.1](#)). Therefore, the numbers reflect the participants' own perception of achievement with relevance to their initial planning. Critical checks and verification, where applicable, is provided by the WP5 team during the data analysis and compilation of the interim report. Nevertheless, some limitations related to self-assessment approaches still apply, while the scores reflect a relative rate of achievement rather than an absolute one.
- The monitoring and evaluation of **platform strategies** (see sections [4.1](#), [4.2](#)) has been a continuous process, carried out with the participation of platform owners (META for the Cartography, AHK for the Living Archive, and VOL for the FCH Toolkit). Simultaneously, the relevant tasks for feeding the platforms and other project resources in collaboration with the pilot teams, as well as the development of the infrastructures has taken place in parallel to the monitoring and evaluation process. Hence, the evaluation of the strategies' relevance and effectiveness in supporting pilot outcomes reflects both the planning, as well as the execution of the relevant interactions between the platform owners and pilot participants. In the event that the planning on either side

has changed in the course of a sprint or a change in priorities has occurred, the evaluation methodology factors such changes retroactively, where applicable.

- A similar note applies for the monitoring and evaluation of **organisational practices** (see sections [5.1](#) and [5.2](#)), for which appropriate methods for monitoring and documentation have been co-developed during sprints 2 and 3, with the participation of all involved parties, including local pilot teams, WP leads, and platform owners (see section [5.1](#) for details). Given the participatory approach of the project and the long-term perspective of its envisaged impact, the evaluation report attempts to reflect an integrated outlook on the project's performance in effectuating its vision.
- All complementary material, datasets, and worksheets are provided in the Annexes, though, data privacy measures may apply, which will be duly explained at the Final Data Management Plan (DMP) (D7.11).

## 2. METHODOLOGICAL APPROACH

### 2.1. CENTRINNO Impact Assessment Framework

The overarching aim of CENTRINNO is to *demonstrate the potential of creative and productive hubs as activators of new socio-economic dynamics in neglected industrial areas of European cities*. The project's **expected impact is reflected in the outcomes of the tools and methods implemented**, following the CENTRINNO framework, experimentation process and resources [1].

The CENTRINNO impact assessment framework (IAF) focuses on the monitoring and evaluation of **three continuous processes of change**, spanning from pilot-level to specific project resources and, finally, project-level, as described below:

1. **Outcomes (pilot-level):** This level concerns the monitoring and evaluation of the achievement of outcomes, understood as changes in terms of behaviours, relationships, and actions of the people, groups, or organisations with which the pilots work directly and seek to influence (boundary partners). Each pilot team determines at the beginning of every sprint a number of *outcome challenges*, along with *progress markers* reflecting graduated descriptions of achievement of these outcome challenges (see section 2.1.1 below for terminology; section 3.1.3 in D5.1 [1] for details).
2. **Strategies (resources-level):** This level is related to the processes of experimentation carried out by the three core CENTRINNO platforms, namely the Cartography, Living Archive, and FCH Toolkit. The evaluation reflects the effectiveness of the platforms' tools and methods in enabling the achievement of pilot outcomes, while building the necessary organisational capacities to maintain and improve these outcomes (see section 3.2.2 in D5.1 [1]).
3. **Organisational practices (project-level):** This level focuses on the monitoring and evaluation of the project's performance in implementing the CENTRINNO approach with the pilot cities. This is done through the documentation and assessment of patterns of organising that enable the transformation of city districts into FCHs. This level offers insights on the potential of maintaining and further advancing the project's outcomes and the systemic impact this may entail (see section 4.1.1 in D5.1 [1]).

Following the outcome mapping (thereafter OM) principles (see sections 2.1 and 2.2 in D5.1 [1] for details), the project's desired impact is not measured against a set of predefined indicators. The types of structural changes that are necessary to achieve sustainability objectives, such as reduction of material and resource use or reallocating work, far exceed the confines of what a single project can achieve within the timeframe of a few years. Moreover, given the complexity of urban realities, it is impossible to directly attribute specific results to the project's activities and vice versa.

Instead, CENTRINNO impact assessment focuses on processes of change that lead to the desired impact in the long-term. In other words, the project's activities are understood as **processes of activating and sustaining city-level transformation**, as envisioned by the CENTRINNO approach. For instance, instead of measuring how much CO<sub>2</sub> emissions or use of virgin materials has been reduced, how many jobs have been created, or heritage sites

renovated in the span of the project, we turn our attention on the types of individual and organisational changes that can lead to and sustain lower CO<sub>2</sub> emissions and virgin materials' use, alongside employment opportunities in sustainable forms of economic and cultural activities.

The CENTRINNO evaluation methodology is mainly adopting a values-based and normative approach, in the sense that it is based on certain perceptions of what would be a meaningful process of change in cities and how we can make it happen. These assumptions are provided by the CENTRINNO framework and are made explicit through the evaluation methodology and theory of change, as presented in the following sections. Nevertheless, quantitative measurement and performance indicators, using the diverse and rich datasets developed by the project (e.g., pilot KPIs, urban ecosystem mapping data) are operationalised into the theory of change, to testify on the achievement of the project's approach. In turn, understanding the limitations of measurement, the evaluation methodology uses a reflexive type of validation, by critically engaging with its own theory of change against the observed results.

### 2.1.1. Glossary

This report relies heavily on the methodological approach, which is defined in detail in D5.1 [1]. A comprehensive and self-contained overview of the methodology is evidently not possible to include in this document. Instead, we provide definitions for the key terms necessary for the comprehension of the evaluation report, with references to the relevant sections of the impact assessment framework for more details.

**Outcomes:** Changes in the behaviours, relationships, and actions of the people, groups, and organisations with whom a project works directly (see section 2.2 in D5.1 [1]).

**Outcome areas:** The five key concepts of the CENTRINNO framework, namely, circular economy, heritage, vocational training, innovation spaces, and social inclusion. In the IAF the key concepts are translated as areas of socio-economic and cultural activity in which pilots attempt to influence change.

**Outcome categories:** A typology classifying outcomes in four broad categories, namely, resources, awareness & skills, infrastructure, and networks & relationships. Those are further subdivided in several outcome types. The typology is used as a cross-cutting classification of outcomes across the diverse pilot contexts (see Annex I and section 3.1.2 in D5.1 [1]).

**Boundary partners:** Individuals, groups, and organisations with whom the project directly interacts, and which it seeks to influence (see section 2.2 in D5.1 [1]).

**Outcome challenges:** Statements describing the desired changes in behaviours, actions, and relationships on behalf of the boundary partners, occurring from the project activities' influence (see section 2.2 in D5.1 [1]).

**Progress markers:** Sets of graduated statements of the change defined in the outcome challenges. The statements advance in three degrees of achievement, starting from "expect to see"; to "like to see"; to, finally, "love to see", with reference to the behaviours, actions, and

relationships of the boundary partners (see section 2.2 in D5.1 [1]). The progress markers are planned in the outcome mapping sheets and documented in the outcome journals (see below).

**Outcome mapping sheets (OM sheets):** A planning and monitoring tool that organises the definition of outcome challenges, boundary partners, outcome types, and progress markers (see section 3.1.3 in D5.1 [1]). It includes the outcome journals, which are used for the evaluation of pilot outcomes (see below).

**Outcome journals:** A tool used by pilots to analyse the OM sheets' data and self-evaluate the achievement of their outcomes, including the rating of progress markers and description of change and sources of evidence (see section 3.2.1 in D5.1 [1]).

**Strategies:** Tools, methods and other means, and combinations of them, offered by the project to foster the desired outcomes (see section 3.1.4 in D5.1 [1]). Strategies connect downstream to pilot outcomes, by defining the means necessary for their achievement; and upstream to organisational practices (see below) by developing the capacities necessary to support and sustain these outcomes. In the CENTRINNO IAF strategies stem from the CENTRINNO platforms (see below).

**CENTRINNO platforms:** Digital tools, developed during the project supporting pilots in implementing context-driven micro missions. In the IAF the CENTRINNO platforms in focus are the Cartography, the Living Archive, and the FCH Toolkit (see section 3.1.4 in D5.1 [1]).

**Platform owners:** The CENTRINNO consortium partners responsible for the development and operation of the platforms. Specifically, META is responsible for the Cartography, AHK for the LA, and VOL for the FCH Toolkit.

**Strategy journals:** A collaborative board (Miro) connecting the CENTRINNO platforms' resources with the pilot outcomes, the latter provided by the OM sheets (see section 3.2.2 in D5.1 [1]).

**Organisational practices:** Skills, competences, and processes necessary for the project to remain effective, both during and after its life cycle (see section 4.1.1 in D5.1 [1]). A set of ten organisational practices have been identified for CENTRINNO, based on the ten FCH principles (see section 4.2 in D3.1 [5]). The organisational practices are documented in the performance journals (see below).

**Performance journals:** A tool documenting the key actions and tools and outcomes contributing to the development of the ten organisational practices identified for the project.

In addition to the above terms, in the final impact assessment report the following terms are being used, which have been developed throughout the last pilot sprint in engagement with the work of other WPs (presented in order of appearance in this document).

**Impact areas:** This term refers to the three dimensions of impact assessment, as defined at the project proposal and Description of Work, namely, socio-economic, environmental, and cultural heritage. In the final report the three impact areas are operationalised through their connection to and the Local challenges thematic pillars used in the Urban Ecosystem Baseline Doughnuts (see below).

**Urban Ecosystem Baseline Doughnuts:** In the final version of the CENTRINNO Cartography (D2.6) [3] due to some limitations of the originally planned mapping approach for the urban ecosystems using automated neighbourhood typologies, a change of approach has been deemed necessary by the WP2 team, which led to the development of the Urban Ecosystem Baseline Doughnuts, inspired by the Doughnut Economy model created by Kate Raworth [6]. The adapted version for CENTRINNO is classifying local challenges based on eight (8) thematic pillars, each further divided into two (2) sub-pillars as presented below.

**Local challenges thematic pillars:** The classification for local challenges used by the Urban Ecosystem Baseline Doughnuts is presented in the following table, including the correlation to the three impact areas.

**Table 1 - Local challenges thematic pillars and connections to impact areas**

Impact area	Local challenges thematic pillars	Sub-pillars
Socio-economic	Health & wellbeing	Physical and mental health
		Housing
	Economic inclusion	Income
		Employment
Environmental	Materials	Soil pollution
		Waste management
	Climate	GHG emissions
		Air pollution
	Biodiversity	Biodiversity loss
		Land use change
	Water	Water stress
		Water quality
Cultural heritage	Society	Learning & education
		Community life
	Culture	Multivoicedness
		Historical awareness

The above classification is followed through in all the subsequent sections. However, not all sub-pillars are covered by all cities, while some have not been addressed by any city.

**Pathways of change:** This term refers to consolidated narratives devised for each pilot city, which demonstrate the way the project's resources, including platform strategies, tools and methods, have been synthesised by the pilots to achieve their outcomes and develop FCH organisational practices. The term has been coined to bridge the evaluation methodology from the pilot-level to the project-level, using the platform strategies as an intermediary step for integrating parallel experimentation processes led by the CENTRINNO platforms, among other resources (see section [4.2.1](#)).

**Impact inventory:** This term refers to the main categories of the OM approach that the pilots have been using to influence and sustain change in their local environment, namely: (a) outcomes; (b) Tools; (c) Organisational practices; and (d) Impact. The classification has been developed in the context of a co-creation workshop, the results of which have been a key source of data for the compilation of this report (see sections [5.1.2](#) and [5.2.1](#)).

## 2.2. Synthesised impact: Addressing socio-economic, environmental, cultural heritage challenges

Based on the project's original planning, the CENTRINNO approach is evaluated from a **socio-economic, environmental and cultural heritage** point of view. There are several challenges and limitations with this approach that the evaluation methodology attempts to address.

First, as explained above, the attribution of measurable outcomes to project activities in a complex city context is technically impossible, but also ethically undesirable. Moreover, it is unwise to separate the attainment of socio-economic targets from environmental and cultural heritage ones. For instance, socio-economic targets, such as economic growth or job creation, are directly connected to certain levels of resource use and emissions generated. Likewise, there are different ways to preserve and valorise cultural heritage, that lead to, respectively, different socio-economic and environmental outcomes.

The task of evaluation is not to measure the performance of the project's *results* against a set of predefined targets, but to evaluate the performance of the project's *approach* in effectuating the envisioned regenerative transformation of cities. This transformation is in turn expected to have a substantial impact in the long run from a socio-economic, environmental and cultural heritage point of view. In line with the OM approach, these three dimensions of impact are not a yardstick for the project's performance, but a directional beacon that informs and guides the relevance of the project's approach.

Hence the monitoring and evaluation processes of the CENTRINNO impact assessment are unified across the three dimensions. The identification of impact on any one of them in particular is documented through the development of organisational practices for FCHs (see section [5.2](#)), by **tracing back connections to how pilot cities made use of the project's resources (including tools and outcomes) to address local challenges**. We refer to it as "synthesised impact" because it occurs from the synthesis of the CENTRINNO processes of change on various levels, on one hand, and diverse datasets from the results of the project's

experimentation processes. In other words, the IAF is aligned with a vision of enabling and supporting long-term transformation, of the type envisioned by the CENTRINNO approach. This type of transformation can only be achieved by the people, and for the people involved, through the change of mindsets and behaviours on individual level, the employment of appropriate tools and methods, and the development of the necessary capacities, relationships, and infrastructures to organise and further support broad-scale transformation. In turn, the evaluation of the project's performance using measurable indicators (see section [5.2.2](#)) is merely presented as an illustrative testimony for a long and complex process of change.

### 3. EVALUATION OF OUTCOMES: PILOT-LEVEL IMPACT

The monitoring and evaluation of impact on the level of the CENTRINNO pilots focuses on the outcomes of the pilot activities as instances of observable change and the strategies employed to achieve them. To operationalise the OM methodological approach, the CENTRINNO key concepts are employed for the definition of outcome challenges. Furthermore, a typology of outcomes has been developed to help pilot participants identify different opportunities to influence change. Simultaneously, the outcome typology provides a common framework of reference across the pilot cities to align the relevant strategies employing the tools and resources offered by the project.

Details on these processes and the relevant methodological tools developed by the evaluation methodology are provided in the following sections.

#### 3.1. Planning: Outcome mapping sheets

The planning of outcomes' monitoring and evaluation was carried out at the beginning of sprint 3 by the pilot teams in each city, facilitated by the WP5 team. For the planning the teams filled in their outcome mapping (OM) sheets, structured as follows (see Figure 1 for visual reference):

1. **Outcome areas:** The starting point of the OM sheets are the five outcome areas, corresponding to the five CENTRINNO key concepts. The structure follows the planning of micro-missions in the pilot action plans to help the pilots align their activities with the envisaged outcomes. The alignment between outcome mapping and the pilot action plans ensures compliance of the evaluation methodology with the planning of the pilot activities, and provides better understanding of how the CENTRINNO key concepts are materialised in the pilot cities' visions and outcomes.
2. **Outcome challenges:** Outcome challenges are statements describing the desired changes in behaviours, relationships, or actions on behalf of the targeted people and organisations the project seeks to influence. They are meant to be idealistic but realistic. Outcome challenges reflect the most profound transformation possible and incorporate multiple changes within a single statement, as changes in people, groups, and organisations cannot be understood in isolation from one another. Up to two outcome challenges are defined for each one of the outcome areas addressed in each sprint.
3. **Boundary partners:** Pilot participants identify the individuals and organisations they seek to influence to meet the outcome challenges defined. The boundary partners may be found among the stakeholders identified in the pilot action plans or be further specified in the process, as the planning and implementation of pilot activities progresses. For each outcome challenge, there can be up to five boundary partners targeted.
4. **Outcome typology:** Due to the range and variety of outcomes defined across the pilot cities, a typology of outcomes provides a cross-cutting framework of reference. The

pilot teams classify their desired outcomes in four broad outcome categories, namely: (a) resources; (b) awareness and skills; (c) infrastructures; and (d) networks and relationships. These categories are further subdivided in several outcome types, (see detailed description of outcome categories and types in Annex I).

5. **Progress markers:** Pilot participants define graduated statements of achievement towards meeting an outcome challenge. The progress markers advance in degree of success from what pilot participants *expect to see*, to what they *like to see*, and, finally, *love to see* in terms of change on behalf of the boundary partners. Up to five sets of progress markers are defined for each outcome challenge, each one connected to a particular boundary partner and outcome category/type (see outcome typology above, and Annex I).
6. **Contribution to KPIs:** Finally, pilot participants make connections, where applicable, to the KPIs defined in their pilot action plans. This helps retain relevance of the pilot activities' outcomes with the project's planning, while providing a more nuanced description of the performance targets.

A visual presentation of the OM sheets' structure is provided by Figure 1 (see Annex II for a readable version in full definition).

Mission and Objectives		Boundary Partners		Outcome Typology			Progress markers			
Outcome Areas	Outcome challenges	Partner Type	Partner Description	Outcome Categories	Outcome Types	What do we expect to see?	Score	What would we like to see?	Score	What would we love to see?
Circular Economy	CENTRINNO cartography helps the pilot to better understand the connections, gaps and opportunities (productivity potential) for local circular activities	Community	Make Works La Clandestina	Awareness_and_Skills	Knowledge/Info circulated	10 stakeholders are interviewed	3	Data are accessible on Kumu	3	Kumu maps used as a showcase
		Community	Make Works La Clandestina and others Local	Awareness_and_Skills	Knowledge/Info circulated	8 new manufacturers are listed for Make Works Clandestina	3	Profiles are added to the Make Works Platform	2	New manufacturers become interested in Make Works by
		Non_profit	Transfab, TMDG (Maker spaces and Fab Labs)	Awareness_and_Skills	Skills developed/exchanged	The variety of new manufacturers in Make Works	3	Manufacturers are invited to join pilot activities and meet	2	Local manufacturers exchange resources (materials, spaces)
	Wood Stock Analysis shows the potential circular wood economy in the area of Poblenou	Market	22@network (private companies network in)	Awareness_and_Skills	Knowledge/Info circulated	Identification of current wood-using businesses at a city scale	3	Identification of existing circular uses of wood at a city scale	3	Forum of existing initiatives around circular wood uses are
		Community	Make Works La Clandestina and others Local	Infrastructures	New spaces/businesses/institutions	Identification of spaces, machines, tools available in	3	An overview of the main stakeholders working with wood	3	Inspire how circular business models around wood could be
		State	Ateneus de Fabricació (Public Fab Labs)	Networks_Relationships	New topics/opportunities of dialogue/collaboration between	Identification of spaces, machines, tools available in	3	An overview of the main stakeholders working with wood	3	Users of the Ateneus de Fabricació have access to the
Heritage	Local stakeholders active participation in a campaign to co-create the living archive office exhibition	Community	Local citizens and neighbours	Resources	Resources shared (stories, materials, etc.)	Development of activities hands-on workshops, FN	2	Increase the number of general public reached through public	3	Collection of meanings, stories and values behind selected
		Community	Local artists from Poblenou Urban District Network	Resources	Resources shared (stories, materials, etc.)	Development of activities hands-on workshops, FN	2	Local artists, makers, manufacturers participating in	2	Collection of meanings, stories and values behind selected
	Non_profit	MURBA Oliva Aries (Historic museum of Barcelona in BR Habitat (Urban Innovation Assoc))	Infrastructures	Revised/Regenerated spaces	Re-connect the stakeholder and propose a collaboration for	3	Representatives participate in the activities and understand its	1	Space is confirmed to host the itinerant exhibition in 2023	
	State	BR Habitat (Urban Innovation Assoc)	Infrastructures	Revised/Regenerated spaces	Re-connect the stakeholder and propose a collaboration for	2	Representatives participate in the activities and understand its	1	Space is confirmed to host the itinerant exhibition in 2023	
	Non_profit	Taula Eix Pere IV, AA/VV Poblenou, Col·lecció Suecilla	Resources	Resources shared (stories, materials, etc.)	Establishing a collaboration with the organizations for joint	2	Select some topics (heritage elements) to include in the next	2	Increase the participation and interest of citizens and	
	Community	Local citizens and neighbours	Resources	Resources generated	Improve collection of historical and recent data on local cultural	2	Living Archive is presented and used during the FN workshops	1	Barcelona Living Archive platform showcasing the	

Figure 1 - Example of a filled in outcome mapping sheet from BCN pilot

### 3.2. Monitoring and Evaluation

The monitoring and evaluation on pilot-level is a **continuous and participatory process**. This process is documented in the **outcome journals**, in which pilot participants collect and systematise data on the achievement of the progress markers and outcome challenges. The outcome journals are embedded in the OM sheets and the data were updated on regularly agreed upon intervals during and at the end of each pilot sprint.

The outcome journals are structured on the level of outcome challenges, with one journal entry for every outcome challenge defined in the pilot sprint to monitor and evaluate the achievement of the planned outcomes as follows (see Annex II for visual reference):

1. **Scoring/Rating of the progress markers:** All the progress markers defined for each outcome challenge are rated to evaluate the observed level of change with reference to the boundary partners concerned. The achievement of the change described in each progress marker is rated as low (L = 1 point), medium (M = 2 points), or high (H = 3 points). As there is diversity across progress markers' descriptions connected to different key concepts, outcome challenges, or pilot cities, there are two alternative rating schemes that pilot participants use to rate their achievement as L, M, and H, namely:
  - a. For progress markers exhibiting **quantitative aspects** (e.g., number of participants in events, number of events, number of prototypes, etc.) rating is based on percentages, i.e., for a stated number, L = up to 30% achievement; M = between 31% and 60%; and L = between 61% and 100%.
  - b. For progress markers exhibiting **qualitative aspects** (e.g., positive attitude to local heritage, increased awareness around circular economy, etc.) rating reflects the quality or consistency of change on behalf of the boundary partner, i.e., L = the partner has taken actions against or ignored the desired outcome; M = the partner has been passive but there is nothing negative to report; and H = the partner has undertaken specific actions in favour of the outcome.

An aggregate score is provided for each line of progress markers, by adding up all points from the three graduated progress markers defined (i.e., lowest score = 3, highest score = 9).

Each one of the progress markers is rated separately (e.g., a *love to see* change is possible to be achieved without necessarily the *expect to see* or *like to see* statements being achieved). The independent rating of all progress markers allows for greater variety and nuance to be retained in the evaluation methodology.

2. **Description of change:** A description of the observed changes is provided in connection with the boundary partners. Information is provided about actions undertaken or attitudes observed by the partners reflected in the progress markers defined for an outcome challenge.
3. **Contributing factors and actors:** Additional factors or actors contributing to the observed change (or not) are described, which are believed to have significantly affected the outcomes.
4. **Sources of evidence:** Sources of evidence are noted on which the evaluation of the situation is based.

In the following section a quantitative and qualitative evaluation of the pilot outcomes is provided, by synthesising different sets of data from the OM sheets for each pilot city.

### 3.2.1. Cumulative results (all pilots)

We begin the evaluation with a cumulative presentation of the results of the OM sheets of all pilots. Table 2 provides an overview of the number of outcome challenges and targeted

outcomes (i.e., entries connected to a boundary partner, comprising one set of progress markers) for all pilots, during Sprint 3. Next to them we present the average of the aggregate scores of all progress markers, along with an average weighted by the total number of outcome challenges and targeted outcomes.

**Table 2 - Cumulative results per pilot during Sprint 3**

	No. of outcome challenges (max 12, 2 per area)	No. of targeted outcomes	Average Score	Weighted score
<b>Amsterdam</b>	10	39	<b>5.5</b>	<b>5.5</b>
<b>Barcelona</b>	10	30	<b>6.9</b>	<b>6.9</b>
<b>Blönduós</b>	9	38	<b>7.0</b>	<b>7.2</b>
<b>Copenhagen</b>	8	37	<b>6.7</b>	<b>6.5</b>
<b>Geneva</b>	8	23	<b>5.8</b>	<b>5.7</b>
<b>Milan</b>	6	13	<b>6.7</b>	<b>7.2</b>
<b>Paris</b>	9	39	<b>6.2</b>	<b>6.3</b>
<b>Tallinn</b>	6	26	<b>7.3</b>	<b>7.4</b>
<b>Zagreb</b>	10	28	<b>7.2</b>	<b>7.1</b>

Similar to sprint 2, we notice a significant variation in the way the pilots have decided to structure their OM sheets, and in particular the number of challenges and targeted outcomes defined. This, as described in detail in D5.2, is indicative of the nature of OM as a methodology, which provides flexibility as regards the type and number of targets set by individual pilots, according to each individual context and local priorities. The planning as well as the evaluation of the OM sheets was conducted in a participatory fashion within each pilot team. Therefore, the aggregated results only present the relative success of each pilot with regards to its own set targets, and comparisons between pilots are not indicative of greater or lesser success among them.

At the level of outcome challenges, **Amsterdam**, **Barcelona** and **Zagreb** set the highest number of challenges (**10 each**), while **Milan** and **Tallinn** with **6 each** were the cities with the least outcome challenges set. **Milan** was also, consistently, the city with the least number of targeted outcomes (**13**), while **Amsterdam** and **Paris** (with **39**) and **Blönduós** (with **38**) outlined the most. This variation did not seem to have a significant effect on the relative success on the ranking of the markers. For example, **Amsterdam** and **Blönduós**, while having almost the same number of targeted outcomes, averaged the **lowest (5.5)** and third **highest (7)** score. Perhaps the most interesting case is that of Copenhagen, as the pilot decided to drastically change their approach from the previous sprint. Sprint 3 saw a doubling of their outcome challenges (from 4 to 8), and a shift from a low of 12 to 37 targeted outcomes. At the same time, their average score slightly fell from 7.4 to 6.7.

Next, Table 3 presents the total number of outcome challenges and targeted outcomes from all pilots, and the aggregate score of their respective progress markers across the five outcome areas.

**Table 3 - Cumulative results per outcome area**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
<b>Circular Economy</b>	16	56	<b>6.7</b>
<b>Heritage</b>	14	51	<b>6.4</b>
<b>Vocational Training</b>	15	58	<b>6.4</b>
<b>Innovation Spaces</b>	16	59	<b>6.7</b>
<b>Social Inclusion</b>	15	49	<b>6.8</b>

Here we see an almost perfect distribution of both outcome challenges and targeted outcomes across the five outcome areas, and an almost identical average score received, even more so than in the previous sprint. **Social inclusion** had slightly fewer targeted outcomes than the rest of the areas and achieved the highest score (**6.8**).

To identify any significant differences, we delve deeper in the analysis in Table 3, which presents the cumulative results of the targeted outcomes across outcome categories and types.

**Table 4 - Cumulative results per outcome typology**

Outcome Category and type	Targeted outcomes	Score
<b>Resources</b>	<b>33</b>	<b>6.6</b>
<i>Resources generated</i>	11	6.7
<i>Resources mapped</i>	9	5.8
<i>Resources re-used</i>	5	7.4
<i>Resources shared (stories, materials, etc.)</i>	8	6.7
<b>Awareness and Skills</b>	<b>102</b>	<b>6.4</b>
<i>Knowledge/Info circulated</i>	40	6.5
<i>Skills developed/exchanged</i>	34	6.7
<i>Capacity built/strengthened</i>	28	6.2
<b>Infrastructures</b>	<b>27</b>	<b>7.0</b>
<i>Revived/Regenerated spaces</i>	15	6.3
<i>New spaces/businesses/ institutions</i>	5	7.3
<i>New jobs/Employment opportunities</i>	7	7.5
<b>Networks Relationships</b>	<b>66</b>	<b>7.3</b>
<i>Connections between different communities forged</i>	27	7.1
<i>New topics/opportunities of dialogue/collaboration between authorities and citizens</i>	31	6.7
<i>Networks between areas/cities created</i>	8	8.0

Results show that the overwhelming majority of targeted outcomes focused on the category of **'Awareness and Skills'** (102 entries), an increase of about 30 entries from the already large

set in sprint 2. Interestingly, although the average score of this category remained at **6.4**, this number in sprint 2 was the highest score, while in sprint 3 the lowest among outcome categories.

This is due to the fact that all of the other categories recorded more favourable average scores than in the previous sprint. In particular, the **'Networks and Relationships'** category, the second most selected in terms of targeted outcomes (**66**), received an average aggregate score of **7.3**. Within this category the type **'Networks between areas/cities created'** recorded a high score of 8, albeit with 8 targeted outcomes.

Regarding the **'Infrastructures'** category, once again most of the outcomes focused on the **'Revived/Regenerated spaces'** (**16** entries), but those received generally lower scores than the other types within this category (new spaces, new employment opportunities). On the contrary, targeted outcomes within the **'Resources'** category was this time more evenly distributed among the four different types, and did not display significant variation in terms of scoring.

Next, Table 5 displays the outcome category results distributed to the different outcome areas. **Table 5 - Cumulative results per outcome area and outcome category**

	Resources		Awareness & Skills		Infrastructures		Networks & Relationships	
	Targets	Score	Targets	Score	Targets	Score	Targets	Score
<b>Circular Economy</b>	15	<b>6.7</b>	21	<b>6.3</b>	8	<b>6.7</b>	12	<b>7.0</b>
<b>Heritage</b>	9	<b>5.8</b>	25	<b>6.6</b>	9	<b>6.7</b>	8	<b>7.2</b>
<b>Vocational training</b>	7	<b>6.4</b>	36	<b>6.5</b>	5	<b>5.7</b>	10	<b>6.6</b>
<b>Innovation spaces</b>	4	<b>7.2</b>	12	<b>6.7</b>	11	<b>7</b>	30	<b>7.0</b>
<b>Social inclusion</b>	4	<b>7.0</b>	21	<b>6.7</b>	4	<b>7.2</b>	20	<b>7.1</b>

Here we can see what type of strategies were predominantly used for each outcome area. For example, we notice that in sprint 3 strategies revolving around **'Awareness and skills'** were mostly used in order to achieve the targets set about **'Vocational Training'** (**36** targeted outcomes), and **'Heritage'** (**25** targeted outcomes). Another preferred strategy has been to use **'Networks and Relationships'** (**30** targeted outcomes) in order to achieve targets set within the outcome area of **'Innovation Spaces'**.

As regards the success of strategies deployed, high scores were recorded for strategies revolving around **'Networks and Relationships'**, across most outcome areas. Strategies about **'Infrastructures'**, and **'Resources'**, on the other hand, were slightly more successful when deployed on targets akin to **'Innovation Spaces'** and **'Social Inclusion'** (average scores 7, and 7.2).

Finally, Table 6 breaks down the results according to the boundary partners involved.

**Table 6 - Cumulative results per outcome area and boundary partner**

	State		Community		Market		Non-profit	
	Targets	Score	Targets	Score	Targets	Score	Targets	Score
<b>Circular Economy</b>	11	<b>6.3</b>	22	<b>6.7</b>	8	<b>6.7</b>	16	<b>7.2</b>
<b>Heritage</b>	10	<b>6.1</b>	24	<b>6.8</b>	6	<b>6.5</b>	11	<b>6.7</b>
<b>Vocational training</b>	8	<b>6.9</b>	14	<b>6.0</b>	7	<b>5.8</b>	29	<b>6.8</b>
<b>Innovation spaces</b>	13	<b>6.6</b>	15	<b>7.2</b>	10	<b>7</b>	19	<b>6.9</b>
<b>Social inclusion</b>	10	<b>6.1</b>	14	<b>6.5</b>	7	<b>6.7</b>	18	<b>6.9</b>

Following from sprint 2, we notice again that most of the strategies aimed at **community actors** (89 entries) and **non-profit organisations** (93 entries). Average scores, however, did not significantly vary between boundary partners, with strategies including non-profit organisations receiving the highest overall score (6.9).

Market actors were primarily involved in strategies relating to ‘**Innovation Spaces**’, and were more successful in this outcome area, averaging a score of 7. Finally, regarding state boundary partners, those were mostly involved in relation to ‘**Innovation Spaces**’ (13 entries), and were most effective in strategies about ‘**Vocational Training**’ (average score 6.9).

### 3.2.2. Description of change (per pilot)<sup>1</sup>

Next, we present the description of change for each pilot in sprint 3. We begin with a more local perspective, summarising what was perceived as ‘the most significant change’ of the sprint, according to the pilots themselves. Then, we outline the description of change in each of the outcome areas, demarcating the contributing factors and actors in this process, together with occasional unanticipated changes, and lessons learned from the activities performed.

#### 3.2.2.1. Amsterdam pilot

##### Most Significant Change<sup>2</sup>

The most significant change for the Amsterdam pilot in Sprint 3 has been the **mindset shift** that happened during this period amongst both makers and policy makers. The pilot noticed that by consistently raising awareness for the difficult situation of the makers in the city, policy makers started to show **more interest** than before to change the situation and work on policies that offer more security in the future. At the same time makers themselves felt like their cause was taken more seriously by the rest of the city.

<sup>1</sup> A Link to all pilots’ outcome mapping sheets and journals can be found in ANNEX [II](#).

<sup>2</sup> The “most significant change” reflects the pilot teams’ members personal outlook and perception, from their experience during the second sprint.

In addition, from the perspective of the HMC (<https://www.hmcollege.nl>), the most significant change has been the rental of a physical space as HMC and Maakschap Amsterdam, which will help in creating a learning HUB. HMC is opening up the facilities and they are working together to sustain makers in Amsterdam.

**Description of change and lessons learned**

**Table 7 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Amsterdam**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	2	8	6.8
Heritage	2	9	5.0
Vocational Training	2	9	4.9
Innovation Spaces	2	8	5.4
Social Inclusion	2	5	5.6
<b>TOTAL</b>	<b>10</b>	<b>39</b>	<b>5.5</b>

- Circular Economy

The goals set out by the Amsterdam pilot regarding circular economy have been (i) engaging makers to collaborate and contribute to the transition towards a circular economy, and (ii) support the municipality to reach its goals on circularity within the city of Amsterdam using Cartography data. Both goals received generally favourable progress marker scores (average score **6.8** over **8** targeted outcomes). During sprint 3 there has been an increased awareness of the challenges of circular making and of what a city needs in order to become fully circular in 30 years. Somewhat unanticipated, the municipality began to better understand the importance of local makership. An important lesson learned was that circularity is only possible when people have the opportunity to invest in the longer term. As makers in Amsterdam (large or small) are under pressure due to usually very short term rental contracts, they don't always have the possibility to work and think more 'circular'.

The pilot has continued the work started on Sprint 2 on a cartography project that details makers in the area, their engagement with circular practices, and their access to physical workspace within **Noord** (as well as the availability of this space moving forward). This cartography, as well as desk research into existing data on the past and present maker environment in the area, will serve as a foundation for advocating for policy that supports makers.

- Heritage

As regards heritage the focus was on (i) mapping intangible heritage and stories of craftspeople around the Noord, and (ii) raising awareness about the value of this intangible heritage of craftsmanship for the current maker community, potentially connecting traditional

crafts to contemporary makership. A variety of maker stories has been collected through the work with the Living Archive and the KUMU map. While some of these stories focused on the future of makership in the area, others focused on the connections between the past and the present. Worth noting is that the bigger industrial areas also see the benefits of cooperating with Makers van Noord, as working side by side helps all makers to become more circular. Work in Sprint 3 touched upon raising the awareness of intangible heritage mainly through highlighting the continuous narrative of makership in Noord.

A lesson learned was that while many are aware of the industrial past of the region, connections between makership of that time and today are not often immediately drawn. This realisation needs to be thoroughly considered when moving forward, in an effort to make heritage more explicit in future work and for those engaged. Connecting former industrial workers to present day makers has proven difficult as many past workers have either left the area or are deceased.

- Vocational training

Work on vocational training revolved around the following goals: (i) to have vocational education, makers and more informal learning organisations work together in a hub to maintain and stimulate (circular) makership for the city through the use of training and resources; and (ii) to make makers and their stories visible to students and alumni of the vocational college (HMC) in order to encourage them to become sustainable makers, and investigate, together with partners, how new target groups for makership can be enthused. Progress marker scores were less successful in this outcome area (average score 4.9 over 9 targeted outcomes), in particular regarding the willingness of alumni to become makers.

On a more positive note, on one of the open HMC Lab nights the pilot connected to the NDSM-wharf former shipyard area, which led to the establishment of a physical space in the area. This place, while not completely finished, opens new perspectives and ideas for the future, such as planned events on circular learning and innovative ways of teaching. Maakschap Amsterdam has also a visible spot which makes it more “real” and, overall, there now exists a more formalised network with common goals and actions. In HMC the events and activities of CENTRINNO raised awareness about the necessity of more innovative teaching methods. HMC is more aware and this year starting a two-year project called “HMC innovates” in which they research new ways of teaching and learning for a circular economy.

- Innovation Spaces

In the innovation spaces outcome area, the focus of the Amsterdam pilot was (i) to strengthen the distributed hub spatial strategy, by connecting existing makerspaces and workshops, as well as the policy of the municipality on creative spaces, and (ii) to further develop the Open Werkplaats concept as networking strategy for the CENTRINNO distributed hub concept though open events at HMC.

After launching the Maakschap Amsterdam platform, a series of stakeholders, in particular the makers of the area, created a sustainable network in which the shared knowledge becomes a tool for change. What was different from the previous sprint was the continuity of meetings and the predetermined identification of a shared goal, namely to achieve better policy and more sustainable work. The variety of different opinions about the situation of makers and the future governance of such a community showed a general willingness to make something big out of the Maakschap, but also raised attention about keeping the process open and democratic.

In addition, the Open Werkplaats enlarged the network of makers, boosted their knowledge on the different types of craftsmanship and created a strong political actor necessary for lobbying efforts. Contrary to the Maakschap, it is much easier to join the Open Werkplaatsen, as this does not require continuous action, and it is hoped that this will motivate small changes among a larger group of makers. Overall, there is strong desire to be involved in policy dialogue, an issue addressed multiple times at the Open Werkplaatsen.

- Social Inclusion

Finally, goals related to social inclusion were: (i) to engage aspiring makers in the Amsterdam open schooling community (Technasium - senior general secondary & pre-university education HAVO/VWO, and Maakplaatsen - pupils 8-12 years, often from less advantaged areas), and (ii) to diversify communication channels and strategy to reach a broader public from diverse backgrounds (e.g. small physical exhibition on makership geared towards new and old residents of Noord).

The “Make it Open” event and website succeeded in connecting students of various schools to the neighbourhood. Several other partners were connected to the students, while both students and teachers were informed about circularity. Moreover, by organising Open Werkplaats events, meetings for the Maakschap, events at Pakhuis de Zwijger and educational events at HMC, the residents of Amsterdam and policy makers could better understand the complexity of the problem of makers. Diverse communication strategies were important in ensuring people remained engaged in different ways with the issue.

### **3.2.2.2. Barcelona pilot**

#### **Most Significant Change**

For the Barcelona pilot, the most significant change has been that the various and sustained project activities (e.g. exhibition, hackathon, webpage and communication activities) resulted in the creation of an **active hub**, and the emergence of a group of **collaborative** and **productive spaces**. Now there are around 20 organisations willing to collaborate, to work together in a trustful relationship and motivated to hold group meetings. Even if the end goal is still unclear and the governance structure of this loose association is still in the making, the important thing for them is “knowing we are not alone, but part of a collective”.

What is more, a significant development has been the forging of stronger bonds with the municipality, as well as the generation of more robust relations between the public and private sectors, including maker spaces, the public network of Fab Labs (Xarxa d'Ateneus de Fabricació), and a series of grassroots organisations.

### Description of change and lessons learned

**Table 8 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Barcelona**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	2	8	7.1
Heritage	2	6	7.0
Vocational Training	2	7	6.0
Innovation Spaces	2	4	7.8
Social Inclusion	2	5	6.8
<b>TOTAL</b>	<b>10</b>	<b>30</b>	<b>6.9</b>

- Circular Economy

Regarding circular economy, the Barcelona pilot has aimed for (i) the bottom-up ecosystem mapping to help them better understand the connections, gaps and opportunities for local circular activities, and (ii) the Wood Stock Analysis to show the potential of circular wood economy in the area of **Poblenou**. Both were favourably scored, with an average score **7.1** over 8 targeted outcomes.

The Barcelona cartography on KUMU had many iterations and different maps were produced. After a first analysis of opportunities identified, the local team curated a series of circular stories focused on wood for the physical exhibition. Showing the results in an interactive format (with texts translated in 3 languages) helped to spread the results gathered during the initial phases of the project. Moreover, the studies carried out on local wood recovery allowed the publication of a blogpost, the collaboration with master courses, the inclusion of content and structures in a physical exhibition, and the potential collaboration with experts for new proposals.

It was important to reach actors of different sectors (public, private, educational) to show the results and the possibility to reuse/recycle discarded wood for new purposes. The pilot managed to recover wooden strips from the Mobile World Congress (one of the biggest fairs in Barcelona) and create (designing and producing) modular stands for exhibitions with local manufacturers. This practical example on how to repurpose leftover materials was a good strategy to exemplify the theoretical studies carried out. After the end of the exhibition, the pilot received three additional requests from different projects and partners to reuse the stands, as well as requests for producing new structures.

- Heritage

Goals identified in relation to heritage were that (i) local stakeholders show active participation in a campaign to co-create the Living Archive offline exhibition, and (ii) citizens and non-citizens of Barcelona to be engaged with the history of Poblenou and its potential as a circular, inclusive and productive neighbourhood.

The content and structure of the exhibition was a result of a collaborative and participatory process with many local actors and citizens. The concept of a '**laboratory exhibition**' from the beginning, combined with the preparatory workshops open to the community, allowed the involved people (citizens, artisans, historians, makers) to feel a sense of belonging to the common project - valorizing the productive identity of Poblenou. A brief description of the methodology and results of previous emotion networking sessions were included in the exhibition. The history, curiosities, timeline and facts of four (4) emblematic heritage buildings of Poblenou were curated by an external expert and displayed in banners (comparing their past, transformation and current status). In collaboration with the local historical archive (Arxiu Històric del Poblenou), a guided tour (supported by digital cartography) was carried out through one of the most important roads that connected the industrial zone of Barcelona to France back in the 60s, the Pere IV axis.

A series of factors helped the pilot to better engage with local actors, namely having a concrete and attractive agenda for the exhibition, including key stakeholder names in the events, as well as having the exhibition hosted at one of the most symbolic heritage sites of Poblenou. The activities of the pilot allowed local actors to know other initiatives led by the pilot members, while new opportunities for collaboration have emerged due to good relations and trust creation. Even though the pilot had a central role in coordinating activities (for example in the execution of the large collective embroidery panel, and the development of the exhibition agenda), it was positive to distribute the work and responsibilities among the external partners. Leaving certain such decisions to the stakeholders helped the creation of a stronger connection and trust.

- Vocational training

In the vocational training outcome area, the following goals were set: (i) vocational training students implementing solutions for local challenges based on methods and activities developed within CENTRINNO School Barcelona, and (ii) organisations and companies willing to collaborate or hire students (scholarship or employment) after the Hackathon experience.

A second edition of the CENTRINNO School Barcelona Hackathon was organised for more than 1000 vocational training students, proposing solutions for challenges set by local companies and organisations. The methodology used was design thinking based on agile methodologies. The high willingness of vocational students in joining the Hackathon was unanticipated, as well as the really good acceptance of design thinking methodology by them.

Moreover, local companies have agreed, for the first time, to potentially hire students that fit in their companies thanks to the challenge developed during the Hackathon. Some students experienced some lack of communication with their employer, but these were finally solved.

Overall, there is a need in creating a roadmap between students, companies and organisations and clarify the allocated budget for the development of each project solution. Also crucial is to have a closer follow-up with the students and professors, in order to keep them engaged in the process.

- Innovation Spaces

As regards innovation spaces, goals set were that: (i) a concrete agenda of activities is developed by the pilot at Fab Lab Barcelona (IAAC) before the exhibition, and (ii) that Fab City Hub Barcelona is temporarily hosted at Ca l'Alíer as a showcase of temporary use of Heritage sites. Both goals were exceptionally ranked, contrary to the previous sprint, leading to a high score in this outcome area (average score **7.8** over **4** targeted outcomes).

Following the participatory approach for co-creating the local exhibition, **10** workshops were co-organized by the pilot and Make Works Catalonia members, and facilitated by local manufacturers in the Fab City Hub Barcelona and at La Clandestina Poblenou (external partner). All the logistics, communication and materials were provided by Fab Lab Barcelona. At this stage (preparatory phase) there was no involvement from policy makers. However, the results from the activities influenced the support given by public institutions for the exhibition for the next phase. Having a concrete agenda of activities before the exhibition was a good strategy to engage with local manufacturers and citizens. The participants who attended the preparatory workshops at FCH and La Clandestina could see the results of their participation in physical objects exhibited at Ca l'Alíer.

Moreover, through a negotiation done with support of FLB's executive director, the pilot got the approval to use the main corridor and other facilities of the Ca l'Alíer as an extension of the Barcelona Fab City Hub. The agreement was signed for 45 days, at no additional cost. Crucial for this successful development was to have an initial formal presentation showing results from previous phases (hackathons, workshops, urban talks) to the persons responsible, as well as an explanation about CENTRINNO and the impact of collaborating in the consortium. It was also very positive to include in the proposal, in addition to the use of the space for a physical exhibition, the development of a concrete agenda of activities (open to the community).

- Social Inclusion

Regarding social inclusion, the Barcelona pilot set the following targets: (i) seeing citizens interested in enhancing (valorizing) material and immaterial heritage through co-creation of ideas (ii) engagement of existing initiatives/stakeholders connected to social inclusion in Poblenou.

The pilot participated in events organised by external partners in order to disseminate the activities, using alternative sources of communication to reach local people in order to reach further than the audience who already follows social media accounts. To this end, banners and posters were distributed around public spaces in the neighbourhood. Alternative ways of (offline) communication and dissemination are necessary to reach a broader audience.

Members of the pilot took the time to produce graphical materials in Catalan and Spanish and distributed them around public spaces in the neighbourhood (libraries, civic centres, markets).

Finally, there was increased participation of social initiatives in the pilot activities such as attending workshops, offering a challenge for the FP Challenge/hackathon, open air cinema, while some social organisations helped to disseminate information about the events and activities. This highlighted the importance of collaborating with social organisations and sharing responsibilities, as well as providing the basic infrastructure to cover the expenses of events.

### 3.2.2.3. Blönduós pilot

#### Most Significant Change

For the Blönduós pilot the most significant change achieved during Sprint 3 has been the increased level of **confidence** within the team. The pilot strongly believes in the concept they have been working with - developing the Textile Center as a creative hub and makerspace - and they have created a solid foundation to build upon, also with the support from partners from the University of Iceland. They have established **solid connections** both within Iceland and internationally, the TextileLab is thriving, the feedback they are receiving from makers, scholars and artists in residence is very encouraging, and they are confident that a solution will be found for the pressing concern of future funding.

#### Description of change and lessons learned

Table 9 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Blönduós

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	2	8	7.0
Heritage	2	8	7.5
Vocational Training	2	7	6.7
Innovation Spaces	2	10	7.6
Social Inclusion	1	5	6.0
<b>TOTAL</b>	<b>9</b>	<b>38</b>	<b>7.0</b>

- Circular Economy

Targets set by the Blönduós pilot in this outcome area were (i) to increase awareness on the importance of textile waste management and the opportunities that lie within re- and upcycling and sustainable textile production in Iceland, and (ii) to enable makers to create products in line with the principles of a circular economy, starting with the design process. There have been more discussions and interest in the topic of textile waste and sustainability in Iceland in recent years. However, there is still a lack of national policies and strategic support for institutions working in the field, and only very little local production. There needs to be a clear policy on regional development built on regional capacities and the principles of a circular

economy. Moreover, the pilot continued to address and tried to overcome some stereotypes surrounding textiles that still prevail.

In order to support textile innovation in line with the principles of a circular economy, education and training needs to take the entire process into account (from circular design to the way materials are sourced) and connect with the labour market. This has not yet fully materialised. There is still a lot of potential in connecting businesses, SMEs, makers and students to develop new circular products. However, the Icelandic textile industry is too small and Icelandic SMEs cannot compete with imported textiles. A small wool factory in North Iceland can only just try to stay alive, as there is no capacity or resources to spend on research or new designs.

On a positive note, there seems to be more enthusiasm regarding the topic and new ways of working with sustainable materials like wool. This concerns individual makers as well as institutions like Ístex. Projects like “Fjólublá”, a research collaboration on using bacteria from waste materials for dyeing wool, provide a great example of the kind of future collaboration needed, and for which the pilot has already applied for funding.

- Heritage

On the outcome area of heritage, goals set were: (i) to communicate the outcome and meaning of the pilot research (heritage, gendered textiles, stakeholders’ perceptions of Kvennaskólinn) and use it for the further development of our hub, and (ii) to find ways to use traditional crafts knowledge to boost textile innovation and education. Progress here was significantly more successful than the previous sprint, as evident by the overall high marker scores (average score 7.5 over 8 targeted outcomes).

Kvennaskólinn is the heritage building the Textile Center is located in. While there are many great stories on the history of the house and the Women's College that used to be in it, and locals are happy to share them, the research conducted by the HÍ pilot team and emotion networking session also revealed the different and sometimes conflicting ideas about how the house should be used in the future. There is still no long-term plan in place for the use of the 75% state-owned building. Since Blönduós and Húnavatnshreppur merged in 2022, the association in charge of management of the house was dissolved and new structures are not yet in place. Close collaboration and good communication with local government will be crucial until new contracts and policies regarding the building are in place.

Moreover, spring 3 saw a favourable marking of most markers related to the second goal, namely increased interest in craft innovation, knowledge exchange, new opportunities for sheep farmers, increased use of local resources and increased value of wool, as well as makers coming together, forming connections and sharing knowledge, stories and skills.

On a broader context, sheep farming is declining overall in Iceland and the value of wool has increased due to the increasing demand and popularity of handcrafts. If this development continues, stories and traditions surrounding sheep and resources like wool may disappear or become scarce. This also means there are new opportunities for sheep farmers and makers

interested in wool production and product development, while traditional craft knowledge can inspire new ways of working with wool.

- Vocational training

As regards vocational training targets set were: (i) to determine which skills and knowledge are needed to boost (local) textile production in Iceland and develop a new curriculum in adult education, and (ii) to establish the TextileLab as a space for vocational training and textile innovation in the longer term.

Teaching various workshops and classes at the Textile Center and collecting information via surveys and feedback forms has given the pilot important insights into the needs and interests of the textile community. They have started collaborating with the Education and Training Service Center on developing a new curriculum for textiles; next step would be looking at practical skills assessment for textiles.

An important fact to take into account is that in Iceland, it is not uncommon that there is only one staff member in charge of a project, holding all the knowledge regarding it. If this person is no longer available or is on a leave, projects come to a hold. In this sense, ensuring the seamless operation of the TextileLab would require additional and more permanent staff and experts at the Textile Center, to be able to support makers, visiting artists and students and continue teaching programs like Fabricademy. This highlights a more general trend, especially for small institutions in rural Iceland like the Textile Center, namely their vulnerability to staff changes: each staff member counts and is not easily replaceable.

- Innovation Spaces

Outcome challenges in the area of innovation spaces were (i) to maintain and further develop the TextileLab as a space for research and experimentation in the field of textiles, and (ii) to form connections, securing knowledge transfer and building collaboration with textile networks in Iceland, in order to establishing the TextileCluster. A total of 10 targeted outcomes averaged a very substantial score of 7.5.

The TextileLab opened in 2021 and it has already had a significant impact on the textile landscape in Iceland. It has welcomed makers from all over Iceland as well as international artists, working on different projects. Working with equipment not available anywhere else in the country and having access to expertise and a community interested in sharing (handcrafts and technology) knowledge resulted in new products (work created using textile leftovers on the felt loom), methods (bacteria dyes for wool, seaweed and fish leather) and changed perceptions about textiles. Makers and artists come to work in the lab and share their work, experiences and findings with the textile community and via social media. Still, despite the success, there is still a long way to go to secure a long term funding for the lab.

The Textile Cluster was an idea developed by the Textile Center and partners. The main aim was to utilise the cluster concept as defined by the Icelandic government (an ecosystem of

stakeholders interested in specific topics and collaborating on various projects) for textiles. The pilot is now working on formally establishing the textile cluster initiative in Iceland with different partners, including the local municipalities. When municipalities in the region merged, the opportunity was taken to present the Textile Center to the newly elected representatives, which has resulted in more collaboration and a better understanding of the pilot activities and long term goals. Despite the fact that the Cluster became part of the national strategy plan, funding and access to expertise is not directly available via the central government and the Textile Center needs to take on a leading role for the Cluster to become a reality.

- Social Inclusion

On the outcome area of social inclusion, the target set for sprint 3 was to find ways for the Textile Center to be accessible and relevant for trained makers and scholars, as well as people with no formal education or inactive in the labour market.

The pilot has achieved moderate success in this area (average score of 6 over 5 targeted outcomes), seeing more support of socially inclusive projects and training schemes, more collaboration with institutions in the region, and an increase in participants supported by the state and their unions for courses taught at the Textile Center. The pilot is still at the beginning stages of this process and looks forward to the continued collaboration with the rest of the local partners. The intention is to make sure the Textile Center and training programs in textiles are not only accessible for makers and professionals within textiles, but members from the community, people without or very little formal education interested in creating opportunities for themselves. To this end, collaboration with other labs is crucial to make textile skills and knowledge accessible to more people. The knowledge and space need to be close to where the users are - a textile lab in Blönduós is not enough. This is why a new textile curriculum is crucial.

#### ***3.2.2.4. Copenhagen pilot***

##### **Most Significant Change**

The most significant change and greatest achievement of the sprint for the Copenhagen pilot has been the successful establishment of a **functioning network** of local stakeholders. Moreover, the acquisition of the necessary resources to enable the viability of the network will allow for the continuation of the work done, and the mutual support between partners and their local neighbourhood, and will also safeguard the sustainability of the activities beyond the CENTRINNO timeline.

##### **Description of change and lessons learned**

**Table 10 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Copenhagen.**

<b>OUTCOME AREA</b>	<b>No. of outcome challenges</b>	<b>No. of targeted outcomes</b>	<b>Average Score</b>
<b>Circular Economy</b>	1	3	6.0
<b>Heritage</b>	1	5	8.6
<b>Vocational Training</b>	2	9	7.6
<b>Innovation Spaces</b>	2	10	6.1
<b>Social Inclusion</b>	2	10	5.4
<b>TOTAL</b>	<b>8</b>	<b>37</b>	<b>6.7</b>

- Circular Economy

The Copenhagen pilot in the outcome area of circular economy has aimed at exploiting circular opportunities among the stakeholders in the pilot area (e.g. resource sharing).

As part of the initiation process of the network, a resource mapping has been made giving the participants an overview of the resources in the pilot area, which has facilitated new kinds of cooperation between the stakeholders. Besides the CENTRINNO partners, the local makerspace, Makerspace NV, has been a catalyst when it comes to activating cooperation. Makerspace NV are organising a lot of activities and workshops that target local citizens, where they use local business actors as guest instructors. It has proven very valuable to have a physical space where such activities that help bring people together can take place, where knowledge can be shared and, in the future, hopefully material resources as well.

- Heritage

Regarding heritage, the outcome challenge set during sprint 3 was to develop and highlight a joint understanding of the industrial heritage of the area, through the living archive, interviews and exhibitions. An average progress marker score of 8.6. over 5 targeted outcomes reflects a substantial accomplishment of the initial goals set.

In particular, through interviews with a local historian, businesses and local stakeholders for the living archive, the pilot has gathered stories and insights of the heritage of the area and the meaning it has to these people. This material was subsequently used to showcase this information and these stories to create awareness among the local stakeholders and citizens through local exhibitions at NEXT and the library, as well as through a podcast. Furthermore, the visitors were able to interact with the exhibition at the local library and contribute with their perspectives and wishes for the development of the area. This experience showed that making history interactive has a really good effect locally and allows everyone to take part, learn and contribute.

- Vocational training

Targets set in regard to vocational training included: (i) increased collaboration and bridging between the NEXT, the local public school, Maker Space NV and local small and medium sized businesses, and (ii) strengthening creative and craft skills among school students, young people, citizens and professionals.

In order to bridge the gap between NEXT and Tagensbo Skole, two intense project weeks have been arranged (in June and October 2023), where students have made projects with 6th grade pupils. To increase collaboration between the Makerspace NV, local public schools and businesses, numerous workshops have been organised involving all of the respective target groups. The municipal Areal Renewal Project has been a key partner in this process, supporting the coordination with (Danish) vocational schools. A valuable lesson from this process is that relation building is key, and it does not happen by itself, but rather requires time and effort.

In addition, creative and craft skills have been strengthened both directly (in workshops and project weeks), and indirectly via teach-the-teacher training sessions enabling the teachers to use new methods, technologies and tools back at their own school. As part of the intense project week program, the students from NEXT were introduced to the pedagogical aspects of training kids aged 11-13 years supporting the process for everybody. The creative workshop format proved great for relation building - new friendships have been established as a result of the open workshops. A professional approach to the process of making workshops and projects including the necessary pedagogical aspects was also central.

- Innovation Spaces

Regarding innovation spaces the following outcome challenges were outlined: (i) increase collaboration between the local makerspace community and local small and medium sized businesses, e.g. shared facilities, resources and activities through the network, (ii) obtain and anchor recommendations about access to space and the development of creative urban environments at strategic decision-making level in the municipality.

The resource mapping was instrumental for the increased collaboration between existing stakeholders, as well as the facilitation of new connections, as it provided all participants with a good overview of the resources in the pilot area. The presence of a physical space was a catalyst in facilitating the performance of joint activities where knowledge could be shared.

Moreover, the knowledge generated during CENTRINNO has been communicated at any given opportunity, resulting in a political focus on the subject and consequently an imprint in the coming Municipal Plan Strategy as well as the creation of a fund for initiatives supporting creative industries and urban environments. The inside knowledge about 'when to contact who about what' in the municipality has been key in order to make an imprint on relevant strategic work. Fighting gentrification processes is hard, as developers hold a lot of power, and financial resources. As a result it is very important to visualise the value of creative environments.

- Social Inclusion

In the outcome area of social inclusion, the Copenhagen pilot set the following targets: (i) increase local awareness of educational opportunities and activities for young people focusing on vocational education, maker activities and internships and strengthen reputation of the craft profession in the neighbourhood, and (ii) create a stronger connection and interaction between local businesses and citizens in an area where the local composition is under extensive development due to gentrification.

The workshop program in the makerspace has created a lot of attention both within schools and among local citizens. Moreover, the visible result of the intensive project work between NEXT and Tagensbo Skole combined with the opening have created attention to both the craft itself and the local vocational training opportunities. Some of the students participating in the intensive project week were only aware of a few 'traditional' education pathways like doctor, lawyer, and engineer and for which they did not feel equipped. Thus, it was important to widen their perspectives to the many additional opportunities at an early age, so they can set their own personal goals.

The work with the creation of the local business network is also slowly getting started. Several ideas of creating activities targeting citizens (e.g. Christmas market) have been brought up, and more will come and be realised in the future. For example, the pilot area Nordvest has been, quite surprisingly, chosen to become a mini-tourist destination by Wonderful Copenhagen, which could result in more public activities from the local businesses. The citizen-oriented activities in the Makerspace NV have also attracted vulnerable citizens, which may result in more competences within this group of people and in best case motivate them to become more actively engaged in the job market again.

### **3.2.2.5. Geneva pilot**

#### **Most Significant Change**

For the Geneva pilot, the approach of targeting new audiences and external stakeholders has paid out, and this has facilitated the shift to a distributed design model. A clearer vision is now in place and this makes it much easier, as well as more legitimate, to approach new partners.

Moreover, the relationship with neighbours is finally now more settled and relaxed. "Like an old couple", after an initial dreaming phase that all will work out, and a subsequent series of conflicts, they have now reached a balance, where there is mutual understanding and appreciation of each other's work.

#### **Description of change and lessons learned**

**Table 11 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Geneva**

<b>OUTCOME AREA</b>	<b>No. of outcome challenges</b>	<b>No. of targeted outcomes</b>	<b>Average Score</b>
<b>Circular Economy</b>	2	6	5.2
<b>Heritage</b>	2	7	5.3
<b>Vocational Training</b>	1	3	6.0
<b>Innovation Spaces</b>	1	3	5.3
<b>Social Inclusion</b>	2	4	7.3
<b>TOTAL</b>	<b>8</b>	<b>23</b>	<b>5.8</b>

- Circular Economy

For the Geneva pilot, the challenges in the outcome area of circular economy remained: (i) to build a better understanding of the challenges and opportunities for local circular activities amongst traditional craftspeople, makers, and related artisans, through the implementation of CENTRINNO cartography, and (ii) to facilitate mindset changes and collaborations around circular production within the city as well as increase awareness about such activities. Progress, as depicted in the outlined markers, has been mixed (average score of 5.2 over 6 targeted outcomes).

During the development of the project, there have been a lot of tensions between the municipality and the already established actors in the ZIC that already have their own associations and agendas. This culminated with a petition against new actors on the site and since then the pilot had no real opportunity to enter into deeper collaboration with the already established actors in the ZIC in order to set common goals. On the other hand, relations with new actors in the ZIC seem more promising. Collaborations have been established with Six toits and les 2 Rivières, the mobile sawmill. Moreover, the pilot was approached by other departments of the city of Geneva to work on a new project on circular and productive cities and the Fab City Hub concept. So, even though the originally targeted actors were not responsive, the project actions did achieve visibility and legitimacy on the topic of circular economy.

In addition, the second Fab City Camp around local production boosted a more critical approach on how to use innovation, new set of future skills and methods to promote a fruitful public-private interaction and collaboration. The group was very heterogeneous as evident in the plenary discussions. The results showed that the majority of participants would prefer to continue the dialogue on a regular basis and in smaller groups, with more pertinent, local, action oriented focus, as those seemed to work more efficiently.

- Heritage

Heritage related activities focused on: (i) increasing awareness and comprehension about the potential of the industrial heritage of the area through conferences and workshops, and (ii) collecting stories about the history of the site in order to feed into the living archive.

During the sprint, there has been an increase in the appreciation for the ZIC area and its activities, especially by the general public, as well as some acknowledgement from the local ZIC actors towards the work of the MACO in relation to circular economy and local production. Several events related to heritage were organised, as well as informal meetings between the general public and other local actors and the CENTRINNO actors, leading to an increase in the demand for working collaboration as well as the use of digital machines onsite after learning the activities of the MACO. A surprising controversy has arisen around the concept of 'local handmade', with some traditional local craftspeople refusing to accept handmade production with digital machines, and not recognising research on innovation and digital skills as part of local craft production.

Moreover, there has been an increase in the number of stories collected for the living archive, with a series of different perspectives on the re-appropriation of the spaces within the ZIC site throughout the years. These stories showcase the different types of local craftspeople and the diverse activities present on the ZIC site nowadays. They also show a mixed variety of feelings in relation to the way the municipality has been dealing with the choice of the tenants to preserve the identity of the site.

- Vocational training

As regards vocational training, the pilot aimed at facilitating the exchange and collaboration between formal and informal educational formats through network building and documentation of practices and methods. The concept of 'learning ecosystems', where both formal and informal education coexist, is gaining traction among the local stakeholders. Concrete plans for implementing such ecosystems are currently underway. Thanks to the local CENTRINNO activities (i.e. schools visiting the pilot hub, or training craftsmen working within and alongside the community), the pilot has gained legitimacy in this domain and is actively participating in two working groups focused on developing a new Vocational Hub concept in Geneva.

Productive exchanges and collaborations with the Regional Government (Canton), foundations, teachers, and schools have been instrumental in being established as a significant stakeholder. This, in turn, has enabled the pilot to effectively communicate their vision and to be heard. A formal partnership with the Regional Government for Education (DIP) was established through MACO. Additionally, the Regional Government for Employment (DEE) increased funding for Onl'fait by 30% for the next year due to the full occupancy of training positions in digital craftsmanship. Furthermore, a local foundation has contracted Onl'fait (alongside other partners) to develop modules for a new vocational training hub in Geneva.

- Innovation Spaces

In the outcome area of innovation spaces, the goal set has been to disseminate and promote the concept of Fab City Hubs both locally (ZIC and makers) and on a city/public level, to help change the mindset around new business models.

According to the pilot, in order to establish a Fab City Hub it takes a lot more than just physical space, and this might not be the only alternative. In fact, regarding the two distinct 'models' of a Fab City Hub, the pilot made some significant realisation following a partnership developed with a new stakeholder. A more centralised hub with a physical space is valuable, but also demands a lot of effort to run. On the other hand, a more distributed network-like hub may provide the opportunity to open the doors to a bigger audience, communicate with different communities, and promote more awareness around innovation, local production and vocational training.

Therefore, a focus shift has been made in the direction of a distributed form of hub, and what this would require, namely building a coherent community, partnering with other well established organisations, being able to share and exchange expertise, and put more emphasis on community networking.

- Social Inclusion

Regarding social inclusion, the Geneva pilot set following targets: (i) co-creation of strategies and actions to support professional reintegration through the development of new skills around digital fabrication, and (ii) co-creation of strategies and actions to support social inclusion through the development of new skills around creativity and reuse of material.

The pilot continued the formal collaboration with the regional government with an increasing number of unemployed people coming to extend their knowledge and learn new skills around digital manufacturing and innovation. Joining forces with such an official government body was instrumental for the increasing interest shown by the maker community. The formal partnership with the regional government has been extended for another 3 years. A lesson learned from the process is that it requires a significant amount of planning and resources to establish trust relations with the public sector and understand their needs and priorities. At the same time, it is useful to be familiar with official plans and strategies from the Municipality and the Canton in order to meaningfully contribute to their objectives.

### **3.2.2.6. Milan pilot**

#### **Most Significant Change**

For the Milan pilot, the most significant change has been the increasing level of **collaboration** within the ecosystem in general, as well as the increase of political consent regarding the municipal strategy.

On a more relational note, an important development has been the feeling of finally being less abandoned and fragile, as "they are not the only ones concerned about circular economy". There is now a place to go and someone to call and ask questions and the possibility to deal

with the issue collectively. In addition, the establishment of a new vocabulary about circular economy, makes them more prepared about what might come up and how to deal with it.

**Description of change and lessons learned**

**Table 12 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Milan**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	2	4	8.3
Heritage	1	2	3.5
Vocational Training	1	2	6.5
Innovation Spaces	1	3	7.0
Social Inclusion	1	2	8.0
<b>TOTAL</b>	<b>6</b>	<b>13</b>	<b>6.7</b>

- Circular Economy

The goals set by the Milan pilot in regards to circular economy were (i) to gather more political consent and integrate the activities of CENTRINNO in the overall strategy for circular economy, and (ii) to enable connections between different companies and other local stakeholders, between small and big organisations, as well as between potential clients and local producers. A very high average score of 8.3 was reached over 4 targeted outcomes.

During sprint 3 the Municipality of Milan prepared a draft of the ‘Circular Economy Plan’ valorising lessons learned and needs coming from CENTRINNO activities. Experiences mapped around the city (and not only) were used as examples of circular initiatives and as models of possible actions. Since this is part of a larger ‘Air and Climate Action Plan’ it was possible to also involve other municipal departments and thus to raise more political interest on circularity. This occasion also provided the opportunity to meet other local relevant actors, and stakeholder engagement is planned to be reinforced through workshops and 1:1 meetings that would help collect new inputs and define the final version of the plan at the beginning of 2024.

In addition to this, new stakeholders have joined the Manifattura Milano community taking part in the ‘Milano Circolare’ event showing their circular products and networking with other participants. This event was particularly important as, with more than 3000 visitors, it provided extra visibility to small enterprises. There were more than 80 registered professionals and small enterprises, 40% of which were new to the project. Thanks to the event new collaborations were forged with the creation of 4 new circular products manufactured in Milan.

- Heritage

Regarding heritage, the aim was to make citizens and small enterprises more confident with transition processes. The idea behind this was that history is about change, and that heritage is not only about conservation.

The low score in this outcome area (3.5 over 2 targeted outcomes), reflects the high bar set in instilling confidence in citizens and small enterprises as they navigate through transition processes. Nevertheless, sprint 3 saw an increase in the stories about heritage collected, highlighting different points of view about the changes in the Tortona Area. A wide variety of actors (citizens, associations, SMEs) were interested in sharing their experiences with the transformation of the area. There was a general consensus that there has been significant big transformation of the area in the last 70 years. Several of the people shared good feelings and nostalgia for the past, but at the same time most also recognised the new opportunities that opened up due to the changes in the area. Future work could keep emphasising that history is inherently about change, which in this way helps shift the focus from pure conservation to active adaptation and evolution.

- Vocational training

In the vocational training outcome area, the challenge identified was to improve the set of skills needed to become more circular at an urban level. This involved developing a training program for companies but also clarifying the transition process in order to create guidelines for circularity for a 15-minute city.

The training program 'Percorsi Circolari' was very successful in engaging a significant number of professionals and 5 further meetings have been scheduled until the end of 2023. The success of the 'Percorsi Circolari' and the identification of other skills requested to be developed, pushed the pilot to schedule another series of events, especially to allow the building of an exploitation program in order to keep working on these topics after the end of the project. In order to also focus on vocational students, a special program of learning sessions with a fashion and design school was activated which took part in 'Milano Circolare' in February 2023. Thanks to that specific event, the school invited the pilot to activate a PCTO (a summer school for students) in order to transfer the skills around repairing. The visibility achieved around the topic of urban circular economy through the 'Milano Circolare' event, contributed to the building of trust and the initiation of a collaboration with the vocational school, even if lacking the official legitimation to provide formal training to high school students.

- Innovation Spaces

As regards innovation spaces, the Milan pilot has aimed at exploring and modelling the different options of using a space for a Fab City Hub.

After benchmarking on cases around Europe, exploring local opportunities and participating in CENTRINNO discussions and workshops, the Milan pilot was oriented into defining a 'Milanese model' of Fab Hub at a city level, bringing together public and private initiatives. The public actors were more involved in defining frameworks, guidelines and funding opportunities, while private actors focused more on strengthening local initiatives, improving communication and dissemination, and enhancing a circular community. The idea is to not have a central physical space but instead different kinds of initiatives -digital and physical- coordinated to boost the city towards a circular evolution. To this end, the pilot team is now working on specific guidelines.

A significant contributing factor to this development has been the engagement of the Municipality in boosting circular economy in important sectors of the Milanese economy, especially in fashion and design, as well as the existence of an already rich ecosystem involved with circular activities, and the solid experience in public-private partnerships in the city of Milan. Overall, it has become clear that setting up a distributed Fab City Hub requires a truly collaborative approach.

- Social Inclusion

Finally, the target set by the pilot in the outcome area of social inclusion was to increase the social impact of stakeholders through circular economy projects.

All the activities accomplished in the training and networking areas were focused on supporting professionals, as well as micro and small enterprises in the city to grow their businesses in order to face the complexity of the contemporary times. Many small businesses have been suffering from the long constraints of the 2-year Covid-19 pandemic, only to now face increased expenses for energy, materials, rent, not to mention future ecological constraints. Their involvement in CENTRINNO activities allowed many of them to combat this feeling of isolation and helplessness and to organise in a more collective way, as many of them are facing a similar condition.

During the third sprint, many businesses were involved in various activities and this led to an increased participation and collaboration among them, especially during the ‘Percorsi Circolari’ and ‘Milano Circolare’ events. The direct involvement of the Municipality of Milan in the project was a key aspect in order to build trust and activate participation. The choice of curating a training program focused on circular economy at a local level, allowed the pilot to be very interdisciplinary and to engage different types of participants from different industries.

### **3.2.2.7. Paris pilot**

#### **Most Significant Change**

The most significant change of the sprint for the Paris pilot has been the re-establishment of a working link with the City of Paris, which has also led to the preparation of new ambitious projects on urban gardening. Through the new relations created with the municipality, questions about inclusivity and social involvement have now become more central points for the city. Finally, the “French Method”, including practices and techniques of urban food provisioning, is now more consolidated and is even considered a new field of studies.

#### **Description of change and lessons learned**

**Table 13 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Paris**

<b>OUTCOME AREA</b>	<b>No. of outcome challenges</b>	<b>No. of targeted outcomes</b>	<b>Average Score</b>
<b>Circular Economy</b>	2	7	5.0
<b>Heritage</b>	1	5	6.4
<b>Vocational Training</b>	2	10	6.0
<b>Innovation Spaces</b>	2	8	6.3
<b>Social Inclusion</b>	2	9	7.6
<b>TOTAL</b>	<b>9</b>	<b>39</b>	<b>6.2</b>

- Circular Economy

The challenges set by the Paris pilot in the ‘circular economy’ outcome area were (i) to create a mutualisation network of the alternative food system actors in the XVIIIth Parisian district through the ‘Quartier Nourricier’ research work, and (ii) to create a micro local circular loop in the Fab City Hub, overall achieving mixed progress (average score 5 over 7 targeted outcomes).

The gathering and mapping of local and alternative urban food system actors allowed to strengthen some of the connections and to enhance circular dynamics between them, in the form of business partnerships. Examples include the use of beer brewery waste to make edible pasta by a small nearby company, or the use of vegetables and herbs produced in small urban agricultural fields by local restaurants. Due to lack of resources in Vergers Urbains team, it has not been possible for the quartier Nourricier study to enter the second stage, namely the connection with the stakeholders to enhance synergies. Nevertheless, the pilot could proceed with the mapping and stakeholder analysis for building a resilient local food system. Furthermore, early contributions to the Makeworks initiative, already from the first sprint, allowed the pilot to identify some connections amongst local food system actors.

The plan to develop circular micro loops amongst the Fab City Hub actors did not go on as expected, as the complete change of direction and staff of the Foodlab in May 2023 slowed down the initial dynamic. A lesson learned from that was that if the stated mission statement is not clear enough and the way to achieve it is not well paved, external factors relying on specific people can have a big impact.

- Heritage

As regards the outcome area of ‘heritage’, the goal set was to reactivate the “French method” components within the Parisian urban farming ecosystem through the “Foodtrack” initiative”. The pilot succeeded in creating a real interest for this particular period of the city’s past, as well as the benefits of its reactivation. A lot of people were directly involved in the French method study, several articles and events on the French method appeared, together with a series of field experiments. This led to the creation of a ‘French method’ research group,

establishment of a partnership with farmers in the South of France using the French method, and an interest of exploring the benefits of the method in other programs.

The pilot did not initially measure the narrative potential of the French method that connects directly with CENTRINNO's main research themes. They realised that, despite the fact of being a narrative that has a real federative power, it has never been treated like a subject of study serious enough to assess the benefits of its revival in the urban agriculture landscape.

- Vocational training

Targets set in the vocational training outcome area included (i) to build a 'KUMU Skills' map of the Fab City Grand Paris network to be able to propose innovative on-purpose training programs, and (ii) to proceed with the Agriculture XYZ training program.

The KUMU Skills map allowed the pilot to rethink the Fab City Grand Paris network training strategy. During CENTRINNO, 3 training programs were either launched, or continued (Agriculture XYZ, Circular making, Circular building and civil engineering) with more than 50 trainees. An underestimated effort has been the difficulty to handle the required features of KUMU, in order to achieve a consistent skills map. A lesson learned has been that 'good will' alone is not sufficient, and that in order to properly handle a digital tool one needs real dedicated classes.

In addition, the pilot saw an evolution in the mindset between the 2 sessions of Agriculture XYZ training programs, caused by several actors, namely the Paris city council through the different programs that provide help for training, the different partners providing contents for the training programs, and people's recent interest for the circular economy and urban agriculture. Despite the departure of one of the supporting institutional partners, the pilot managed to develop the XYZ Agriculture training course by relying on self-financing by the participants. That is a testimony to the growing interest for people to be trained in alternative economy skills.

- Innovation Spaces

Regarding innovation spaces the goals set remained (i) to enhance synergies and dynamics amongst various communities through Fab City Hub Paris governance and stakeholders' alignment and (ii) to make the 'Jardin des Traverses' a place of experimentation and awareness of the challenges of the urban food system.

A 1000m<sup>2</sup> place run by a cooperative of sustainable and social economy actors inside Paris is now a reality. The real estate department of the City of Paris enabled the pilot team to occupy this place in an innovative way. The Fab City Hub Paris, open since November 2022, involves a community of more than 30 actors of the sustainable and social economy through a network of several spaces (e.g. Oasis21, Volumes Lab). A lesson learned from the process has been that it is still difficult to run such an innovative place without also including a more 'classical' business model that includes co-working, space renting etc. The problem was that the more thematically aligned actors are not always the ones able to afford the co-working places, so innovative ways need to be found in order to balance between the alternative economy concept of Fab City Hubs and other sustainable economic models.

At the same time, a series of activities needed to open a hub dedicated to the alternative urban food system were gathered and tested. It was not anticipated that the City of Paris would take one year and half to sign the convention that would allow it to operate within the Jardin des Traverses. This forced the pilot to launch and document smaller experiments as 'preconfigurations' of what will happen in the main site.

- Social Inclusion

Finally, in the outcome area of 'social inclusion' the challenges set by the Paris pilot were (i) to involve the inhabitants of the district in professional training and living heritage activities, and (ii) ensure that the local communities have a structured role and place within the two main sites. A considerably high average score of 7.6 was reached, over 9 targeted outcomes.

The Foodtrack experiment was a digital project allowing people to share their knowledge of Paris' agricultural past. Together with Vergers Urbains the pilot managed to empower inhabitants to run autonomously their own edible gardens (Mathis Street and Chapelle Charbon), successfully reconnecting the tradition for urban citizens to have allotment gardens. The beta version of Foodtrack and of the contributive work open interface on Notion have been released, while the edible gardens were transferred to the residents. Despite the fact that the pilot did not succeed in generating external engagement on the platform, it still helped in the formation of a research group that is engaged with past agricultural practices as a real field of study.

Moreover, the Fab City Hub developed into an anchor point for social activities. Vergers Urbains tested social activities to be then replicated in the Jardin des Traverses. The launching of the Artagon workshop received the municipal agreement (ACI) for an integration workshop, offering support and a professional activity to unemployed people with particular social and professional difficulties, as it aimed to support participants to build shared gardens and urban agriculture furniture made from recycled elements.

### **3.2.2.8. Tallinn pilot**

#### **Most Significant Change**

For the Tallinn pilot, the most significant change of sprint 3 has been the securing of a successful longer term sustainability for **Kopli 93**. The Municipality has now taken over the responsibility for managing the space and organising the meeting, and have also reserved some budget to this end. The pilot team has also managed to positively influence the vision of the new director of the place. Despite a more conservative starting attitude and approach, the new director is now motivated and inspired by the novel and innovative ideas developed over the years. The challenge that remains is to better communicate the idea of creating a real community, rather than just an aggregation of people.

#### **Description of change and lessons learned**

**Table 14 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Tallinn**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	1	5	7.6
Heritage	1	5	6.6
Vocational Training	1	5	7.8
Innovation Spaces	2	7	7.4
Social Inclusion	1	4	7.3
<b>TOTAL</b>	<b>6</b>	<b>26</b>	<b>7.3</b>

- Circular economy

The Tallinn pilot set as a target to integrate the circular economy into the practices of Kopli 93 local community and stakeholder network. During the third year, it can safely be said that the Kopli 93 community makerspace works and it has remarkable demand from the local people. Every time the makerspace is open, it is full of repairers and makers. There have been many failed attempts to create a place resembling a workshop for makers in Tallinn before, but CENTRINNO and Tallinn city proved there is a place for a makerspace in the weekly routine of many citizens. It is interesting to note that, for the most part, people visit the makerspace 3-4 times on average. The fact that the makerspace is full all the time means new people constantly discover the place and see value in it. Because of the results of the project and experiment, the city is highly motivated to find long-term financial support for the makerspace.

CENTRINNO and the wider Kopli 93 team put great effort into communication work and building partnerships; this was the key in this outcome challenge. The story that people build about circular economy is about knowing and doing, and both aspects were targeted. The KUMU cartography has also proved to be an invaluable tool, especially through the interviews, as the Tallinn pilot has found a number of important and necessary partners for the future. For example, a formal partnership agreement was established with the local Paljassaare Waste Disposal Plant at Kopli 93 to recycle wood waste material free of charge through the public educational activities of Kopli 93 makerspace.

More initiatives and makerspaces are opening up all around Tallinn. Kopli 93 has served a valuable role of popularising circular habits and making via all media outlets and practical actions. People from other city districts started to demand their own makerspaces. Tallinn is now opening 8 more makerspaces in Waste Recycling Centres all around Tallinn. In addition, a privately initiated community makerspace opened up in Tallinn Kristiine city district. Overall, a key lesson was that a professional network of partners and community members is essential to securing the long-term impact of the project outcomes.

- Heritage

Regarding 'heritage', the outcome challenge set was: how to initiate and inspire new directions of development and innovation based on heritage that is strongly connected to being self-

sufficient, community-minded, and producing things locally. The municipality of Northern Tallinn collected the stories for the Living Archive and independently organised an exhibition at Kopli 93. Kopli 93 has been subject to three follow-up project proposals and more offers for the future related to the heritage part of Kopli and Kopli 93.

During the third year a new project idea was proposed between the CENTRINNO partners that led to the application for a new European project proposal that received unexpectedly high review scores and is on the 'pending' list. It came as a small surprise that the central aspect of this new proposal has been the Kopli 93 theme of grandmother and grandfather skills that inspired other partners. A short but convincing story is important to get the message across. Another positive surprise has been the extent of the importance of the Kopli community centre to the local authority in creating its own narrative in political aspects. It has provided an opportunity to showcase the image of the old community centre, intertwining it with a new Kopli 93 brand of community centre with updated sustainable needs.

What is more, the pilot planned to organise an exhibition based on collected memories of the 85 years old community house at Kopli 93. The local municipality administration took over the idea of organising an exhibition showcasing the memories of people associated with the house. The memories were collected and published through local newspapers and the opening of the exhibition turned into a spectacular public event attended by the media and local politicians. The exhibition opening words were delivered by the mayor of Tallinn Mihhail Kõlvart, who had studied in the old community house, as the local university's former campus.

- Vocational training

The target related to the outcome challenge of 'vocational training' has been to train people to match their skills to the challenges of the new era that requires local resilience, which received an average score of 7.8 over 5 targeted outcomes.

It has been easy to find participants for the more advanced and lengthy training sessions and spots were filled within days of being announced. On many occasions new craftspeople have shown interest in becoming part of the Kopli 93 ecosystem. The Northern Tallinn Municipality and Salme culture centre governing Kopli 93 have started to create conditions for more organisations to join the Kopli 93 platform. Rent fees and conditions are under development to rent out further space in the centre that are in synergy with the garden and makerspace. A metal makerspace initiative emerged also at the end of the third sprint. The Kopli 93 makerspace is particularly popular among women, who are now comfortable in using electrical tools, as well as participating in the more advanced workshops.

The CENTRINNO local team is one of the most influential partners to Kopli Vocational School, which has changed their entire essence and agenda due to the impact CENTRINNO project. The team helped the school put together a new strategy encompassing circular economy practices and community centred life-long learning. The new strategy for the Kopli Vocational School was approved by the city officials and is now already in play. Kopli 93 and Kopli Vocational school are already merged in many ways and their future collaboration is secured.

- Innovation Spaces

Outcome challenges related to ‘innovation spaces’ were that the local Fab City Hub of Kopli 93 (i) brings together the local community and field activists/thinkers, and (ii) becomes an exemplary centre for Tallinn and other cities in Estonia.

The third year of the project has been the most successful in producing innovative prototypes and solutions. In workshops and training sessions, the pilot built and created a wind turbine, a portable smithing station, a compost system, a grandpa woodworking station, and potentially a rainwater collection system. The wind turbine project was a perfect example of commons-based peer production. The first prototypes of innovative solutions for seaweed as design and building material were also tested. Local architects (Kopli 93 community members) continued to showcase the alternative solutions for the natural resource and engage community members in new product developments.

In March 2023 Northern Tallinn Municipality claimed that they are not ready for any kind of commons-based system for the makerspace, but they worked hard to secure funding for the makerspace as a full service including, maintenance and full-time salary for the makerspace master. The Municipality and Salme culture centre governing Kopli 93 have started to create the conditions for more organisations to join the Kopli 93 platform. For example, a flower decorator joined the Kopli 93 courtyard during summer.

The possibility of launching an NGO or business alongside Kopli 93 has been discussed for a year already. Although nothing has been registered, it seems to be just a matter of time. In its third year, Kopli 93 has been a gathering platform for many resilience, environmental, and social gatherings. It was meant to provide a platform for the citizens to initiate grass-roots initiatives, and the first steps towards this direction are already made.

- Social Inclusion

Finally, in regards to social inclusion, the goal set by the Tallinn pilot has been to create a hub where everyone feels welcome. During the course of the third sprint, the community of Kopli 93 became far more independent than in the previous years. Community members organised their own events, and one person even represented Kopli 93 in radio and TV many times. The community members themselves have also become directly familiar with CENTRINNO local partners. In addition to Kopli 93 apiary having an audience of visitors and fans all over Tallinn, one community member has now her own beehive in the apiary.

Even if Kopli 93 has not managed to ignite a wider discussion around communities, its members are engaged actors in public discussions and are frequently involved in events that have a public role or influence. Like with many other main topics, values, and activities, it seems that Kopli 93 and the CENTRINNO team has targeted many of the latest ‘trends’ just before they popularised, such as repair centres and makerspace, or buzzwords such as resilience, circular economy and community engagement.

One of the things that has been trickier to explain to the local municipality is the difference between a Northern Tallinn citizen and a Kopli 93 community member. The definition of a community can vary a lot, and by using the same word, people may understand different things. The pilot continues to work on some possibilities to create a closer relationship with the Kopli 93 community and the local municipality. The communities of Kopli 93 and Kopli Vocational

School became very close, with even some ‘merging’ taking place, where Kopli 93 community members have become students of the vocational school.

### 3.2.2.9. Zagreb pilot

#### Most Significant Change

The most significant change achieved during sprint 3 by the Zagreb pilot was the acknowledgment that efforts and pilot actions have reimported the first tangible impacts on the local community. Perseverance and continuous networking and other activities eventually provided some more tangible results that could be shared and communicated with the wider community. This in turn empowers the actors involved and provides the extra motivation needed to continue the work and produce even more results. Following a slower start, a positive feedback has been created, where more ‘things are done’. The future FCH will provide the necessary space and conditions for the establishment of further connections and pushing things forward.

In addition, another significant change that took place has been the changing perception around the concept of heritage, that reinforced more community engagement around the former factory, and helped inspire the different future uses this may have.

#### Description of change and lessons learned

**Table 15 - Number of challenges and targeted outcomes set, and average score achieved per outcome area for Zagreb**

OUTCOME AREA	No. of outcome challenges	No. of targeted outcomes	Average Score
Circular Economy	2	7	7.3
Heritage	2	4	7.8
Vocational Training	2	6	6.0
Innovation Spaces	2	6	7.2
Social Inclusion	2	5	7.6
<b>TOTAL</b>	<b>10</b>	<b>28</b>	<b>7.2</b>

- Circular Economy

For the Zagreb pilot, outcome challenges set in relation to ‘circular economy’ were (i) to raise awareness on neighbourhood resources with focus on reusable resources and circular economy, and (ii) to map resources related to circular economy, actors, materials and skills.

There was a general agreement from the local community to ‘clean’ the location of the former Sljeme factory, except for several buildings that were assigned a specific final purpose (hub, music school, silos). However, the discussion was only about how to clean the area, and not about reusing the buildings, or the materials. At the end of sprint 3 both the local community and Green and blue Sesevete NGO are now much more aware of the potential of both the buildings and the construction materials. Several meetings and workshops have been organised to show this potential, the kind of activities that can be done in some of the buildings,

what temporary purpose they can take, how materials can be used for art or makers' projects, or by startups (e.g. concrete speakers by Synthesis Startup). This however entails continuous work about the urban regeneration of the whole area of the former factory, which should be managed by the future FCH.

While the first step has been to raise awareness about resources in the former Sljeme factory, at the same time it was necessary to gather various actors and show them the practical value of this step. People from different age groups were involved, from students to pensioners, and a design thinking process about reuse of the waste was performed, in order to ideate various solutions and projects. A lesson learned from the meetings was that some actors prefer more planned and straightforward activities, while others require more time for networking, open informal discussion and brainstorming sessions and emphasised that working with others unlocked their ideas and brought them inspiration.

- Heritage

Work on heritage revolved around (i) investigating with local actors what resources are worth using in the future, and (ii) reusing the HQ building of the former meat factory Sljeme. Overall, this outcome area was met with considerable progress, in relation to the outcomes set at the beginning of the sprint (average score of 7.8 over 4 targeted outcomes).

The pilot's strategy was to promote more interest in heritage as an 'emotional glue' with the new spaces and buildings. The main goal was to raise awareness about the heritage value of the former factory. The university was actively involved not only with the CENTRINNO team, but also with other heritage experts. Collecting stories from people who were involved in the Sljeme factory operation not only raised awareness about the past, but also provided inspiration about future uses. The topic of heritage has also proved very important in building bridges with the youth who are less and less connected to physical spaces, in favour of virtual ones.

Regarding the building of the former meat factory Sljeme, this has been abandoned for more than 20 years. Green and Blue Sesvete started engaging people and proposing ideas about improving the situation of the premises, and pop-up activities were organised to improve the inner and outer spaces (e.g. cleaning, photo-shooting, installations). The continuation of the ad-hoc events and exhibitions are expected to improve perceptions towards the heritage and innovation potential of the site. There has been an intention to organise the maker faire in the old building. A negative response by the City hall reinforced the interest on behalf of the local community. The non-availability of the exhibition space instigated interest by other actors (e.g., museum) to engage with the place, and host an exhibition instead, including not only photos but also artefacts from the past.

- Vocational training

Targets set in the outcome area of vocational training were: (i) to raise awareness on innovation skills and methodologies through digital fabrication and community practices, and (ii) to build a prototype for digital fabrication curriculum based on Fab Academy.

Since many young people are more interested in virtual and intangible products (software), part of the pilot's activities was focused on engaging them in more hands-on tangible activities. Workshops in schools and universities were focused on showcasing digital fabrication, but also unlocking ideas about how to use these kinds of tools. One aspect was how to merge and find synergies with traditional crafts and actors involved as part of social inclusion and heritage. During the activities students explored various relations with traditional skills and crafts. A Fab City Hub would help in promoting new ways of learning. Distributed activities can engage and motivate, however dedicated infrastructure is needed to continue this innovation process.

In addition, a light version of a digital fabrication program accessible to more people has been developed, promoted and tested. The idea was to have this engaging program as preparation also for global Fab Academy, to identify those most motivated, but also to find commercial sponsors and involve them. The overwhelming interest from participants showed the need for a dedicated infrastructure in the future FCH. The program should not only follow changes in innovation technologies, but also articulate local interest and demands, especially when performed in the future FCH.

- Innovation Spaces

Regarding innovation spaces, the aims of the Zagreb pilot have been (i) to achieve effective communication with the City of Zagreb on Hub\_Sesvete as a Fab City Hub, and (ii) to initiate an open discussion about a management mindset and business models for a community driven hub.

The new appointed officer for economy and innovation has been much more responsive and engaged in the idea of the FCH. The property department is still not totally convinced, but is present in the meetings. Despite the effort by various stakeholders of the FCH, the city did not allow the organising of events and an international conference. The head of economy and innovation supported the idea but could not manage to get the other departments to agree. Experts from the university also engaged in the discussion, visited the site and tried to influence the city officials, but success was so far limited. The lesson learned from the process is that, when working with the city administration, no matter how good an idea is, or how much support from the local community one has, long term ideas and big changes need perseverance.

At the same time the pilot has been exploring three options for the FCH: from the original centralised model of 'one building - one organisation' as a community driven hub, over a distributed hub as a temporary but community building option, to finally a decentralised model, where the hub takes some of the roles, and coordinating other distributed actors in the community in order to keep actors and the community engaged. The current situation with the 'inaccessible' FCH triggered open discussions and alternative scenarios about a decentralised model, interestingly not only in Zagreb, but also in some more remote and less developed areas of Croatia, such as Slavonia. Instead of just waiting, various actors took a more active role in the temporary distributed hub model, but also proposed ways to contribute when the FCH would become operational.

- Social Inclusion

Finally, in the outcome area of 'social inclusion' the Zagreb pilot aimed for (i) fair access to knowledge, methods and resources to contribute to the innovation process in the neighbourhood, and (ii) connecting actors to work on social or community projects. A total of 5 targeted outcomes averaged a score of 7.6.

The local community has been engaged in the activities organised in the neighbourhood, where an inclusive and accessible to all approach was emphasised. The pilot carefully worked with participants and tried to make them all aware about the necessity to be open to other actors, not only those more technology-oriented, but also those focused on heritage, working with people with disabilities etc. Schools and the local community, led by Green and Blue Sesvete, supported the need to strive for a more open, inclusive, and diverse future FCH.

Moreover, Universities in Croatia traditionally are less involved in outreach activities, so a further goal of the pilot has been to engage more academics in the process. Indeed, the university was engaged in several social inclusion activities, represented by both professors interested in social inclusion, as well as students who engaged in activities and workshops. Overall, response varied and was not always in line with the initial expectations. A message for the future was the need to engage more actors beyond those directly involved with technology, in order to broaden the range and scope of ideas and activities of the FCH.

## 4. EVALUATION OF STRATEGIES: RESOURCES-LEVEL IMPACT

The monitoring and evaluation of impact on the level of CENTRINNO resources focuses on the strategies employed to enable pilots achieve their planned outcomes. The monitoring and evaluation is centred around the three platforms, namely the Cartography, Living Archive and FCH Toolkit, which formulated the core of the pilot-level experimentations based on the project's overall approach. Hence, the development of the platforms' strategies has been a continuous process, in which the WP5 team has been involved with the role of identifying common impact pathways to be monitored and evaluated at the end of the project.

The evaluation of strategies operates in two ways in the CENTRINNO impact assessment. First, it reflects the extent to which the level of **achievement of pilot outcomes can be attributed to and has been supported by key project's resources**. The CENTRINNO platforms hold a key role in supporting pilot micro missions, with the platform owners working together with the pilot teams to tailor the project's resources to their needs and context. Hence, the relevance of these collaborative processes demonstrates the impact of the CENTRINNO approach in supporting change.

Second, the **strategies demonstrate the potential for the change they have supported to be sustained**, within and beyond the project. Specifically, various tools and outputs from the pilots' experimentation with the CENTRINNO platforms are connected to the organisational practices defining the implementation of Fab City Hubs. Therefore, the evaluation of strategies functions as a bridge between the observable outcomes on pilot level and larger scale organisational and structural changes that may lead to broader transformation.

Details on these processes and the relevant methodological tools developed by the evaluation methodology are provided in the following sections.

### 4.1. Design and Planning: Strategy journals

While the OM sheets reflect on the pilot-level impact and outcomes, the strategy journals focus on aligning the planned outcomes with the actions and processes provided through the CENTRINNO platforms that may facilitate their achievement. The pilot strategy journals (see Annex III) have facilitated the match-making process between outcome areas, outcome categories, and platforms' tools and methods. The strategy journals (see Image 2 below) comprise two parts: (a) the strategy maps; and (b) the key actions & tools panel (for a detailed description, see section 3.2.2 in D5.1 [1]).

The WP5 team compiled and updated the strategy maps, based on the content of the OM sheets. The entries found in the strategy maps indicated a summary of the outcomes envisioned by each pilot for each outcome area under different outcome categories. Each different combination of outcome area and outcome category was classified with a code, comprising two letters corresponding to every outcome area (e.g., CE for circular economy,

CH for cultural heritage) and a number for every outcome category (e.g., 1 for resources, 2 for awareness and skills).

A visual representation of the strategy journals is provided in Figure 2 below (see Annex III for full resolution).

STRATEGY MAP					KEY ACTIONS
Strategy	Resources	Awareness & skills	Infrastructures	Networks & relationships	
	CE-1	CE-2	CE-3	CE-4	<b>Cartography</b>
Circular economy					Strategies addressed: (e.g., CE-1, CE-4) Key actions: ... Expected outputs: ... Expected impact: ... (e.g., environmental impact)
	CH-1	CH-2	CH-3	CH-4	<b>Living Archive</b>
Cultural heritage					Strategies addressed: Key actions: ... Expected outputs: ... Expected impact: ...
	VT-1	VT-2	VT-3	VT-4	<b>FCH Toolkit</b>
Vocational training					Strategies addressed: Key actions: ... Expected outputs: ... Expected impact: ...
	IS-1	IS-2	IS-3	IS-4	
Innovation spaces					
	SI-1	SI-2	SI-3	SI-4	
Social inclusion					

**Figure 2 - Strategy journals**

It should be highlighted that it is not a prerequisite for pilots to work on all outcome areas; rather they selected those that were more relevant to their plans. Nevertheless, almost all pilots planned outcomes on all five outcome areas.

The next step has been the definition of the key actions and tools by the relevant platform owners, namely META (Cartography), AHK (Living Archive) and VOL (FCH Toolkit). Based on the data of the strategy map, the WP5 team facilitated strategy sessions with the platform owners to identify potential actions and tools offered by the CENTRINNO platforms and their relevant interactions with pilots that can support pilots in achieving specific outcomes in each outcome area. Following up on these consultation processes, the platform owners planned the key actions and tools that could match with the pilots' outcomes to inform their interactions with the pilots accordingly.

Based on this initial identification, the platform owners devised and coordinated their interactions with the pilots according to their planned outcomes, with the WP5 team monitoring and documenting the process to evaluate the impact. Due to the continuous engagement of the platform owners with the pilot activities, the compilation of the strategy journals has been an on-going process, starting from the 2nd pilot sprint and continuing to the end of the 3rd and final pilot sprint. As the levels of engagement and the focus of each platform has been different, platform owners followed different approaches on how to anticipate, support, and document the relevance of their respective strategies, with the WP5 team facilitating the process.

## 4.2. Monitoring and Evaluation: Mapping pathways of change

The monitoring and evaluation on pilot-level has been a **continuous and dynamic process** throughout, but also in between the pilot sprints. The strategy journals have served as a starting point to identify potential supporting actions and tools through the project's resources in an otherwise long and complex process of change. The platform owners have adapted their planning and experimentation to better align with the pilot cities' priorities, while WP5 team has

been observing the interactions between platform owners and pilots and provided critical checks and feedback on the implementation of actions and tools on a regular basis, aiming for the alignment of the platform activities with each other and the project's theory of change. However, the process of urban transformation envisaged by each pilot city exceeds the range of support that any platform or toolkit can offer and involves a myriad of unforeseen factors and variables. Hence, the evaluation of the effectiveness of the strategies is based on an ex-post assessment of pilot achievements, by tracing them back to specific interventions, tools and actions foreseen or supported by the three platforms. This task of **mapping pilot pathways of change effectuated by the CENTRINNO platforms** is presented in more detail in the next section.

#### 4.2.1. Evaluation of pilot pathways of change<sup>3</sup>

Moving towards the project's completion, the platforms' content and data structures have been unfolding in a dynamic confluence with the pilot activities and primary outcomes. In this perspective, the monitoring and evaluation approach for this process in the final report has been focused on the convergence of different strategies by the three platforms, rather than on each platform separately (which was the case for sprint 2). Therefore, the presentation of cumulative results of platform strategies in relation to the pilot planned outcomes is no longer relevant, as a clear attribution of specific outcomes to single interventions is impossible to conduct. Instead, we focus on the identification of **main pathways of change** for each pilot city, which can be traced back to the way different strategies have contributed to pilot cities' capacities in response to local challenges. The pathways of change, thus, demonstrate how the project's synthesised resources have helped the pilot teams **develop new capabilities to address local challenges**.

In the following sections we present the data related to key pathways of change identified across each of the pilot cities. A narrative-based title has been prompted for each city by the WP5 team, which best summarises the outcomes of the interactions between the platform owners and pilot teams in response to the local challenges identified. With the focus being placed on the synthesised contribution of the platform strategies to a range of highly interdependent urban challenges, there is no on-to-one connection between platform strategies and local challenges. Instead, the **contribution of the tools and strategies identified is perceived to be cumulative**.

Finally, the highlighted pathways of change are not considered as the only perceivable change or achievement by the respective pilot cities. They are identified on the basis of **best illustrating the impact of the project's experimentation approach and resources**. References are made to platform actions and tools that facilitated the process and to pilot outcome areas and categories through strategies classification codes. The connections to platforms' strategies and local challenges have been inferred by synthesising diverse datasets from the platforms' resources, in collaboration with the platform owners. Where relevant, the data has been cross-analysed with WP5 data from the OM sheets and strategy sheets.

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<sup>3</sup> For the pathways of change worksheet see ANNEX [VII](#).

**4.2.1.1. Connecting and celebrating makers’ creativity for urban regeneration: Maakschap Amsterdam (Amsterdam)**

**Overview**

**Table 16 - Overview of Maakschap Amsterdam strategies**

<b>Platform strategies and tools</b>	<b>Strategies classification</b>	<b>Local challenges</b>
Open Workshop (FCH Toolkit; Cartography) Maakschap Amsterdam (FCH Toolkit) Space mapping and sharing (Cartography) Circular Neighbourhood Show (Cartography) Makers of Noord Exhibition (Living Archive)	CE-1: Mapping of local makers and main materials and ending rental contracts of spaces in the city of Amsterdam  CE-2: Raising awareness on the makers’ precariousness and their importance for the circular transition  CE-4: New circular opportunities through city-wide maker alliances  CH-2: Increased visibility of local makers  VT-2: Raising awareness on makership and affordable spaces for circular skills development  IS-3: Improved coordination, shared workshop spaces and knowledge exchange through a network of makers	<b>Housing:</b> High land and space prices lead to lack of workshop space  <b>Employment:</b> Disappearance of makers due to gentrification  <b>Waste generation:</b> Amsterdam’s ambitious circularity strategy requires people to repair and reuse local materials

**Description of change**

Maakschap is an open platform aimed at building alliances across makers to connect, share knowledge, and collectively advocate for supporting policies.

Through the organisation of open workshops (monthly events organised in different makerspaces) and roundtable discussions with policy makers, connections were facilitated to increase the makers’ outreach to new communities and develop shared understanding around the local needs and the type of productive and creative spaces available, focusing on circular crafts.

The regular organisation of these events helped forge an alliance for affordable and reliable workspaces, makers’ participation in urban planning, and the promotion of vocational

education programs in the city to increase access to circular manufacturing. Further, it enabled the local team to:

- increase the physical presence of the local team in the neighbourhood and enhance the visibility of pilot activities;
- better understand makers' and makerspaces' conditions and needs;
- enable partnerships among makers, foster stronger connection and knowledge sharing among them;
- create a shared space for makers to present their work, demonstrate their value for urban life, and voice common pressing issues

**4.2.1.2. Intertwining empowerment for urban transformation: The Poble Nou Fabrica exhibition experience (Barcelona)**

**Overview**

**Table 17 - Overview of Poble Nou Fabrica exhibition strategies**

Platform strategies and tools	Strategies classification	Local challenges
Collective XXL Embroidery Installation (FCH Toolkit) Hackathon School (FCH Toolkit)  Urban Talks (FCH Toolkit)  Circularly curated exhibition (Living Archive)  Roundtable discussions with local wood-related stakeholders to map circular opportunities (Cartography)	CE-1: Mapping opportunities for recycling of materials in the exhibition  CE-2: Knowledge exchanges among industry, public sector and local manufacturers spreading on potential circular wood applications in different fields  CE-3: New collaborations and support around ideas and uses for circular wood  CE-4: Knowledge and storage infrastructure on circular wood  CH-1: Intersectional stories of traditional craftsmanship and makership  VT-1: Access to Hackathon School methods and educational material  VT-2: Strengthening collaboration and building vocational training capacities in alignment with local enterprises	<b>Waste generation -</b> Barcelona's per capita waste generation is between 400 and 500 kg per year  <b>Income:</b> In Poble Nou, in 2011, the average family income was 88, compared to the average of 100 in Barcelona. Since then, actions have been taken, and an increase in family income has been observed. However, if inflation is taken into account, the people of Barcelona have lost 7.2% of their purchasing power since 2010, while 9.2.% is at risk of poverty.

### Description of change

Barcelona has systematically worked towards a FCH operating as a learning ecosystem able to engage diverse stakeholders from neighbourhood, city, and regional levels in creative exchanges and collaboration. Through the engagement of the local historical identity, on one hand, and the pressuring local challenges, on the other, the pilot activities encouraged wide participation and involvement through inclusive processes.

In this process, three tools/methods have been instrumental for the achieved results:

- (a) Hackathon School: a method and framework for aligning vocational training programmes with local needs and capabilities, in connection to local and global challenges and fostering the potential for local innovation through multi-actor cooperation and engagement.
- (b) Urban Talks: recurring cycles of open debate with citizens on culture and creativity in relation to the urban environment, bringing together diverse insights from the arts, cultural heritage, economy, technology and sustainability by outstanding professionals.
- (c) Collaborative curation of an exhibition, involving diverse urban stakeholders, including social enterprises, citizens, artisans, historians, and makers, in creating spaces to share the different perspectives about Poblenou urban transformation and its social impacts. The exhibition featured an embroidery installation that fostered community involvement and synergies in the curation and exhibition process, and roundtable discussions exploring opportunities for local wood reuse with relevant stakeholders.

The main achievements of this process include:

- Development of a learning ecosystem fostering multi-stakeholder partnerships among Vocational Schools, makerspaces and local businesses that streamlined diverse local skills, resources and capabilities through effective communication and collaboration to co-create feasible sustainable solutions to local needs;
- Increased engagement and empowering citizens in debates around urban transformation and social change by bringing creative practices to the forefront, through diversified spaces, synthesising digital and online territory with physical events and activities; and
- Creation of a common narrative, generating a sense of belonging in the process of transforming the site, valorizing the Poblenou productive identity, which was presented through participatory, creative, and circular practices.

#### 4.2.1.3. Weaving history through circular patterns of change (Blonduos)

##### Overview

<p>Table 18 - Overview of circular patterns of change strategies <b>Platform strategies and tools</b></p>	<p><b>Strategies classification</b></p>	<p><b>Local challenges</b></p>
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<p>Traditional and digital weaving (FCH Toolkit)</p> <p>Textile cluster (FCH Toolkit)</p> <p>Developing biofabrication and recycling capabilities (Cartography)</p> <p>Engaging with local in-depth history (Living Archive)</p>	<p>CE-2: Creating awareness and capabilities for locally produced low-carbon non-wool alternatives</p> <p>CE-4: Developing a circular textile business cluster</p> <p>CH-1: Enriching knowledge on the history of the site</p> <p>CH-3: State support of craft innovation</p> <p>VT-2: Developing skills synthesising heritage with modern textile practices</p> <p>IS-4: Cross-sectoral (state, universities, business) collaborations to foster new ways of working with textiles</p>	<p><b>Waste generation:</b> Iceland exhibits the highest per-capita waste generation across all CENTRINNO pilots. We focussed on mapping the wasted resources in the country's textile economy. Our insights show that imported clothing generates a lot of waste.</p> <p><b>GHG emissions:</b> In Iceland, per capita greenhouse gas emissions are up to 37 tons! This is mainly due to past land use changes associated with wetland drainage.</p> <p><b>Soil pollution:</b> Soil erosion - also due to the overgrazing of sheep and horses of delicate tundra soils - led to the degradation of 45% of Iceland's soils</p>
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### Description of change

Blonduos has facilitated the transition to more sustainable textile production by engaging stakeholders across the whole value chain and weaving circular and innovative connections and capabilities.

This transition has been based on the following processes:

- research exploration on alternative, bio-based textile materials along with their historical significance;
- innovative experimentation and training with students to develop textile machines apt for circular production; and
- interdisciplinary dialogue engaging research and innovation stakeholders from universities, business, and the public sector, to identify and streamline new economic opportunities.

Key contributing factors to this achievement have been:

- Traditional and digital weaving workshop: a set of teaching and method-building activities for students, researchers, artists and makers related to practical skills around weaving and the importance of cultural heritage for craft innovation.
- Textile clustering: development of an ecosystem of stakeholders around textiles connecting people, institutions, associations and makers.

The synthesised results of the above were:

- encouraging the rediscover of weaving as a cultural and economic heritage to invest in textile local production;
- increased awareness around small-scale textile productions;
- increased collaboration with international scholars;
- better understanding among makers on textiles, circular economy and a broad set of skills;
- strengthened the role of the Textile Center and new perceptions and opportunities around textiles.

**4.2.1.4. Developing a network of diverse partners to share spaces for work and experimentation (Copenhagen)**

**Overview**

Table 19 - Overview of distributed spaces network strategies <b>Platform strategies and tools</b>	<b>Strategies classification</b>	<b>Local challenges</b>
Emotion Networking (FCH Toolkit) Stakeholder network (FCH Toolkit) Space sharing (Cartography) Fieldwork and in-depth interviews (Living Archive) Podwalks (Living Archive)	CE-1: Mapping local stakeholders and available commercial spaces to facilitate sharing  CH-1: Engaging with deep history of the area  CH-3: Exhibitions spaces engaging local heritage connections  CH-4: Enabling local councils to include heritage values in democratic processes  IS-2: Cross-sectional cooperation and policy strategies for creative activities and crafts  IS-4: New collaborations and support for the network of local makers and diverse urban actors, businesses and organisations	<p><b>Housing:</b> Copenhagen has the highest rent overburden in Europe. Also workshop places, offices and shops listings have been affected by an increase in rent, making it difficult for the creative sector to gain access to commercial real estate. In CENTRINNO, we analysed the rent increase within and outside of rent-controlled creative zones.</p> <p><b>Employment:</b> The pilot area's neighbourhood Bispebjerg is the highest in Copenhagen. Through workshops and trainings with students and local teachers, the pilot contributed to the creation of new skills and new student awareness about jobs in the creative industry</p>

**Description of change**

Copenhagen has initiated pathways towards a more inclusive and democratic process of urban zone planning related to the development of local neighbourhoods and the preservation of

cultural heritage. Through the development of a network of partners, including libraries, open workshops and makerspaces, a joint model has been created for sharing open workplaces and, alongside, a community able to mobilise around local challenges.

By combining mapping activities and democratic dialogue around urban development, the pilot team has achieved:

- the facilitation of an inclusive decision-making process about urban renewal
- raise awareness on specific elements of heritage important to local stakeholders;
- increased networking and knowledge exchange on local challenges and resources;
- improved collaboration between local stakeholders; and
- increased visibility of local stakeholders’ perspective in processes related to urban development.

**4.2.1.5. Un-wasted: Mapping people and material flows to energise and re-skill local society (Geneva)**

**Overview**

**Table 20 - Overview of un-wasted strategies**

Platform strategies and tools	Strategies classification	Local challenges
Digital craftsmanship training (FCH Toolkit) FCH co-creation (FCH Toolkit) Biochar from local wood waste (Cartography) Shared waste collection system (Cartography) Engaging the public in co-creating local exhibition (Living Archive)	CE-1: Mapping ZIC actors and materials, creating a shared infrastructure for storage and sorting of resources to enable circular opportunities on biochar and soil regeneration  CE-4: Forging new networks and connections on neighbourhood level around reuse of materials  CH-3: Exhibitions spaces engaging local heritage connections  VT-2: Raising awareness and creating skills around digital craftsmanship	<p><b>Soil pollution:</b>            Through geospatial mapping, we have identified several sites that are listed as potentially polluted from former industrial activities, including sites directly adjacent to the ZIC. Through the FCH, the pilot <b>created relationships</b> to jointly explore the reuse of local wood waste for soil-remediating biochar production</p> <p><b>GHG emissions:</b>            Geneva’s per capita emissions are higher than the average Swiss. Mapping of resources (e.g. sustainable fashion outlets in Geneva) help build and awareness for low-carbon lifestyles.</p> <p><b>Education &amp; learning:</b>            Geneva’s education system reinforces social inequalities through an early segregation in different tracks. Through increasing availability of</p>

		teaching methods and alternative learning environments through open schooling, the pilot responds to this challenge
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### Description of change

Geneva has launched a process to reverse waste of people and materials, caused and perpetuated through the unequal distribution of environmental and cost-of-living burdens across different districts, population groups and ethnicities. This was addressed through parallel processes of co-creating an inclusive FCH hub and targeted training and education activities around digital craftsmanship.

The cumulative results of this process have been to:

- promote transparency in discussions and negotiations about the future of the area;
- encourage communication, prevent conflicts and increasing ownership of the project;
- build trust for a solid partnership between the Municipality and the local stakeholders;
- create a network of local actors and foster relationships;
- develop awareness, acquire skills, and design a governance model that takes into account the available skills, resources, and capacities of all participating partners
- design the spaces of the Geneva FCH by mapping the resources needed to renovate the building, in alignment with the city development plans;
- raise awareness on alternative learning tools and methods in makerspaces or open schooling through the recognition by regional authorities and policy makers;
- increase availability of alternative teaching methods by fostering collaborations with makerspaces.

#### 4.2.1.6. *An open platform synthesising digital and physical circular co-designing of future spaces (Milan)*

### Overview

Table 21 - Overview of co-design platform strategies

Platform strategies and tools	Strategies classification	Local challenges
Manifattura Milano (FCH Toolkit)	CE-3: New circular products and services through collaborations by micro-enterprises	<p><b>Waste generation:</b> With 435.3 kg of generated waste per person and year, Milan’s municipal waste is higher than EU averages.</p> <p><b>GHG emissions:</b> Milan generated over 5,000,000 tons of carbon in 2017 - 29% of</p>
Milano Circolare (FCH Toolkit)		
Shared branding of circular products (Cartography)	CE-4: Demonstrating circular synergies to boost the municipality’s participation in public consultation for a circular	
Mapping former industrial		

usage (Living Archive)	economy action plan  CH-2: Enriching knowledge on the history of the site	which comes from businesses and industrial activities. Supporting the circular and sustainable manufacturing of goods starts to build skills and awareness of alternative production pathways, which also have a lower embodied impact.
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### Description of change

Milan has worked towards an active and energised city-wide community of craftspeople and artisans collaborating under a shared brand and through common circular and urban manufacturing practices.

This process was facilitated through:

- the mapping of stakeholders and materials through Manifattura Milano, a collaborative digital platform;
- the introduction of Meta Brand as shared branding of circular collaborative products; and
- the organisation of large-scale events, such as Circolare Milano, bringing together the mapped stakeholders and other circular initiatives to showcase their circular products and discuss common challenges and opportunities.

The cumulative achievements include:

- the creation of a virtual space to discuss issues and co-design strategies for supporting local and circular manufacturing;
- facilitation and support of collective discussion about the prefiguration of possible FCH models based on local business' and artisans communities' needs.
- the dissemination of community activities and increase the pool of local businesses interested in circular processes;
- access to resources, promotion of events and networking activities around circularity;
- enhanced comprehension of the concepts underlying circular design and fashion on behalf of the Municipality, citizens, and makers;
- the creation of support mechanisms for local stakeholders to facilitate improved and more circular production practices;
- increased sensitivity in sustainable consumption choices; and
- the creation of formal groups to sustain ongoing circular activities and serve as a reference point for the municipality.

#### **4.2.1.7. Cultivating (re)emerging forms of urban food production (Paris)**

##### **Overview**

**Table 22 - Overview of urban food production strategies**

Platform strategies and tools	Strategies classification	Local challenges
<p>KUMU for learning ecosystems (FCH Toolkit)</p> <p>FoodTrack method (FCH Toolkit)</p> <p>Increasing local food production regenerative systems (Cartography)</p> <p>Designing food from waste (Cartography)</p> <p>Developing platforms for selling local food products (Cartography)</p> <p>Increasing food waste composting (Cartography)</p> <p>Engaging with inspirational historical context of metropolitan food systems (Living Archive)</p>	<p>CE-1: Integrating a supporting narrative through the mapping and visualisation of micro circular loops</p> <p>CE-4: Dynamic map providing support infrastructure to forging alliances among local community initiatives and replicate pilot activities</p> <p>CH-1: Enriching knowledge on the history of the site</p> <p>CH-3: State support of craft innovation</p> <p>VT-2: Developing mapping capabilities</p> <p>VT-3: Local support infrastructures and services to develop circular food production skills</p>	<p><b>Soil pollution:</b> We mapped over 600 sites of listed sites affected by soil pollution. The mapping of skills in the alternative food system also identified several stakeholders with skills to grow food in soilless methods.</p> <p><b>Waste generation:</b> Amongst CENTRINNO pilots, the citizens of Paris exhibit the highest per-capita waste generation. Food waste makes up a large part of the 450 kg generated per person per year. Sharing food waste reduction skills through trainings and awareness rising amongst businesses and citizens supports the fight against food waste.</p> <p><b>Employment:</b> Youth unemployment, especially for people without a diploma is a big problem in Paris. Only 1 out of 4 people without a diploma have a job</p> <p><b>Land use change:</b> Urbanization has led to a low share of green space, especially around the pilot area. Here only 5m<sup>2</sup> of green space per person are available.</p>

**Description of change**

Paris has leveraged historical urban farming knowledge and inspirational context to facilitate the metropolitan food systems transition. Two main aspects that guided this process have been (a) the mapping of a learning ecosystem of skills, resources, spaces, and actors related to local food production and maker practices; and (b) the Foodtrack platform, organising a collective archive and toolbox of the “French method”, as a blueprint for the emerging urban food production and distribution.

The setting up and implementation of this multifaceted process of re-activating a learning ecosystem and production method led to the following achievements:

- increased access to available skills and resources held within the Parisian network of food producers and makers addressing different educational and training needs;
- access to digital tools that support an active community and a distributed learning and production ecosystem around alternative urban food systems;
- foster business opportunities for training or distributed production;
- support key partnership for multidisciplinary collaborations;
- restoring agricultural practice in the city and increase the amount of visible urban land under cultivation;
- increased awareness on the Parisian agricultural heritage and reconnecting the broader public to food issues.

**4.2.1.8. Building community resilience and capabilities through diverse narratives: Synthesising human and more-than-human industrial and ecological dimensions (Tallinn)**

**Overview**

**Table 23 - Overview of local resilience strategies**

Platform strategies and tools	Strategies classification	Local challenges
Community values co-design tool (FCH Toolkit)	CE-1: Increased know of local government on circular resources and opportunities, including skills and stakeholders	<b>Soil pollution:</b> identified soil pollution around Kopli from former industrial activities
World Cafe method (FCH Toolkit)		<b>Waste generation:</b> identified high waste generation
Building a soil learning network (Cartography)	CE-2: Increased awareness on circular business models in crafts and other domains	<b>Land use change:</b> identified land use change and loss of green space due to urban development
Building energy autonomy capabilities (Cartography)	CE-3: Strengthening existing ecosystem synergies	<b>Income:</b> Tallinn has a significant problem with inequality, especially for Russian-speaking Youth
Promoting circular design and repair skills (Cartography)	CH-2: Increased awareness on local heritage and its potential for sustainable transformation through the sharing of personal and the development of skills and embodied experiences	<b>Multivoicedness</b> - Tallinn, and Kopli93 in particular, has been embedded in different political regimes, which contribute to the existence different historical legacies and narratives and to challenges to connect and overcome sensitive and/or controversial
Engaging multivoicedness through diverse storytelling (Living Archive)	CH-4: Stronger multi-disciplinary connections and collaborations inspired by the site's history and heritage	
	VT-2: Increased availability and	

	<p>access to skills and expertise for circular and making practices</p> <p>VT-4: Forging connections with vocational schools and support in the creation of circular curricula</p> <p>IS-2: Increased awareness and support on behalf of the local government for a the operation and replication of the FCH model</p>	<p>histories and lived memories.</p>
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### Description of change

The common identification and mapping of community values has been crucial for the development of a common understanding around the community’s sense of mission and belonging and unambiguously giving meaning to community events. Also, the inclusion of diverse perspectives, including human and more-than-human actors, such as bees and soil, as well as objects and artefacts, employed diverse storytelling and raised awareness on the embedded practices of care and regeneration connected to the achievement of the community’s goals.

This process has been facilitated by a synthesis of different tools and methods, including:

- tailored co-design tool for community values’ mapping;
- a world-cafe community meeting format, tailored to support community relationships and decision-making.

The main achievements of this approach was:

- the creation of an inclusive community, able to reach consensus on important matters through shared values;
- strong collaboration and alignment of needs and vision both for the community and with the municipality;
- improved capacity for self-organisation and developed shared ownership and responsibility towards the space and solutions created, overcoming differences in languages, backgrounds and beliefs;
- enabling clear self-expression in an inspiring and safe space for discussion, enabling individual values to be articulated and understood;
- find links between shared values and work principles and community sustainability;
- generate new knowledge, develop circular skills and experiences.

### 4.2.1.9. *Circular (and) concrete stories about urban past and future (Zagreb)*

#### Overview

Table 24 - Overview of concrete stories strategies

Platform strategies and tools	Strategies classification	Local challenges
Maker Faire (FCH Toolkit) STEM week (FCH Toolkit) Mapping urban mining resources (Cartography) Diversifying perspectives among local inhabitants (Living Archive)	CE-1: Mapping locally available urban waste streams and re-use partners  CE-2: Improved knowledge on circular skills and opportunities and urban mining potential  CH-2: Engaging multi-stakeholder perspectives from underrepresented voices  CH-3: Exhibitions spaces engaging local heritage connections	<p><b>Waste generation:</b> Construction waste is the second-largest waste stream within the city of Zagreb. Through CENTRINNO, we identified that the majority of construction waste is concrete. Zagreb's to-be-demolished old brownfields will be a major source of concrete waste in the coming years.</p> <p><b>Employment:</b> There is a shortage of specialised trades workers, such as plumbers, builders, repairers and carpenters. These trades play important roles in a future-proof circular city.</p>

#### Description of change

Zagreb has focused on the engagement and mobilisation of a diverse community of makers and the promotion of a culture of creativity and innovation to re-imagine the past and future of the Sljeme meat packing factory through circular practices and heritage stories.

Two instrumental processes have been: (a) Maker Faire, a community-organised event that celebrates maker culture and innovation; and (b) an exhibition presenting elements of the site's past, co-created with local stakeholders.

The main achievements have been:

- the creation of a physical space for the gathering of local makers and SMEs, increasing the visibility of their work on innovative circular projects;
- strengthened connections among multidisciplinary actors (students, creatives, and SMEs);
- attracting local stakeholders for networking activities and the exploration of future partnerships;
- engaging diverse stakeholders in interdisciplinary dialogue to map the potential urban mining resources from abandoned infrastructure;

- increased awareness and training activities on circular skills and capabilities, and business opportunities.

#### 4.2.2. Evaluation of strategies’ contribution to outcomes progress

From the pathways of change described in the previous section, in the following table we synthesise the platforms’ contribution to the overall progress of pilot activities in addressing local challenges.

The table below presents the aggregate data from all pilots, aiming to demonstrate the contribution of the project’s approach as a whole, to also facilitate the data aggregation on project-level impact in the following chapter (see section 5.2). For the connection of strategies and outcomes to local challenges, the strategies’ classifications have been used as cross-reference. As the recurrence of each strategy across pilots varies, we also provide an indication of each strategy’s recurrence (in % percentage) to illustrate the breadth of each strategy’s impact in addressing specific local challenges. The average score indicated in the last column is weighted by the number of outcomes planned by each pilot for the respective outcome areas/categories targeted by the strategy classifications (e.g., for CE-1 strategies the average score occurs by adding up the weighted scores for all outcomes under the Circular Economy outcome area and Resources category across all pilots.)

As the changes under investigation are highly qualitative, the score is only relative and reflects relative change as planned and evaluated by the pilot teams and documented in the outcome journals. In the next chapter, we will connect this with more hard impact indicators using the project’s resources.

**Table 25 - Summary table: Contribution of platforms’ strategies to pilot progress**

Local challenges	Total Strategies/ Cities	Outcome Areas/Categories	Recurrence (%)	Weighted Average progress score
<b>Materials - Soil pollution</b>	4 cities (BLO; GEN; PRS; TLL)  13 strategies	<b>Circular Economy</b> CE-1: x3 CE-2: x2 CE-3: x1 CE-4: x3	25.00	6.5
		<b>Cultural Heritage</b> CH-1: x2 CH-2: x1 CH-3: x3 CH-4: x1	19.44	6.5

Local challenges	Total Strategies/ Cities	Outcome Areas/Categories	Recurrence (%)	Weighted Average progress score
		<b>Vocational Training</b> VT-2: x4 VT-3: x1 VT-4: x1	19.44	6.4
		<b>Innovation Spaces</b> IS-2: x1 IS-4: x1	8.33	6.9
<b>Materials - Waste generation</b>	7 cities (AMS; BCN; BLO; MIL; PRS; TLL; ZAG)  15 strategies	<b>Circular Economy</b> CE-1: x5 CE-2: x5 CE-3: x3 CE-4: x5	50.00	6.9
		<b>Cultural Heritage</b> CH-1: x3 CH-2: x4 CH-3: x3 CH-4: x1	30.56	6.1
		<b>Vocational Training</b> VT-1: x1 VT-2: x5 VT-3: x1 VT-4: x1	22.22	6.0
		<b>Innovation Spaces</b> IS-2: x1 IS-3: x1 IS-4: x2	11.11	5.9
<b>Climate - GHG emissions</b>	3 cities (BLO; GEN; MIL)  9 strategies	<b>Circular Economy</b> CE-1: x1 CE-2: x1 CE-3: x1 CE-4: x3	16.67	6.9
		<b>Cultural Heritage</b> CH-1: x1 CH-2: x1 CH-3: x2	4.26	6.3
		<b>Vocational Training</b> VT-2: 2	5.56	7.1
		<b>Innovation Spaces</b> IS-4: x1	2.78	7.0

Local challenges	Total Strategies/ Cities	Outcome Areas/Categories	Recurrence (%)	Weighted Average progress score
<b>Biodiversity - Land use change</b>	2 cities (PRS; TLL)  12 strategies	<b>Circular Economy</b> CE-1: x2 CE-2: x1 CE-3: x1 CE-4: x1	13.89	6.5
		<b>Cultural Heritage</b> CH-1: x1 CH-2: x1 CH-3: x1 CH-4: x1	11.11	6.3
		<b>Vocational Training</b> VT-2: x2 VT-3: x1 VT-4: x1	11.11	6.6
		<b>Innovation Spaces</b> IS-2: x1	2.78	9.0
<b>Health &amp; wellbeing - Housing</b>	2 cities (AMS; CPH)  11 strategies	<b>Circular Economy</b> CE-1: x2 CE-2: x1 CE-4: x1	11.11	6.4
		<b>Cultural Heritage</b> CH-1: x1 CH-2: x1 CH-3: x1 CH-4: x1	11.11	6.9
		<b>Vocational Training</b> VT-2: x1	2.78	4.4
		<b>Innovation Spaces</b> IS-2: x1 IS-3: x1 IS-4: x1	8.33	7.2
<b>Economic inclusion - Income</b>	2 cities (BCN; TLL)  10 strategies	<b>Circular Economy</b> CE-1: x2 CE-2: x2 CE-3: x2 CE-4: x1	19.44	7.3
		<b>Cultural Heritage</b> CH-1: x1 CH-2: x1 CH-4: x1	8.33	5.9

Local challenges	Total Strategies/ Cities	Outcome Areas/Categories	Recurrence (%)	Weighted Average progress score
		<b>Vocational Training</b> VT-1: x1 VT-2: x2 VT-4: x1	11.11	6.1
		<b>Innovation Spaces</b> IS-2: 1	2.78	9.0
<b>Economic inclusion - Employment</b>	4 cities (AMS; CPH; PRS; ZAG)  11 strategies	<b>Circular Economy</b> CE-1: x4 CE-1: x2 CE-4: x2	19.44	6.5
		<b>Cultural Heritage</b> CH-1: x1 CH-3: x2 CH-3: x3 CH-4: x1	19.44	6.0
		<b>Vocational Training</b> VT-2: x2 VT-3: x1	8.33	5.3
		<b>Innovation Spaces</b> IS-2: x1 IS-3: x1 IS-4: x1	8.33	7.2
<b>Culture - Multivoicedness</b>	1 city (TLL)  8 strategies	<b>Circular Economy</b> CE-1: x1 CE-2: x1 CE-3: x1	8.33	7.5
		<b>Cultural Heritage</b> CH-2: x1 CH-4: x1	5.56	6.6
		<b>Vocational Training</b> VT-2: x1 VT-4: x1	5.56	7.8
		<b>Innovation Spaces</b> IS-2: x1	2.78	9.0
<b>Society - Education learning</b>	1 city (GEN)  & 4 strategies	<b>Circular Economy</b> CE-1: x1 CE-4: x1	5.56	5.4
		<b>Cultural Heritage</b> CH-3: x1	2.78	5.6

Local challenges	Total Strategies/ Cities	Outcome Areas/Categories	Recurrence (%)	Weighted Average progress score
		<b>Vocational Training</b> VT-2: x1	2.78	6.0

Some quick observations from the summary table above include:

- **A high degree of dispersion** of the strategies across the different challenges, outcome areas and categories, with only a handful of cases demonstrating a high recurrence rate across pilot cities. This is to some extent to be expected, given the complexity and diversity of urban contexts, missions, and approaches and, if anything, speaks for the richness in terms of possible pathways of change supported by the project’s approach. Still, the few “dense” outcome areas (i.e., the ones where more strategies have been envisaged to address more categories) exhibit an overall satisfactory score (i.e., above 6.0, with 9.0 being the ceiling).
- **The primary emphasis on ecological challenges**, which is evidenced by the noticeable difference between the total number of strategies related to the challenges under Materials, Climate, and Biodiversity areas (49 strategies), with socio-economic (32 strategies) and cultural (12 strategies) challenges following. This can be justified on two reasons, first, the increasing pressures posed to urban environments by ecological and biodiversity collapse, and, second, the strong emphasis of the CENTRINNO approach to circular and sustainable practices.
- **The absence of strategies connected to “Social Inclusion” outcome area** is something that becomes evident. However, as we have explored in depth in the previous chapter, all pilots have planned outcomes in this outcome area, while many of them directly or indirectly connect to project’s resources, tools, or platform activities. Nevertheless, this may indicate that the planning of the project’s resources either did not foresee means dedicated to the support of these outcomes or it did so through other means and processes that are harder to monitor and evaluate.

## 5. PROJECT-LEVEL IMPACT REPORT: EVALUATION OF ORGANISATIONAL PRACTICES

The evaluation and monitoring on project-level is based on the definition of **organisational practices** that describe the necessary conditions for the implemented activities' potential to sustain the achieved change over time. The organisational practices reflect the effectiveness of the CENTRINNO approach, by describing key competences that need to be developed and maintained during and after the project's life-cycle. They integrate the evaluation of strategies and outcomes by assessing the potential for broader, systemic impact in socio-economic, environmental, and cultural heritage terms.

The ten FCH principles (ref) are the basis for the identification of the organisational practices upon which the project is evaluated.

### 5.1. Design and Planning

The evaluation of the project's envisaged transformation builds on the CENTRINNO theory of change, which defines the project's starting point, assumptions, planned activities and ambitions. It helps explain how the project's planned activities contribute to the desired outcomes and, eventually, lead to observable impact. The theory of change provides the main line of narrative that connects impact with the CENTRINNO framework and approach. Therefore, it serves to assess the effectiveness of the project in fostering its vision and goal.

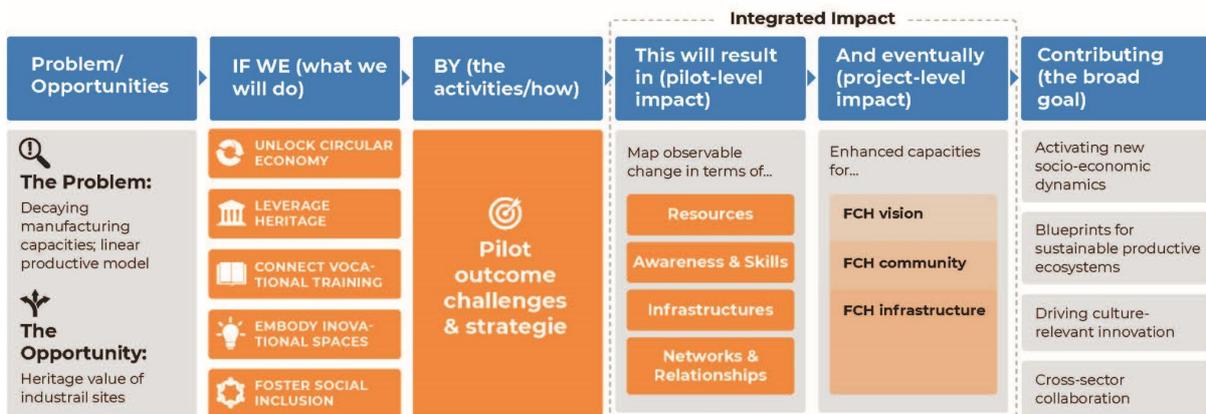


Figure 3 - The CENTRINNO theory of change

Hence, the evaluation on project level is a collective and reflective process involving the main project stakeholders, including WP leaders, platform owners and coordinators of other project resources, and pilot teams. It builds on the pilot-level data, including the evaluation of outcomes and strategies, to document the key outcomes, tools, and actions contributing to the development of **emerging organisational practices** that effectuate and support a tentative transformation of city districts to FCHs.

### 5.1.1. Contextualising outcomes with local challenges

In sprint 2 pilot cities were introduced to the FCH organisational practices to engage with the project’s transformative vision. Building on this primary work, in sprint 3 the pilot teams participated in a co-creation process to specify the project’s theory of change in response to local challenges towards the completion of the project and beyond. Under joint facilitation by the teams of WP2, 3, 5 & 6 pilot teams were introduced to a **consolidated baseline for their urban ecosystems, based on the doughnut model** (see Figure 4 below), developed by the Cartography team (for details see D2.6 [3]).

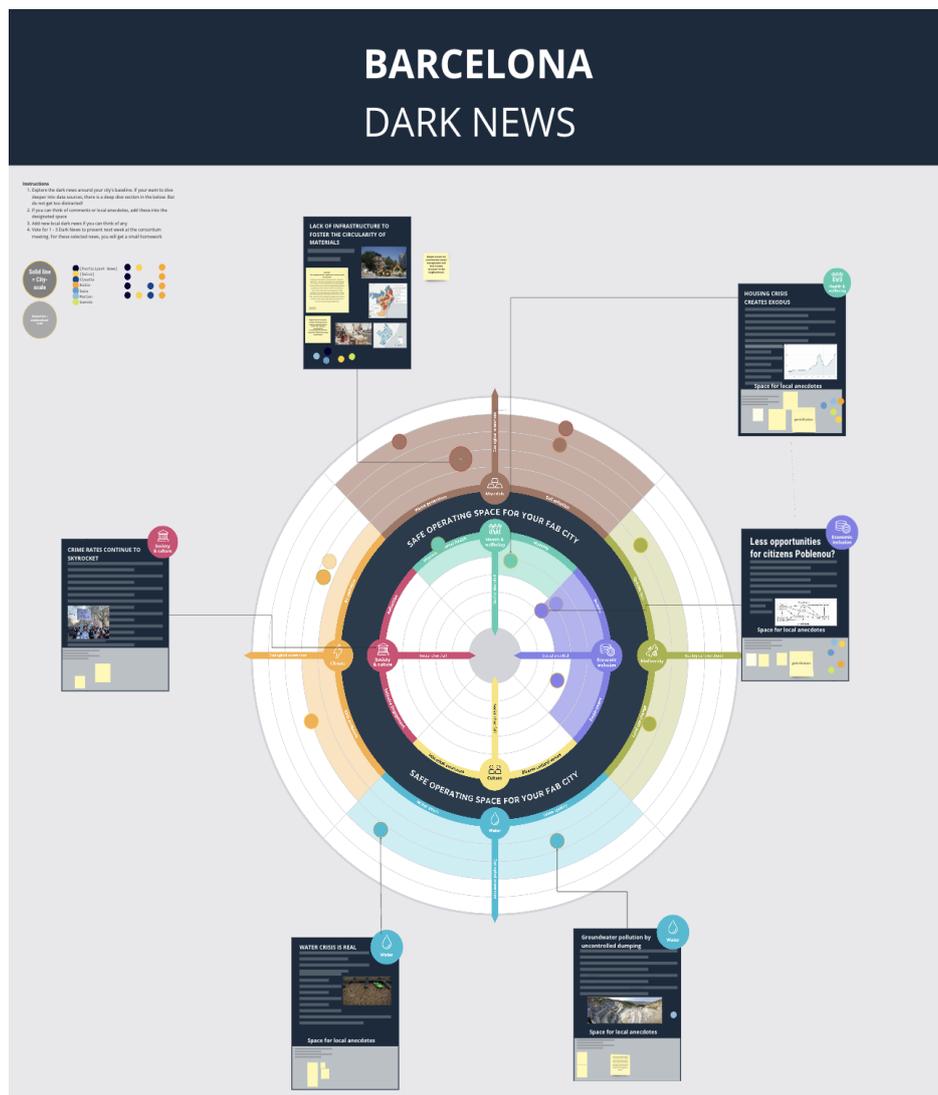
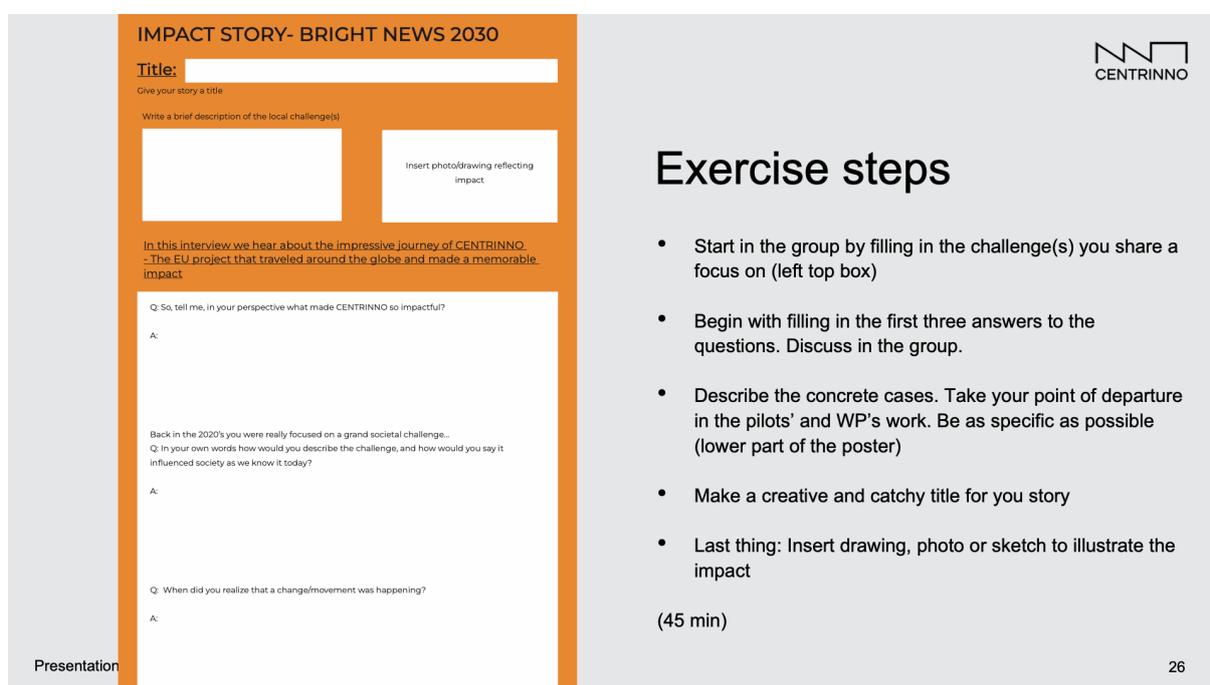


Figure 4 - Example of a baseline doughnut from the Barcelona pilot <sup>4</sup>

<sup>4</sup> Live version of the image in full resolution available at: <https://www.centrinno-cartography.org/barcelona>.

Specifically, the doughnut organises local challenges under eight main pillars synthesising socio-economic, environmental, and cultural heritage dimensions defining the safe operating space of a (tentative) Fab City. Based on these dimensions, overshoots and shortfalls were illustrated based on the urban ecosystem mapping, identifying key challenges for each city in the form of “dark news” stories, contextualised with the participation of the pilot teams.

As a next step, the pilot participants have worked on designing impact stories in response to the key local challenges, in the form of future “bright news 2030” (see Figure 5 below). Guiding questions were helping the pilot teams identify the project elements that have (tentatively) contributed to the future vision.



**IMPACT STORY- BRIGHT NEWS 2030**

**Title:**

Give your story a title

Write a brief description of the local challenge(s)

Insert photodrawing reflecting impact

In this interview we hear about the impressive journey of CENTRINNO - The EU project that traveled around the globe and made a memorable impact

Q: So, tell me, in your perspective what made CENTRINNO so impactful?

A:

Back in the 2020's you were really focused on a grand societal challenge...

Q: In your own words how would you describe the challenge, and how would you say it influenced society as we know it today?

A:

Q: When did you realize that a change/movement was happening?

A:

Presentation

## Exercise steps

- Start in the group by filling in the challenge(s) you share a focus on (left top box)
- Begin with filling in the first three answers to the questions. Discuss in the group.
- Describe the concrete cases. Take your point of departure in the pilots' and WP's work. Be as specific as possible (lower part of the poster)
- Make a creative and catchy title for you story
- Last thing: Insert drawing, photo or sketch to illustrate the impact

(45 min)

Figure 5 - Impact stories template and guidelines

### 5.1.2. Building the CENTRINNO Impact Inventory

In a workshop following up to the above, pilot teams were guided into devising pathways of “how to get there”, related to the impact stories, by synthesising different resources from the project’s experimentation. These components were translated to the **CENTRINNO impact inventory**, comprising (see Figure 6 below):

- (a) **outcomes**, defined as changes in behaviours, actions, and relationships on behalf of the boundary partners;
- (b) **tools**, related to diverse resources enabling and developing the necessary capabilities to influence and sustain change;
- (c) **organisational practices**, seen as systematic ways of doing and relating within the local FCH as an organisational unit and beyond; and

(d) **impact**, understood as observable results on site, neighbourhood, or city level, in response to local challenges that can be directly or indirectly attributed to the project's influence.

Using the above categories, pilots investigated for possible contributions of each one to the transformative vision they have co-designed, to eventually draw the contours of an action plan and strategy beyond the project's implementation.

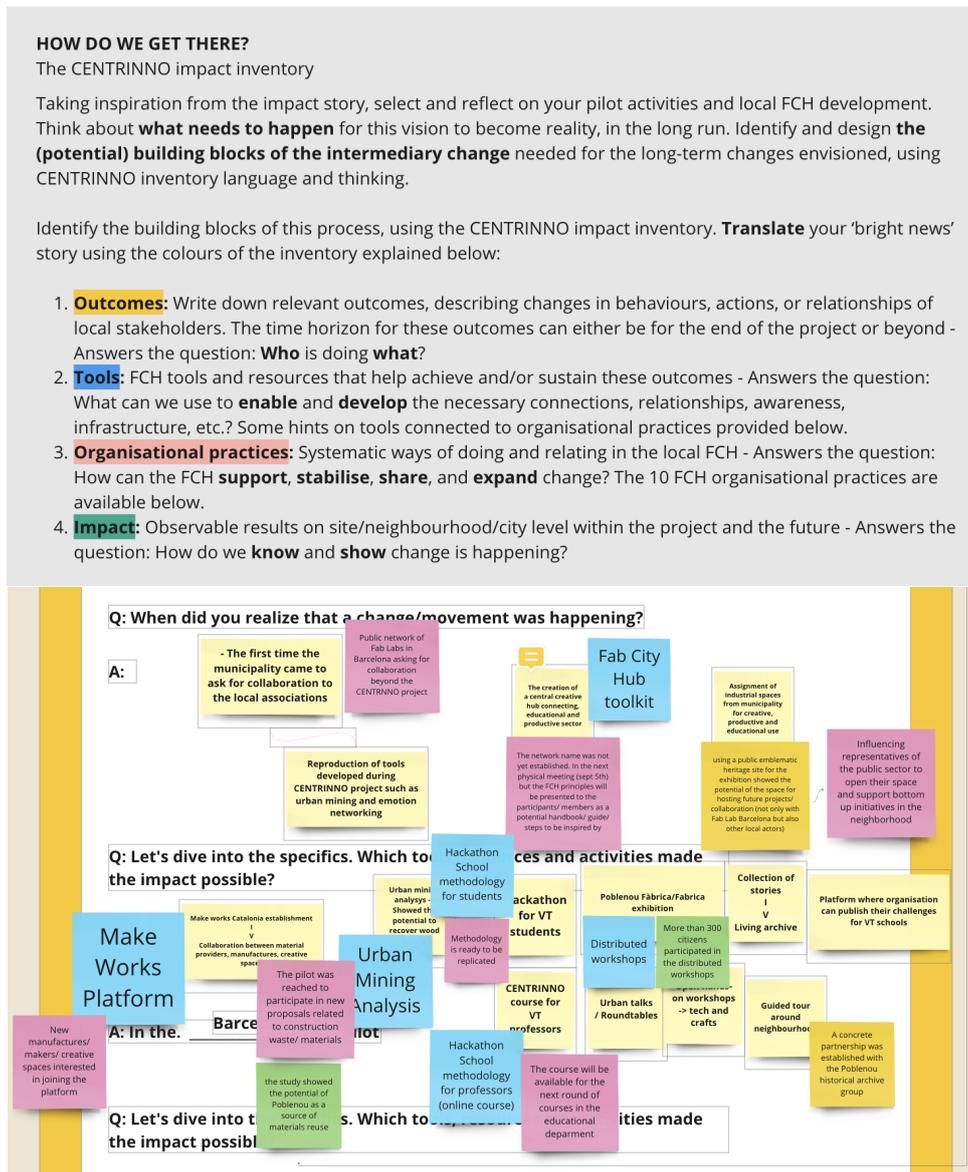


Figure 6 - “How do we get there” inventory from Barcelona pilot impact story

The results of the impact inventory workshop have been operationalised and connections were created with the related processes of other WPs, using diverse data sets from WPs' reporting activities and intense consultations with other WP teams and platform owners to interpret the data, in connection with the development of pathways of change (see section 4.2).

Building on the above synthesis, the WP5 team has been able to conduct an evaluation of the project's performance based on the consolidated impact inventory for each pilot city, as explained in the following section.

## **5.2. Monitoring and Evaluation: Organisational practices worksheets**

For the final impact assessment report, the consolidated data of the pilot impact inventories (see section [5.1.2](#)) have been recorded in the updated versions of the organisational practices worksheets (see Annex [IV](#)). In turn, the project's overall performance is evaluated in terms of effectively furthering its vision and approach. The evaluation is based on a broad range of data operationalised through the impact inventory categories.

### **5.2.1. Evaluation of the CENTRINNO impact inventory**

The evaluation in terms of the impact inventory categories is summarised in Table 24 below, as explained below:

1. Organisational practices for the implementation of FCHs are clustered in three categories, following the categorisation of the FCH principles<sup>5</sup>, i.e., FCH vision, community, and infrastructure.
2. For each cluster of organisational practices, we describe the contribution of some illustrative outcomes achieved by pilot cities, devising different tools and methods provided by the CENTRINNO platforms and resources. Due to the vast number of outcomes and resources employed, this summary is based solely on the results of the impact inventory workshop and the connections provided by the pilot cities in that context, interpreted, where necessary, by the WP5 team. Hence, they are merely illustrative indications of how various outcomes and tools contribute to the development of FCH organisational practices. Nevertheless, it should be noted that the outcomes achieved are not limited to these examples, as it has been extensively analysed in section [3.2](#).
3. Under "Lessons learnt" we provide a narrative-based analysis on the qualities of impact achieved and the learning processes from the development of FCH organisational practices experienced in different pilot cities.

Connections with organisational practices were in most cases based on indications by the pilot teams on various reporting dashboards, and (where appropriate) interpreted by the WP5 team in collaboration with platform owners.

Further validation will be provided at the end of the project through stakeholder surveys.

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<sup>5</sup> Details on the FCH principles and the three categories at <https://volumesmedia.gitbook.io/fab-city-hub-toolkit/what-is-a-fab-city-hub/10-principles-for-fab-city-hubs>.

**Table 26 - Summary of project-level evaluation**

Impact inventory	
<p><b>Organisational practices for FCH vision</b></p> <p><b>OP-1:</b> Activating interactions and facilitating connections and collaborations among the different actors active in urban environments.</p> <p><b>OP-2:</b> Access and connection to information, communities, projects and initiatives related to the local distributed creative and productive ecosystems.</p> <p><b>OP-3:</b> Embracing emergence of new needs, projects, and organisations through open and resilient structures amidst rapidly changing and hazardous environments.</p> <p><b>OP-4:</b> Engaging with and creating new institutions through experimentation and prototyping of diverse assemblages of actors and functions.</p>	
Outcomes	Tools
<ul style="list-style-type: none"> <li>● Circular collaboration among local makers and craftspeople (AMS)</li> <li>● Development of circular skills in making and crafts practices (AMS)</li> <li>● Public emblematic heritage site for exhibition showed the potential of the space for hosting future projects and collaborations among local actors (BCN)</li> <li>● Financial support for local bottom-up initiatives (CPH)</li> <li>● New collaborations across stakeholders in pilot area (CPH)</li> <li>● The regional office for education collaborating with Educational Makerspaces for funding, alignment of strategy, and joint working groups (GEN)</li> <li>● A community with common interests and advocacy (MIL)</li> <li>● Creation of a large community of diverse stakeholders (PRS)</li> <li>● Kopli Vocational schools embracing the FCH approach to recover local biodiversity (TLL)</li> <li>● People in the city of Tallinn recognise the importance of being part of a community (TLL)</li> </ul>	<ul style="list-style-type: none"> <li>● Maakschap Amsterdam (AMS)</li> <li>● Open Workshop (AMS)</li> <li>● Hackathon school (BCN)</li> <li>● Distributed workshops (BCN)</li> <li>● KUMU (CPH)</li> <li>● Stakeholder network (CPH)</li> <li>● FCH co-creation (GEN)</li> <li>● Educational Hackathon (GEN)</li> <li>● Open Schooling activities (GEN)</li> <li>● Manifatura Milano (MIL)</li> <li>● Meta brand (MIL)</li> <li>● Training programmes (PRS)</li> <li>● KUMU (PRS; TLL)</li> <li>● Emotion Networking (TLL)</li> <li>● Values mapping (TLL)</li> <li>● World Cafe (TLL)</li> </ul>
<p><b>Lessons learnt:</b></p>	
<p>The first four organisational practices illustrate how FCHs can mobilise local actors in diverse encounters and work towards a common and inclusive vision. Through the project’s experimentation approach pilot cities have demonstrated alternative ways that urban stakeholders can interact, connect, and construct resilient and creative relationships and formulate networks, communities and initiatives with more or less levels of formalisation and institutional support.</p>	

Some illustrative examples are presented below.

**AMS:** FCHs can effectively connect makers and craftspeople by facilitating exchange and mutual support. This connection leads to increased awareness on the role of makers in the city and the potential of localised production to provide for local needs and sustainability, by advancing the circularity goals on city level.

**BCN:** The embroidery canvas employed in the Fabrica exhibition gave the opportunity for stakeholders to meet regularly, co-create a plan for a public intervention including the steps to be followed, allocation of responsibilities, and discussions on the importance of women’s rights in the context of local manufacturing. The increased engagement combined with multi-level dialogue on urban transformation led to influencing representatives of the public sector to open their space and support bottom-up initiatives in the neighbourhood and co-create a joint vision.

**CPH:** A network of diverse partners has been created to facilitate the sharing of spaces for work and experimentation. The network also fostered inclusive and democratic dialogue on urban zone planning, related to the development of local neighbourhoods and the preservation of cultural heritage, asserting influence to the municipal planning and strategy processes. Moreover, the mapping of creative businesses in the area enabled multi-level dialogue including local developers. By supporting the viability of creative initiatives, the pilot activities created awareness on circular practices that can generate employment opportunities, while contributing to reduced waste and prolonged life-cycle of consumer products.

**MIL:** Awareness raising and advocacy actions have taken place inside institutions, parallel to the activation of an innovative protocol enabling circular production and urban manufacturing. This process helped the alignment between the development of circular productive capabilities by local creative enterprises, on one hand, and the influencing of relevant legal provisions concerning the use of waste as a resource, on the other.

**PRS:** Through extensive mapping of a learning ecosystem comprising skills, resources, spaces, and actors related to local food production and maker practices aligned with the Foodtrack platform, a living collective archive and toolbox has been created for the “French method”, to serve as a blueprint for the emerging urban food production and distribution. Distributed workshops have been utilised to foster new connections and interactions among actors with complementary needs and facilitate conversation and the creation of open spaces for dialogue. Partnerships emerged out of the strengthening of the network, leading to job opportunities, with a significant number of trainees finding new employment.

**TLL:** The FCH provided a blueprint and reasoning for the creation of a resilient community that can engage with- and support city planning and functions, through various means, including policy recommendations and working examples. Community action has taken off across the city, expanding into many neighbourhoods, redefining the meaning of open, shared and green spaces that can serve important functions and operations to address local needs and challenges.

### Organisational practices for FCH Community

**OP-5:** Bottom-up deliberation for defining the needs and conditions for a community coalescing around a physical space.

**OP-6:** Enabling participation in expression and debate through inclusive approaches that give space to citizens and local communities.

**OP-7:** Facilitating community action, while orchestrating a common vision.

Outcomes (city)	Tools (city)
<ul style="list-style-type: none"> <li>• Creation of affordable spaces and incentives for circular practices by the city (AMS)</li> <li>• A concrete partnership was established with the Poblenou historical archive group (BCN)</li> <li>• Citizens engaging in repair activities in circular economy workshops and repair cafes reducing waste (CPH)</li> <li>• Teachers recognise the value of outdoor pedagogy and open schooling by setting up educational activities with Educational Makerspaces (GEN)</li> </ul>	<ul style="list-style-type: none"> <li>• Maakschap Amsterdam (AMS)</li> <li>• Open Workshop (AMS)</li> <li>• Make Works platform (BCN)</li> <li>• Distributed workshops (BCN)</li> <li>• Hackathon school (BCN)</li> <li>• Maker Faire (GEN)</li> </ul>
<p><b>Lessons learnt:</b></p>	
<p>The organisational practices 5, 6, and 7 relate to all the tools, means, and processes that contribute to the creation and support of a FCH community. From inquiring on the needs by bringing people together in physical spaces, to empowering different voices and modes of conduct to be represented in the design of space, to coordinating community action in line with a common vision, the spatial dimension is tightly intertwined with community development. However, much like community action, so can space take different shapes and forms within and beyond urban environments.</p> <p>Some illustrative examples are presented below.</p> <p><b>AMS:</b> The participatory mapping and experimentation of the makers' network helped establish a learning ecosystem that enabled diverse grassroots voices and practices to contribute to strategies for sustainable development through circular creative activities.</p> <p><b>BCN:</b> The FCH principles and organisational practices served as the basis and inspiration for the creation of a common vision and strategy among different urban stakeholders. It can be further systematised in the form of a handbook or guide, specifying the steps to be taken to pursue this vision and strategy.</p> <p><b>CPH:</b> A distributed network of partners has been developed, including libraries, open workshops and makerspaces, in a joint model for sharing open workplaces and mobilising community action around local challenges. This provided the necessary flexibility for different and unconventional assemblages of actors to engage with dimensions of space and community action that have hitherto been challenging to do and improve understanding across people and neighbourhoods</p> <p><b>GEN:</b> The co-creation of an educational programme facilitated bottom-up deliberation to increase community engagement by ensuring diverse input, shared ownership, and tailored solutions. By promoting consensus, transparency, and creativity, a community-defined physical space has been designed, fostering long-term commitment and inclusivity. Representatives from makerspaces and other new actors are regularly consulted by the regional education office and a working group has been created to formulate proposals for a new referendum concerning the middle school system.</p> <p><b>MIL:</b> The organisation of large-scale demonstration events, such as Circolare Milano, has brought together the mapped stakeholders and other circular initiatives to showcase their products and discuss common challenges and opportunities. The Introduction of the Meta Brand as a shared signifier of circular collaborative products further solidified the contours of the local circular innovation community and related ecosystem.</p>	
<p><b>Organisational practices for FCH Infrastructure</b></p>	

**Practice 8:** Incremental design of space to create room for real and situated needs to emerge from the community.

**Practice 9:** Create awareness around convivial forms of innovation, manufacturing capabilities, creative citizenship and social connections.

**Practice 10:** Multi-layered coordination combining physical spaces and facilities, with digital communication for diverse communities.

Outcomes (city)	Tools (city)
<ul style="list-style-type: none"> <li>● Participating in new project proposals related to construction and waste/ materials (BCN)</li> <li>● TextileLab delegated to a space for innovation and learning new skills (BLO)</li> <li>● New knowledge and extended network via partner collaboration (BLO)</li> <li>● New jobs and opportunities for the region (BLO)</li> <li>● Open schooling is recognised by policymakers as a valuable methodology to support and implement (GEN)</li> <li>● Extensive mapping and mobilisation of actors in depollution and food waste reuse (PRS)</li> <li>● Tallinn Strategic Center has made radical changes in the way nature is addressed and taken care of in the city (TLL)</li> <li>● FCH operating as an innovation centre related to waste recycling and new materials (ZAG)</li> </ul>	<ul style="list-style-type: none"> <li>● Urban mining analysis (BCN)</li> <li>● Distributed workshops (BCN)</li> <li>● Traditional and digital weaving (BLO)</li> <li>● Textile cluster (BLO)</li> <li>● Circolare Milano (MIL)</li> <li>● KUMU (PRS; ZAG)</li> <li>● Foodtrack platform (PRS)</li> <li>● Living Archive and local exhibition (ZAG)</li> <li>● Maker Faire (ZAG)</li> </ul>

### Lessons learnt

The final three organisational practices evince the potential of the FCH learning ecosystem to mature and become more established, through shared infrastructures apt to nurture and support community action and foster its vision on city level and beyond. The idea and practice of FCHs expands in terms of both territory and space beyond the confines of one or several specific buildings or sites, to a constellation of shared and interconnected patterns of community learning and organising manifested through diverse means, including physical and digital places, projects, and creative and productive coalitions.

Some illustrative examples are presented below:

**BCN:** With more than 300 citizens participating in the distributed workshops, the potential of Poblenou as a source of materials reuse has been established. The participation in new project proposals related to construction and waste materials and the operationalisation of the Hackathon School methodology in replicable form for educational programmes point out to the prospects of such a development.

**BLO:** Through innovative experimentation and training, students have been supported to develop textile technologies apt for circular production. Interdisciplinary dialogue, engaging research and innovation stakeholders from universities, business, and the public sector, helped identify and streamline new economic opportunities, influencing the inclusion of textiles as a feature in local and regional policy planning. Community outreach, open events and communication has helped Increase awareness and understanding around different aspects related to textile work, waste and innovation.

**GEN:** Community spaces have been designed by mapping the resources needed to renovate existing building(s) and infrastructure in alignment with the city development plans. Simultaneously, the process helped raise awareness on alternative learning tools and methods in makerspaces and open schooling, leading to the recognition by regional authorities and policy makers. By fostering collaborations with makerspaces the availability and visibility of alternative teaching methods has been increased. The role of digital tools in support of innovation and improvement of manufacturing capabilities for local craftspeople has been recognised, fostering engagement with creative citizenship and participation in collaborative projects, contributing to the community by sharing their knowledge and skills. This improved the quality and creativity of sharing practices and collaborative innovation, alongside improvements in efficiency and scalability, designating multi-stakeholder collaboration and makerspaces to an integral part of the Geneva learning ecosystem.

**MIL:** With the Manifattura Milano platform as a central connection hub, a virtual space has been created to discuss issues and co-design strategies for the support of local and circular manufacturing. This process enhanced the comprehension of the concepts and practices underpinning circular design and fashion on behalf of the Municipality, citizens, and makers and facilitated the creation of support mechanisms for local stakeholders to engage with improved and more circular production practices. Influence has been asserted through public procurement for innovation, experimenting with provisions that may favour small local businesses and circular manufacturers, further establishing the local circular innovation ecosystem and infrastructures.

**PRS:** An extensive map of polluted soil and new innovative actors working on soil depollution and food waste reuse helped raise awareness on the potential of urban agriculture and circular food practices in response to city-level ecological and social challenges. Simultaneously, fertile ground has been provided for the creation of local synergies and improvement of economic sustainability.

**TLL:** The creation and demonstration of a training program in new fields connected to a circular economy in response to real local practices has contributed to the Kopli Vocational school gaining an ever bigger number of students, improving the quality and accuracy of their curricula. Furthermore, urban planning in Tallinn has been influenced to include more green space and less space for new buildings and construction, while more streets are dedicated to pedestrians and cyclists. A paradigm shift has been signified, with green and open spaces being viewed as places supporting community action, able to serve diverse functions and cover local needs, rather than facilities for mere recreation. The Tallinn FCH has been showcased as a good practice for other cities across Europe and beyond.

**ZAG:** Extensive community outreach and engagement through events and systematic networking on national, regional, and international level helped increase awareness on- and the understanding of recycling of construction waste, with focus on concrete, including relevant research and innovation processes. New ideas on the development of local circular economy have emerged, pertaining to different topics around the recycling of concrete, which contribute to the creation and recognition of the Zagreb FCH space.

As it becomes evident from the table above, pilots have demonstrated a variety of pathways for leveraging the project’s experimentation approach to build FCH capabilities in response to local challenges. Given the high degree of interrelatedness between different organisational practices and the diverse interpretations these can take from their concrete implementation by different pilot cities, a clear and methodologically tight separation of the contributions to each single organisational practice and/or cluster of them is particularly challenging, and may also not be really useful. Conversely, the value of monitoring and presenting the different pilot achievements under the ten organisational practices serves to improve our understanding of the different ways pilot experimentations helped the project perform better as an organisational

unit. As such, it may help the CENTRINNO partners build upon the capacities developed throughout the project to further promote and sustain impact in their respective activities.

### 5.2.2. Synthesised impact: Evaluating the CENTRINNO approach

From Table 26 above we can infer the relevance of the outcomes and the ways those have been supported by the project’s tools and resources in relation to local socio-economic, environmental, and cultural heritage challenges. Additionally, in section [4.2.2](#), we demonstrated the connections of the identified pathways of change in addressing local challenges using the classification of the doughnut model, adapted by the Cartography (see D2.5 [\[3\]](#)). In this section we attempt to synthesise the data from Table 23 with performance indicators sourced by different project’s resources (e.g., pilot KPIs or Cartography data) to evaluate the project’s overall performance in response to socio-economic, environmental, and cultural heritage challenges. The specification of the indicators and their connection to local challenges has been conducted in consultation with the CENTRINNO Cartography team, by synthesising different datasets across WP 2, 3, 4, and 5 and, where applicable, following validation by the pilot teams in facilitated workshops.

Due to the scale and complexity of the challenges and the context within which the pilot activities have been unfolding, exact measurement of high-level impact on socio-economic, environmental, and cultural heritage level across cities is extremely difficult to be conducted and, even if done so, very challenging to be attributed to specific project activities. Therefore, our assessment in terms of socio-economic, environmental, and cultural heritage impact reflects **the degree at which pilots’ capabilities have developed in response to local challenges**.

Table 27 below summarises the results of the above process.

**Table 27 - Summary table: Contribution of platforms’ strategies to pilot progress**

Impact area/ Doughnut impact areas	Average progress score (max=9)	Performance indicators (sources of evidence)
<b>Socio-economic</b>		
<b>Health &amp; wellbeing</b>		
<b>Housing</b>	<b>6.2</b>	<ul style="list-style-type: none"> <li>● <b>226</b> people of general public reached in spatial policy for affordable working spaces events (AMS - KPI sheet)</li> <li>● <b>90</b> makers added to the Cartography (AMS - KUMU sheet)</li> <li>● <b>6 multi-stakeholder network events</b> resulting in new collaborations &amp; partnerships (CPH - KPI sheet)</li> <li>● <b>1 Fund</b> for creative industries and urban environments created (CPH - pilot reporting)</li> <li>● <b>3 written and verbal collaboration</b></li> </ul>

		<b>agreements</b> for resource sharing between local stakeholders (CPH - KPI sheet)
<b>Economic inclusion</b>		
<b>Income</b>	7.1	<ul style="list-style-type: none"> <li>● <b>17 new businesses</b> created (BCN - KPI sheet)</li> <li>● <b>70 job opportunities</b> created (BCN - KPI sheet)</li> <li>● <b>180 textile entrepreneurs</b> participating in “wool ideas” hackathon (BLO - KPI sheet)</li> <li>● <b>37 participants</b> in events organised in collaboration with Kopli Vocational School (TLL - KPI sheet)</li> </ul>
<b>Employment</b>	6.2	<ul style="list-style-type: none"> <li>● <b>43 stakeholders</b> contributing to the local network for creative businesses (CPH - KPI sheet)</li> <li>● <b>6 skill-building workshops</b> for <b>245 elementary students</b> from local schools (CPH - KPI sheet/KUMU sheet)</li> <li>● <b>14 teacher licences issued</b> for the use of digital fabrication technology (CPH - KPI sheet)</li> <li>● <b>20 unemployed youth participants</b> in urban agriculture training programs (PRS - KPI sheet)</li> <li>● <b>9 events &amp; activities</b> targeted at the restoration of agricultural practices in the city (PRS - KPI sheet)</li> </ul>
<b>Environmental</b>		
<b>Materials</b>		
<b>Soil pollution</b>	6.8	<ul style="list-style-type: none"> <li>● <b>44 connections identified</b> for a regenerative wool &amp; textile ecosystem (BLO - KUMU sheet)</li> <li>● <b>2 identified sources of wood waste</b> useable in a potential local biochar production (GEN - KUMU sheet)</li> <li>● <b>2 urban actors added</b> to the Cartography with skills to grow food on brownfields (PRS - KUMU sheets)</li> <li>● <b>105 participants</b> in trainings during the Soil is Gold week (TLL - KPI sheet)</li> </ul>
<b>Waste generation</b>	6.2	<ul style="list-style-type: none"> <li>● <b>10 circular makers</b> mapped and connected (AMS - KUMU sheet)</li> <li>● <b>40 potential connections</b> mapped to reuse local wood waste (BCN - KUMU sheet)</li> <li>● <b>224 circular products</b> created for small scale local production (BCN - KPI sheet)</li> <li>● <b>11 types of resources</b> mapped (such as recycled, circular or regenerative biomaterials) which can be further used for innovations in textile ecosystem (BLO - KUMU sheet)</li> <li>● <b>103 associations, universities, SMEs, and makers</b> mapped in Cartography workshops (MIL</li> </ul>

		<ul style="list-style-type: none"> <li>- KUMU sheet)</li> <li>• <b>7 new circular products</b> made from waste materials as part of the META brand (MIL - KPI sheet)</li> <li>• <b>2 new products</b> created from waste through residency programs (MIL - KPI sheet)</li> <li>• <b>3 types of food waste reduction skills</b> mapped (PRS - KUMU sheet)</li> <li>• <b>8 new Makerspaces</b> operating in waste recycling centres inspired by Kopli 93 repair and upcycling activities (TLL - KPI sheet)</li> </ul>
<b>Climate</b>		
<b>GHG emissions</b>	6.6	<ul style="list-style-type: none"> <li>• <b>52 textile experts/ makers mapped</b> in the Cartography that use sustainable &amp; circular practices (BLO - KUMU sheet)</li> <li>• <b>14 sustainable outlets</b> for textile and fashion mapped (GEN - KPI sheet)</li> <li>• <b>243 professional participants</b> in circular production trainings (MIL - KPI sheet)</li> </ul>
<b>Biodiversity</b>		
<b>Land use change</b>	7.1	<ul style="list-style-type: none"> <li>• <b>122 citizens, students and businesses participating</b> in biodiversity and nature-related training events (TLL - KPI sheet)</li> </ul>
<b>Cultural Heritage</b>		
<b>Culture</b>		
<b>Multivoicedness</b>	7.7	<ul style="list-style-type: none"> <li>• <b>10 people</b> participating in Emotion Networking sessions (TLL - KPI sheet)</li> </ul>
<b>Society</b>		
<b>Education &amp; learning</b>	5.7	<ul style="list-style-type: none"> <li>• <b>48 students participating</b> in a workshop about circularity (GEN - KPI sheet)</li> <li>• <b>50 children participating</b> to workshops about digital manufacturing on site (GEN - KPI sheet)</li> </ul>

## 6. REFLEXION, LESSONS, AND NEXT STEPS

### 6.1. Reflecting on impact

The CENTRINNO impact assessment has been a continuous and reflective process, with the primary aim to help the consortium, as an organisational unit, *understand* what works and what not, but also why it does so or not; facilitate *learning* from the project's experimentation and implementation to incorporate lessons towards the project completion and beyond; with the end goal of *improving* the living environment of the addressed populations and further, by **creating the capabilities to maximise and sustain impact**.

Part of the above process has been the development of self-evaluation and monitoring capacities through recurrent iterations and adaptations of the outcome mapping process prototyped in CENTRINNO. Looking at the bigger picture, the IAF provided a systematic method to continuously influence, monitor, and evaluate change, in an incremental process of recurring circles. After each iteration, a reflective process took place, to consolidate lessons, guided by some open questions, as demonstrated in the following sections.

#### ***What are we doing well and what should we continue doing?***

After the completion of the third and final sprint most pilots have clarified a basic narrative of change, composed by: (a) a mapping and in-depth understanding of the local ecologies, pertaining to environmental, socio-economic and cultural heritage patterns; (b) a stream of key pathways of change, demonstrating how the CENTRINNO methods, tools, and resources can be synthesised around addressing local challenges; and (c) unique arrangements of organisational practices around physical spaces, community action, and inclusive engagement of urban stakeholders.

In terms of outcomes, throughout the three pilot streams, pilots have demonstrated a learning process, where they managed to better define their sphere of influence, setting ambitious, yet pragmatic and incremental progress markers to address high-level local challenges. The breadth of targeted outcomes across the five CENTRINNO key concepts illustrate the diversity of actionable interventions focusing on the planned outcomes, employing appropriate combinations of the available tools and methods. By focusing on achieving intermediary change, pilots developed their capabilities, in terms of resources, skills and capabilities, and relations, to foster larger-scale processes of change with substantial impact potential.

The definition of platform strategies demonstrated the different role and contribution of each one of their respective foci, namely mapping urban ecosystems (Cartography), leveraging cultural heritage (Living Archive), and developing the local FCH (FCH Toolkit). The Cartography was a vital resource to raise awareness, first internally, within the pilot teams, and afterwards externally, towards the urban stakeholders, on existing resources and untapped opportunities that could mobilise diverse encounters, synergies, and collaborations. The Living Archive has helped local stakeholders develop critical engagement with the experimentation site's history, create awareness on emotional distress, and identify diverse perspectives to facilitate change of mindsets, courses of action and relations in ways that are hard to measure and are often taken for granted. Finally, the FCH Toolkit has been an instrumental source of tools, methods,

and mutual learning, which helped pilots streamline their creative experimentation to build capacities and reach out beyond their local contexts.

The collaboration between the impact assessment team and the platform owners has generated multiple mutually reinforcing feedback loops to anticipate, strengthen, and monitor progress and performance across a broad range of fields and topics. The average rate of achievement reflected in pilot outcomes and as it feeds into the platform strategies and organisational practices paints a picture of a highly engaging process of co-creation that also yielded significant results.

### ***What are we doing “okay” or less-well and what can we improve?***

Despite the intensive interactions with pilot teams and the consolidation of impact pathways across the different CENTRINNO resources, a comprehensive systematisation across all impact assessment layers, all the way from pilot outcomes to the development of FCH organisational practices has not been fully integrated and validated. Due to the high complexity and interrelatedness of the dynamic contextual developments of each pilot city’s activities, pilots were not able to fully visualise how their planned and achieved outcomes has contributed to their performance as an organisational unit and develop systematic patterns of utilising the CENTRINNO impact inventory. This has been a limitation with regards to the CENTRINNO approach and the degree to which the project’s experience can be incorporated into a unified long-term strategy for urban transformation. Instead, the contribution of the project’s approach can be identified in catalysing, enabling and facilitating inclusive strategies for such strategies to emerge in a highly contextualised and learning-oriented process of transformation.

At any rate, the above limitation does not necessarily diminish the potential of the CENTRINNO legacy. Quite the contrary, it further emphasises how the engagement with the industrial past of European cities as it manifests in specific sites, artefacts and emotive memories, is a complicated task that can only be achieved through diverse and genuine encounters and co-created, multivocal narratives that embrace vulnerable aspects of post-industrial reality.

### ***What do we need to add to better address the organisational practices?***

During the third and final sprint a greater degree of integration among the different processes of experimentation across WPs has been achieved with reference to the organisational practices. Specifically, the contribution to the development of organisational practices has been an integral part of the FCH Toolkit implementation and integration of pilot tool templates and stories (see D.3.4 [forthcoming]). Further, the consolidation of the pilot urban ecosystems’ mapping into the doughnut models has been informed by the impact assessment framework, with streamlined connections drawn between pilot outcomes and strategies and development of organisational practices, on one hand, and addressing local challenges, on the other (see sections [4.2.2](#) and [5.2.2](#) above). Finally, the Living Archive has leaned on the doughnut contexts through the two pillars related to cultural heritage (“culture” and “society”), which adopted the narrative-based approach developed by the IAF to monitor and assess their contribution to the achievement of pilot outcomes and addressing local challenges.

Building upon this process of integration of the CENTRINNO approach, a more systematic way to qualify the contribution of the different elements of the FCH impact inventory may facilitate the sustainability and replicability of the project’s legacy and results. A process and template

for this task has been co-designed by the impact assessment team in collaboration with WP6 and contributions by the platform owners but has not been possible to apply and validate within the project's implementation period.

***Has any issue come up that we need to evaluate in greater depth? What? When? Why? How?***

As mentioned above, the contributions of local cultural heritage in catalysing inclusive and circular pathways of urban regeneration is difficult to measure and demonstrate. Through the CENTRINNO IAF we have managed to incorporate learning and capacity building into the planning and evaluation of pilot achievements, which, however, necessitated a parallel process of in-depth work with the pilot teams by dedicated groups, such as the Heritage Working Group. Still, there is probably a range of contributions and potential stemming from the engagement with local cultural heritage that is not fully reflected in the presentation of the impact monitoring and evaluation. This could be further investigated after the end of the project to further enrich the CENTRINNO impact inventory.

## **6.2. Summary of lessons learnt and closing remarks**

CENTRINNO envisioned to enable regenerative, sustainable transformation. It has been designed, planned, as well as managed and implemented to serve this vision. Yet transformation is a complex and emergent process, involving diverse stakeholders with divergent interests and agendas. Hence, a project working on sustainable transformation needs to develop the capacities to plan its vision alongside managing dynamic change. Moreover, there are limits concerning the degree and level of transforming that a project can realistically effectuate during its lifecycle. Thus, for the type of broad-scale transformation of the city landscape that CENTRINNO envisions, a crucial factor is not only the change achieved through the project activities themselves, but most importantly, the capacities to further and sustain change developed in the process.

In this perspective, we here summarise some of the main findings and lessons, based on the WP5 team perspective and following discussions and reflections with project partners in the last consortium and programme board meetings, as well as discussions with international experts on the field and the impact assessment teams of the two sister projects, T-Factor and Hub-In<sup>6</sup>.

### **Understanding impact as we monitor change**

The contribution of the CENTRINNO evaluation methodology boils up to the documentation of organisational practices. By monitoring how the various stakeholders involved in city transformation change their patterns of behaviour, action, and relationships, develop new capacities, and coordinate these capacities to reinforce and sustain change, we reach the primary aim of impact assessment: **understand why and how change happens**. In turn, the

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<sup>6</sup> Relevant discussions have taken place during a clustering webinar titled: "The hard challenge of assessing transformative impact in urban regeneration", co-organised by the three sister projects. Details available in the following link: <https://centrinno.eu/event/impact-urban-regeneration>. Additionally, representatives of the impact assessment teams from the three projects have been meeting on a bi-monthly basis to exchange updates and feedback.

different ways we create evidence, measure, qualify, and assess impact are interpreted into a common narrative that transcends the achievements that co-create it and becomes a distinct living form through which the organisational practices acquire meaning.

Organisational practices span from access to- and design of space, mapping and documentation of people and resources, creating new resources, and building community. In other words, the organisational practices describe what people need to do for the transformation to take place. The evaluation of organisational practices informs us on what they do well and what they need to do better.

### **From data, to stories, to tools**

Any measurement or comparison based on data collection has limitations, as neither methods nor datasets can be perfect. Especially when working with real people and communities operating in their situated context, a very important perspective is to interpret data as traces of human activity, riddled with all the nuances and imperfections of human nature. Therefore, data collection and analysis are merely a starting point of the CENTRINNO journey in the pilot cities. Data has been collected and systematised on various observable levels, combining top-down open datasets with bottom-up data collected with the pilot teams, including personal and collective stories, views, and anecdotes. We tried to shed light to those dimensions that often fall through the cracks and empower the protagonists of the project to voice their version of the experience. Most importantly, part of the experimentation process has been the development of a form of documentation, and the necessary skills to employ it, that can **convey the thick reality of the context from which any data collection stems**. Data are traces of human activity and their context allows us to tell their human version of the story.

In the CENTRINNO ecosystem the “cell form” of this documentation has been the tool, as broadly defined within the FCH Toolkit. The CENTRINNO tools capture the learnings of the cities’ journey from data to stories, by organising the experience in a form that can be exchanged, shared, reflected upon, and further developed. Tools in CENTRINNO are ultimately a mode of communication beyond the boundaries of time and space, conveying the experience and practices of developing and implementing FCHs.

Tools are, thus, an integral part of the CENTRINNO impact inventory, based on which the project-level evaluation has been conducted. The evaluation of organisational practices demonstrates the effectiveness of CENTRINNO as an integrated unit in organising people, resources, and skills in different ways to effectuate urban transformation. In this view, the FCH Toolkit serves a qualitatively different function relative to the other two platforms in the CENTRINNO approach, having a central role in effectuating the implementation of FCHs. However, this qualitative difference does not necessarily elevate the FCH Toolkit over the other platforms, as their relation is intimately interwoven. The mapping and engagement facilitated by the Cartography, and the patterns of meaning and connection effectuated by the Living Archive, have provided a solid basis upon which the FCH Toolkit has been built to provide a systematic process and step-by-step guide. This is evidenced by the fact that the FCH Toolkit includes tools and methods related to key processes of the other two platforms (e.g., KUMU for the Cartography, Emotion Networking for the Living Archive). Likewise, there are also distinguishable standalone contributions to the development of FCH capacities that can be

directly connected to strategies pursued through either one of the three platforms. However, as demonstrated in the final impact assessment report, the documentation of their symbiotic relationship is the key in monitoring and evaluating the project's overall performance in terms of organisational practices.

### **Reimagining innovation**

In sprint 2 organisational practice nr. 9 (Create awareness around convivial forms of innovation, manufacturing capabilities, creative citizenship and social connections) has been signified with increasing importance for several pilot cities. It is connected with the concept of convivial innovation, which largely frames the key concept of Innovation Spaces. The importance attached to practice nr. 9 can be seen as evidence of the need to radically change the way we think about innovation. In the context of urban transformation, building upon practices of circularity, cultural heritage, and sustainability, innovation is no longer only about building faster, better, stronger technologies, products, and processes. It is also about creating the conditions for a good life in the city. The FCH through Innovation Spaces practices provide the space for this alternative conceptualisation of innovation.

After the completion of the third and final sprint, the importance of convivial innovation has been reified. Convivial innovation practices have been designated as an integral part of the FCH infrastructure, albeit in the context of an emerging learning ecosystem. Prefigurative forms of this learning ecosystem can be found in different cities, such as the training and capacity building practices developing around shared resources (e.g., BCN, GEN, PRS), the incremental design and development of hybrid spaces of experimentation and societal provisioning (e.g., TLL, ZAG), and the development of interdisciplinary alliances around local needs (e.g., BLO, MIL). Most importantly, these patterns of a new ecosystem of value creation have been conveyed across the nine pilot cities and beyond, which is expected to continue after the project completion.

### **Physical and virtual spaces in hybrid times**

A new learning ecosystem fostering convivial innovation helps us reimagine the role of physical and virtual spaces (also in connection to organisational practice nr. 10: Multi-layered coordination combining physical spaces and facilities, with digital communication for diverse communities). Digital tools and the related capabilities enable new opportunities to exchange practices beyond neighbourhoods and cities, across Europe. However, these capabilities cannot replace the importance of physical spaces for people to meet and discuss. The physical space may be the starting point or the end goal of the process and there are different courses of action to be taken. When a physical space is available, a community can organise around it and (re)design, develop and revitalise the space together. When there is no access to an open or affordable physical space, which is the situation in many European cities today, the community practices need to develop first, which may increase the community's capacity to access a space (e.g., by creating better income opportunities), while putting pressure on the relevant stakeholders to improve the issue of access to spaces overall.

Nevertheless, the essence of "space" has been largely reconfigured itself. In the absence of available, accessible, or affordable urban buildings or working spaces, the pilot teams have

become creative in reinventing urban experimentation space, utilising the CENTRINNO approach and resources. For instance, AMS and CPH have managed to create strong networks of makers and craftspeople by mapping and mutualising scarce spaces for work and experimentation and creating a common vision and identity in the process. Likewise, ZAG has managed to work around the challenges with accessing a building of high historical significance by demonstrating that living memory can be recreated and nurtured elsewhere and become part of a community culture that may reappropriate the spaces that materialise the heritage they now carry. Finally, in cases where a specific building has been available, such as BLO, GEN, and TLL, the diverse encounters between communities and the living memory of spaces has enabled a reflexive redefinition of urban ecology, beyond the confines of sites, neighbourhoods, and even cities.

### **Balancing control with emergence**

Finally, in terms of the stakeholders identified, it is important to think along the lines of turning stakeholders to boundary partners. This includes identifying the people and organisations “at the boundaries of the project activities”, as we cannot reach everyone that can be engaged, those are the ones close enough to be influenced, but still far enough to influence others, thus, becoming part of the transformation. In turn, this can develop important capacities for self-organisation. Working with boundary partners provides the opportunity for pilot teams to address different interests and topics with their planned activities, involving actors outside the project’s direct sphere of control in the process.

There is, potentially, a tension with opening the project’s scope and sphere of action through such an approach, which has to do with **losing control**. Projects need adequate levels of control to be able to accurately report, justify, and prove their results. However, it has been shown that real impact and learning often **requires space for self-organisation and emergence**. The IAF has been designed to pursue a fine balance between the two. Documenting the processes and learnings of this experience is important, not only to understand and evaluate its outcomes, but also to allow for replication and further uptake.

### **Moving ahead: Life after CENTRINNO**

Moving towards the completion of the project, the IAF serves as a critical reflection point for the rich and rewarding experience that this project has been for partners and stakeholders. Since the beginning of the project, and once the need for a change in impact assessment approach has been decided, the IAF has systematically worked towards **the interpretation of a coherent narrative for CENTRINNO**. In this direction, the IAF has facilitated the alignment of the project activities to the project’s vision, with the monitoring and evaluation of outcomes, strategies, and organisational practices helping us understand not only *what* has taken place in the pilot sites, but most importantly *why* and *how* it has taken place. For this, ardent and close collaboration with all project partners, from WP and task leads to platform owners and pilot partners has been essential, including strong leadership and support by the Coordinator, Project Officer and the other two sister projects.

The forging of the types of relationships and patterns of communication, coordination and cooperation that made the achievement of a highly dynamic and multi-level process of

consensus and trust possible will remain as a testimony of the project's impact and an indivisible element of its legacy.

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## ANNEX I: OUTCOME MAPPING TYPOLOGY

OUTCOME CATEGORIES/TYPES	DESCRIPTION
<b>RESOURCES</b>	
Resources generated	The resources category refers to types of outcomes that have an impact in the creation, (re)use, maintaining, sharing or catering of resources, both material and intangible, that relate to productive processes, services, or other productive or socially oriented activities.
Resources mapped	They may include raw or natural materials, consumables and commodities (e.g., wood, metal, plastics, etc.), but also knowledge and design (e.g., designs of tools, bills of materials, production methods, etc.), as well as intangibles (e.g., stories, recipes, art, cultural assets, practices, etc.).
Resources re-used	
Resources shared (stories, materials etc)	
	Activities that may have outcomes related to resources can be new or shared inventories, databases, mapping activities, activities involving forms of reusing/recycling/ sharing of materials or stories, narratives, etc.
<b>AWARENESS AND SKILLS</b>	
Knowledge/Info circulated	This category refers to activities that result in increased awareness and the development of skills, such as the old and new methods, technical capabilities, forms of cooperation or organisation, etc.
Skills developed/ exchanged	
Capacity built/ strengthened	
	These may include outreach and dissemination activities circulating (existing) information or knowledge, training and educational activities for skills development, exchange, or sharing and building and strengthening capacities to achieve the desired outcomes.
<b>INFRASTRUCTURES</b>	
Revived/Regenerated spaces	This category refers to types of outcomes that reflect the development, restoration of infrastructures or access to them. Such infrastructures may include physical spaces (e.g., buildings, cultural and creative spaces, community centres, makerspaces, incubators, etc.), open spaces (e.g., urban gardens, beaches, public areas, etc.), as well as various activities and practices around them, such as new institutions, types of work and employment, etc.
New spaces/ businesses/ institutions	
New jobs/Employment opportunities	
	Activities related to infrastructures may be restoration, revalorisation or regeneration activities, development or fitting of new and old spaces, and activities creating new economic opportunities.
<b>NETWORKS/ RELATIONSHIPS</b>	
Connections between different communities/ stakeholders forged	The category for networks/ relationships refers to the development of new or strengthening/ repurposing of existing relationships among diverse stakeholders, on a local level and beyond. These outcomes can be new connections and networks involving different communities or stakeholders involved in- or targeted by the pilot activities, connections and networks among different areas or cities, as well as new contexts and opportunities for dialogue that can influence the quality of relationships across different actors.
New topics/opportunities of dialogue/collaboration between authorities and citizens	
Networks between areas/ cities created	
	Activities impacting on networks and relationships can be networking events or capacity building events involving diverse stakeholders in structured dialogue and interaction, but also the creation of sharing and connection building tools and methods that facilitate the identification and understanding of commonalities between interests or requirements among diverse actors, etc.

## **ANNEX II: OUTCOME MAPPING SHEETS/OUTCOME JOURNALS**

Link to all pilots' outcome mapping sheets and journals

DOI: <https://www.doi.org/10.5281/zenodo.10523191>.

## **ANNEX III: STRATEGY JOURNALS**

Link to strategy journals collaborative board:

DOI: <https://doi.org/10.5281/zenodo.10523258>.

## **ANNEX IV: ORGANISATIONAL PRACTICES WORKSHEETS**

Link to all pilots' organisational practices worksheets:

DOI: <https://doi.org/10.5281/zenodo.10523294>.

## **ANNEX VI: OUTCOME MAPPING DATA**

Link to outcome mapping data spreadsheet:

DOI: <https://doi.org/10.5281/zenodo.10523134>.

## **ANNEX VII: PATHWAYS OF CHANGE WORKSHEET**

Link to pathways of change worksheet:

DOI: <https://doi.org/10.5281/zenodo.10523406>.

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