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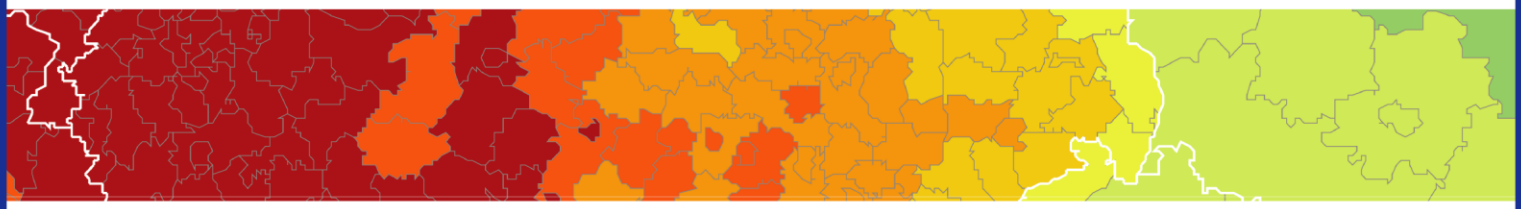

SHARING
Stocktaking and assessment of typologies of Urban Circular Collaborative Economy Initiatives

Targeted Analysis

Final Report

01/04/2020

Final Report

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Abbreviations

SDG	Sustainable Development Goal
UCCE	Urban Circular Collaborative Economy

1 Introduction

This study has been initiated in the context of the Urban Agenda Partnership on the Circular Economy[1] with the aim to better understand the potential contribution of collaborative economy initiatives to the circular economy. It is intended to be a used as a "Knowledge Pack" on the collaborative economy for cities and regions in Europe. The Knowledge Pack comprises the present report, six case studies, and a practical guide including recommendations for policy makers at different levels.

This Chapter briefly reminds the purpose and scope of the study and introduces the concept of the Urban Circular Collaborative Economy.

1.1 Purpose and scope of the study

The starting point for this study is the acknowledgement that cities and regions face numerous challenges linked with sustainability: demographic change, suburbanisation, climate change, economic growth, social exclusion, to name a few. For this reason, sustainability has become an important focus of local and regional policymaking.

The circular economy can help local and regional governments to answer to those sustainability challenges, by reducing emissions and the use of resources, contributing to business innovation and fostering job creation. On the other hand, the collaborative economy, because it exchanges un-used or under-used assets, can be a useful tool to achieve the transition towards the circular economy. Local initiatives that are not necessarily for-profit but generate benefits for the society as a whole, are particularly relevant to this respect.

The ultimate objective of this ESPON Targeted Analysis is to create a **common understanding of the Urban and Circular Collaborative Economy across European territories.** The goal is to support policy makers with territorial evidence on the different impacts of Urban Circular Collaborative Economy initiatives, going beyond the large and more well-known collaborative economy platforms (e.g. Uber, Airbnb) and taking into account smaller, local, and "for benefit"[2] initiatives instead.

As regards the scope, our study focuses on the following six territories: the cities of The Hague (Netherlands), Prato (Italy), Maribor (Slovenia), Porto (Portugal), the region of Flanders (Belgium) and Greece. As the six territories include cities (Maribor, Hague, Prato, Porto), regions (Flanders) and a country (Greece) the conclusions and recommendations developed focus on those three territorial levels.

[1] See here: https://ec.europa.eu/futurium/en/circular-economy

2 "For benefit" should be understood here as opposed to "for profit": the goal is not to generate financial returns but to contribute to foster broader environmental, economic and social goals. See the classification of the Urban Agenda for the EU Partnership on Circular Economy. Available at: https://ec.europa.eu/futurium/en/circular-economy/better-knowledge-draft-action-8-develop-collaborative-economy-knowledge-pack-cities

The study will aim to answer to the following key questions, which have determined the division of this report into the different Chapters:

Table 1: Study research questions and structure of the present report

Key research question	**How the study answers to the question**	**Chapter**
How can the collaborative economy (local and for benefit initiatives) contribute to the circular economy?	This study contributes to a better understanding of urban circular collaborative economy initiatives by defining the concept, establishing a typology and enquiring about their impact potential. It aims to guide policymakers through a better knowledge of the concept and the different forms those initiatives can take.	• Chapter 1 • Annex 4 (Literature review)
What positive environmental, economic and social impacts can be achieved by those initiatives and what are their success factors?	This study provides evidence of the impacts of urban circular collaborative economy initiatives in cities and regions and analyses the effects of territorial characteristics and policies on their development. It assesses the success factors and obstacles encountered by the initiatives in the territories under analysis and details their different impact potentials.	• Chapter 2 • Chapter 3 • Annex 2 (Case studies) • Annex 5 (Workshop summary)
How to identify the initiatives that answer to the territories' sustainability challenges and support them with the right tools?	This study provides policymakers with recommendations in the areas of knowledge, regulation and funding, to make better use of the collaborative economy in their territory. Each recommendation suggests policy tools to help implementation in the territories.	• Chapter 4 • Annex 1 (Practical guide) • Annex 3 (Criteria for the impact model and list of impact indicators)

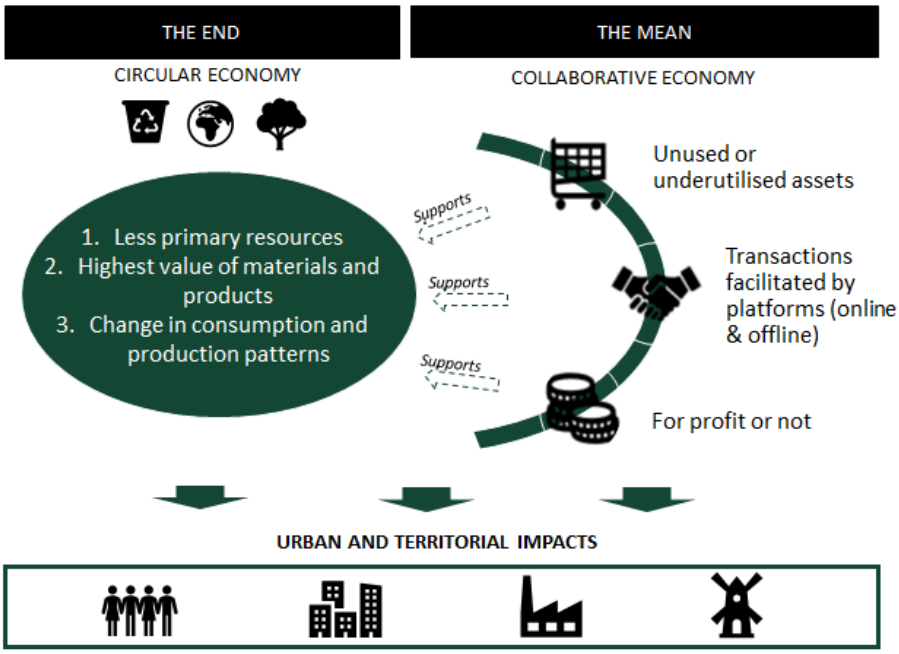
The following section introduces the concept of the Urban Circular Collaborative Economy, explores existing typologies and introduces our categorisation of initiatives into different domains.

1.2 Urban Circular Collaborative Economy: some definitions

1.2.1 Bridging the gap between the collaborative and the circular economy

The Urban Circular Collaborative Economy is a concept bringing together the circular and the collaborative economy. It designates initiatives using a collaborative way to exchange goods and services with the aim to use primary resources more efficiently. In other words, the Urban Circular Collaborative Economy encompasses **initiatives using the collaborative economy as a mean to achieve circular economy goals.** Figure 1 below illustrates this interrelationship, bringing to the concept of Urban Circular Collaborative Economy.

Figure 1: The concept of Urban Circular Collaborative Economy



Source: VVA.

The Urban Circular Collaborative Economy embraces a wide array of initiatives, from the sharing of cars, objects and space, to energy and food cooperatives or community-supported agriculture. Those initiatives are small (involving a small number of permanent workers or volunteers), often non-for-profit and not generating high revenues and implemented locally.

However, it is believed that those initiatives have the potential to bring a variety of impacts on urban areas and their inhabitants. Through the optimisation and reuse of local assets, Urban Circular Collaborative Economy initiatives have the potential to save environmental resources, generate economic opportunities, and create urban communities and networks. Previous research has started to conceptualise some of these initiatives and to enquire about their potential impacts, as the next section introduces.[3]

1.2.2 Existing typologies

The Urban Circular Collaborative Economy is a new concept, but there is a substantial amount of research in its two related fields, i.e. the circular and the collaborative economy, and an important corpus on the classification of different initiatives into types.

Organisations such as Nesta[4] or Ouishare[5] have been pioneers in defining the collaborative economy in early work from 2014. Their definitions introduce the different concepts gravitating around the one of the collaborative economy ("sharing economy", "peer-to-peer – P2P –

[3] For a full definition of the concept of Urban Circular Collaborative Economy and a description of its different impacts, please see the literature review in Annex 4.

[4] Stokes, K., Clarence, E., Anderson, L., Rinne, A. (2014). Making Sense of the UK Collaborative Economy. Nesta. Available at: http://www.nesta.org.uk/sites/default/files/making_sense_of_the_uk_collaborative_economy_14.pdf

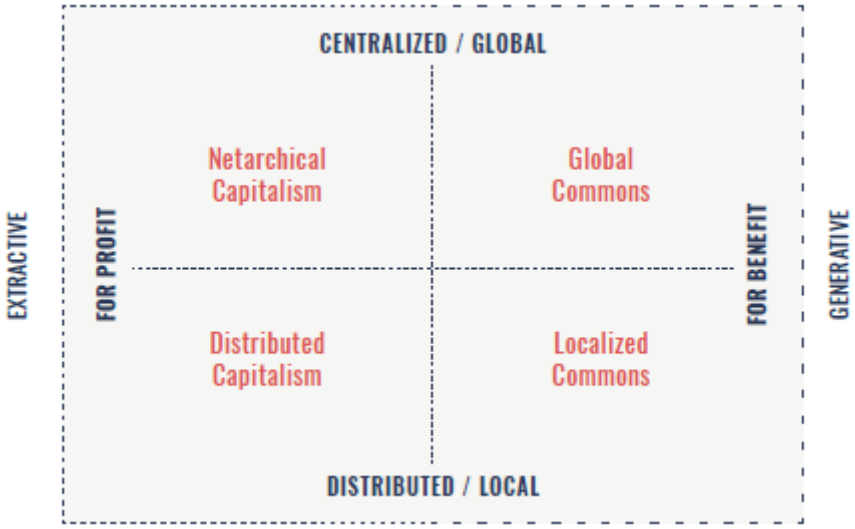
[5] Cartagena, J. (2014). A better name for the "sharing economy". Available at: https://medium.com/ouishare-connecting-the-collaborative-economy/is-there-a-better-name-for-the-sharing-economy-2d7489e1f56d

economy", "access economy") and make first differentiations between the activities of large collaboration ventures and smaller initiatives. While the literature review (Annex 4) presents the main findings of this research, we limit this section to the typologies that are most relevant for our study, i.e. the ones focusing on smaller and more local initiatives with a strong community component.

The research undertaken by the P2P Foundation around the concept of "Commons" is very close to the one of the Urban Circular Collaborative Economy. The terms Commons or "shared property" refer to property that is managed by users themselves. What is crucial about the term is not so much the shared property itself, but rather shared management. Commons are defined by three aspects: 1) a shared resource 2) the activity of "communing", and 3) rules and norms that must at least be partially autonomous from the public and private sector. The City of Ghent, has enquired about the topic with a study for a "Commons Transition Plan" in 2017.[6]

One interesting added value of P2P Foundation research is the division of Commons into quadrants on the basis of whether they are for-profit or for-benefit, and local and global, as the figure below shows.

Figure 2: The Four-quadrant model of the P2P Foundation[7]



Source: P2P Foundation.

- A first model involves, at the upper left, centrally-owned and controlled corporate platforms: Facebook, Google and Uber, Airbnb.
- The model of distributed capitalism, at the bottom left, is made up of decentralised systems that aim to create permissionless usage of assets or knowledge by avoiding centralised gatekeepers e.g. Bitcoin. The aim however is to extract profits, despite the usage of opensource technologies and codes.

[6] https://stad.gent/en/city-structure/ghent-commons-city/commons-transition-plan-ghent
[7] Bauwens M., Pazaitis A. (2019). *P2P Accounting for Planetary Survival. Towards a P2P infrastructure for a Socially-Just Circular Society.* Available at: http://commonstransition.org/wp-content/uploads/2019/09/AccountingForPlanetarySurvival_defx-2.pdf

- At the upper right, the model of global commons designates open design communities that aim to create global common goods. These projects are often managed by non-profit and democratically-run foundations, e.g. Wikipedia, Creative Commons.
- The last part of the quadrant is perceived as the dominant model of urban commons. It is the one of **localised commons**, which involves creating commons for local production without aiming for a profit. This model is also called Small, Local, Open, and Connected, or "SLOC"[8] which resembles to the Urban Circular Collaborative Economy.

The latest report from the P2P Foundation[9] brings interesting insights on the relationship between the collaborative and the circular economy, as it focuses on the contribution of the Commons to environmental issues. In particular, the report outlines on the potential impacts or "externalities" of the Commons. According to the P2P Foundation, initiatives generate externalities that are not taken into account by the current economic system, in the sense that they are not reflected in market prices: positive social externalities (contributions that bring value to a productive project and that are generally not recognized, for example, domestic and care work); negative social externalities (social issues such as poverty and high inequalities), positive environmental externalities (initiatives having minimising resource use or pollution); negative environmental externalities (when harm is done to the environment).

The research outlines that there is presently no systemic way to finance such positive environmental and social activities generated by the Commons, i.e., those that produce positive outcomes or help repair or undo negative ones, except for financing through taxation (i.e. public money) and philanthropy, which are not structurally integrated in the production process itself. Coming back to the Urban Circular Collaborative Economy, it is therefore expected that the market will allow the development of those initiatives and that there will be a need for them to find alternative ways to sustain (making the case for public authorities' intervention).

The P2P Foundation also outlines the need for open and shared supply chains to instantiate a circular economy[10], so that all the players in the ecosystem can plan and coordinate their production and distribution activities. This is also one aspect where the circular economy and the collaborative economy can link to each other, as trust is a key component of the literature around the collaborative economy.

The starting point of our research has been to better define the scope of the Urban Circular Collaborative Economy and understand which kinds of initiatives were belonging to it. This is

[8] See notably Ezio Manzini (2011), *The New Way Of The Future: Small, Local, Open And Connected.* Available at: https://pdfs.semanticscholar.org/2dce/b9b5ba8293a530ed0de01ea726afed648cc1.pdf

[9] M. Bauwens, A. Pazaitis (2019). *P2P Accounting for Planetary Survival. Towards a P2P infrastructure for a Socially-Just Circular Society.*

[10] The P2P Foundation mentions the "perma-circular" economy. The expression is a composite of 'permaculture' and 'circular economy.' In a nutshell, I use it to designate a genuinely circular economy — one that not only insists on a generalized cyclical metabolism of the economy, but also on a culture of permanence: a deep questioning of the principle of economic growth. It's not an anti-growth concept per se. It merely follows common sense: What we need is selective and provisional growth of those things that are valuable for ecological and human viability; what we don't need is the across-the-board and unlimited increase of all things deemed valuable by those who see technological and financial capital as the primary drivers of social progress." - By Christian Arnsperger, https://carnsperger.wordpress.com/2016/06/15/welcome-to-perma-circular-horizons/

presented in the next section (Chapter 1.2.3) and has formed the basis for a broader reflection around possible typologies of Urban Circular Collaborative Economy initiatives (Chapter 2.4).

1.2.3 Different domains of Urban Circular Collaborative Economy initiatives

As introduced above, the Urban Circular Collaborative Economy is taking many different forms: sectors (transport, accommodation, food, waste), size (more or less users, more or less organisers or employees), organisation form (e.g. businesses, associations, cooperatives), etc. Initiatives also differ in how they generate profit and or benefit, and to what extent they need public support.

This study better defines what is the Urban Circular Collaborative Economy and the different forms it can take in the cities and regions. It enquires about six domains of initiatives, which have been designed on the basis of the their economic, social and environmental potential[11] they might cause. In particular, all the initiatives must contribute somehow to the circular economy because they have an impact on resource use, waste reduction and closing material loop.

Table 2 summarises our classification of initiatives into the six domains:

Table 2: List of domains of Urban Circular Collaborative Economy initiatives

Domain	Category	Common categorising impact or impact chain
Sharing outdoor urban space	Community gardens	Changing the use of space and intensity of use of that space
	Parking space reuse	
Sharing indoor urban space	Short-term rental	Changing the use of indoor space and the intensity of use of that space
	Coworking space/Fablab	
	Leisure space sharing	
Sharing goods and tools	Renting goods	Prolonging usage or intensifying usage and with that reducing the need for new production
	Reselling goods	
	Swapping goods	
	Repair cafés	
Sharing food	Food & meal sharing	Reducing food waste or putting it to better use and with that reducing the need for land for agricultural production
	Food cooperative/food redistribution	
Sharing organisations and decisions as cooperatives	Energy	Pooling investment to move value chains into the community and to reduce emissions
	Waste collection/treatment	
Sharing transport	Bike sharing	Reducing the need for new cars by reducing car ownership Reducing emissions by decreasing the number of car rides
	Car sharing	
	Ride sharing	
	Rides-on-demand	

The domain **"Sharing outdoor urban space"** includes categories of Urban Circular and Collaborative Economy initiatives that utilise open air (outdoor) space as their main underlying asset. This domain is composed of Urban Circular Collaborative Economy categories such as community gardens (e.g. KIPOS3 garden in Greece, Horta à Porta in Porto) or parking space reuse (Commuty[12] in Flanders).

[11] For the list of criteria at the basis of the domains, please refer to Annex 3.
[12] Commuty is a web and mobile application designed for a better parking and mobility management within companies.

The **"Sharing indoor urban space"** domain includes categories of Urban Circular and Collaborative Economy initiatives that utilise enclosed (indoor, within a building) space as their main underlying asset. This domain is composed of initiatives such as short-term rental (local Airbnb-like initiatives e.g. Fairbnb in the Netherlands), coworking space (e.g. OPO'Lab in Porto) and leisure space sharing (e.g. Pop House/Pop Art, Chi-na Association, Officina Giovani in Prato).

The **"Sharing goods and tools"** domain includes categories of Urban Circular and Collaborative Economy initiatives that utilise goods as their main underlying asset. The main transaction relationship applied a is peer-to-peer transaction (P2P) relationship (i.e. individuals share goods with other individuals, e.g. their neighbours). This domain is composed of renting goods (e.g. Peerby in Flanders), reselling goods (e.g. Repositorio de materiais in Porto), swapping goods (e.g. Minibieb in The Hague) and repair cafes (e.g. Repaircafe The Hague)

"Sharing food" includes categories of Urban Circular and Collaborative Economy initiatives that utilise food as their main underlying asset, typically via sharing transaction mode. The main transaction relationship applied is P2P or business-to-consumer (B2C) transaction relationship. This domain comprises the categories of food & meal sharing (e.g. Conscious Kitchen Den Haag in The Hague) and Food cooperative/food redistribution (e.g. Robin Food Maribor in Slovenia, LIFE-Food 4 Feed in Greece).

"Sharing organisations and decisions as cooperatives" includes categories of Urban Circular and Collaborative Economy initiatives that utilise energy and/or waste as their main underlying asset. Sharing transaction mode is usually applied, either via a P2P or B2C relationship. The categories included in this domain are waste collection/treatment (e.g. Cinderella, UrbanSoil4Food, De CompostBakkers) and energy initiatives (e.g. Sifnos Energy community, De Groene Regents and Vogelwijk Energie(k) in The Hague).

The **"Sharing transport"** domain includes categories of Urban Circular and Collaborative Economy initiatives that utilise transport vehicle (car, bike) as their main underlying asset. This domain comprises Urban Circular and Collaborative Economy categories of ride sharing (e.g. Via Verde Boleias in Porto), bike sharing (e.g. Villo! In Brussels), car sharing (e.g. Cambio, Dégage in Flanders) and rides-on-demand (e.g. local Uber-like initiatives).

Among those six domains, a selection of four to five initiatives per territory has been made in order to analyse them more in depth. They are presented in **Error! Reference source not found.**.

Table 3: Selected initiatives

Territory	Initiatives	Domain	Category
Flanders	Cambio	Sharing transport	Transport
	Dégage	Sharing transport	Transport
	Peerby	Sharing goods and tools	Renting goods
Greece	KIPOS3	Sharing outdoor urban space	Community garden

	Sifnos Energy Community	Sharing organisations and decisions	Energy
	Life-Food 4 Feed	Sharing food	Food cooperative/redistribution
	COMPILE Project	Sharing organisations and decisions	Energy
Maribor	Urban Soil 4 Food	Sharing outdoor space / Sharing organisations and decisions	Community garden/ waste collection/treatment
	Cinderella	Sharing organisations and decisions as cooperatives	Waste collection / treatment
	Robin Food Maribor	Food sharing	Food cooperative/redistribution
Porto	Via Verde Boleias	Sharing transport	Ride sharing
	Repositorio de materiais	Sharing goods and tools	Reselling goods
	Horta a Porta	Sharing outdoor space	Community garden
	OPO'Lab	Sharing indoor space	Coworking space
Prato	Pop House/Pop Art	Sharing outdoor space	Leisure space sharing
	Chi-na Association	Sharing outdoor space	Leisure space sharing and coworking space
	Artforms	Sharing indoor space	Leisure space sharing
	Officina Giovani	Sharing indoor space	Leisure space sharing
	SC17	Sharing indoor space	Leisure space sharing
The Hague	Made in Moerwijk	Sharing goods and tools	Reselling goods
	KledingBank DenHaag	Sharing goods and tools	Wapping goods
	Lekkernassûh	Sharing food	Food cooperative/food redistribution
	De Groene Regents	Sharing organisations and decisions	Energy

The screening of the initiatives selected has allowed to find concrete examples of the possible impacts the Urban Circular Collaborative Economy can have on cities and regions, as well as the factors that were contributing to or limiting their growth.

1.3 Conclusion: An innovative concept with strong impact potential

This study has started with better defining the scope of the Urban Circular Collaborative Economy and understand which kinds of initiatives were belonging it.

As shown by the literature, the Urban Circular Collaborative Economy has important potential impacts (and positive social and environmental externalities) for cities and regions but those are limited by the fact that they are not taken into account in the current economic and political ecosystem. Moreover, trust is important as much for the circular economy than the collaborative economy, which further links the two concepts with each other.

While existing research outlines typologies based on different elements, very little has been done on the types of initiatives that are of interest for this study (i.e. small, local and for-benefit).

To start with, our study has made a first categorisation of Urban Circular Collaborative Economy initiatives and has selected a small number of them in each of the territories screened.

This has allowed to map the presence of those initiatives and formed the basis for a broader reflection around possible typologies for the Urban Circular Collaborative Economy. This is presented in the next Chapter.

2 Mapping Urban Circular Collaborative Economy in cities and regions

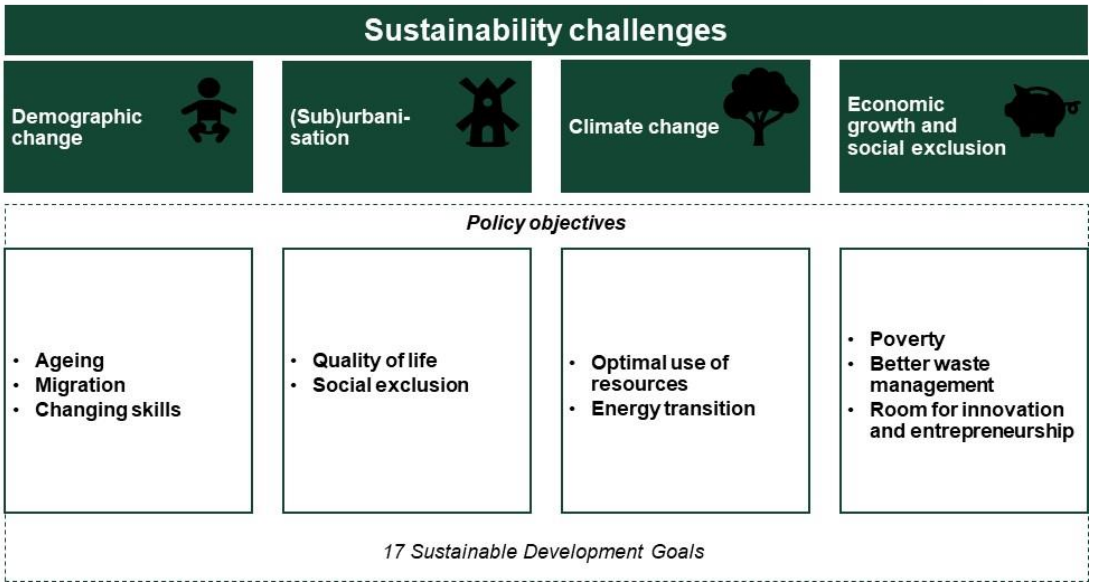
This Chapter gives an overview of the state of the Urban Circular Collaborative Economy in European cities and regions, in particular in the six territories within the scope of this research. To give a better overview of territorial circumstances and better understand the main features of the initiatives, six case study reports have been developed. This approach allowed to understand why some initiatives were more likely to develop in some specific areas rather than other ones. The surrounding environment (economic, cultural, political, urban) has an important impact on the potential of the Urban Circular Collaborative Economy initiatives.

This Chapter provides first an overview of the six territories, their challenges and their policy objectives. Then, a comparable overview of the presence and usage of Urban Circular Collaborative Economy initiatives within these six territories is discussed. This leads to an analysis of the existing success factors and obstacles that studied initiatives encountered. Finally, some conclusions are drawn on the relationship between the existing territorial characteristics together with their regulatory and policy frameworks and their potential for the development of the Urban Circular Collaborative Economy. However, it should be noted that the comparability of territorial characteristics is to some extent limited as it covers territories of different nature: cities (The Hague, Porto, Prato, Maribor), regions (Flanders) and countries (Greece). This study tries to outline the main common factors upon which overall conclusions and recommendations can be drawn.

2.1 Summary of the cities and regions' characteristics, sustainability challenges and policy objectives

Cities and regions face **numerous challenges**: demographic change, urban pressures/suburbanisation, mobility, climate change, economic growth, social exclusion, poverty, unemployment. Those challenges are all linked with **sustainability** in one form or another. Sustainability has therefore become an important focus of local and regional policymaking and is a linking point between various policy areas.

Figure 3: Cities and regions sustainability challenges, policy objectives and development goals



Source: VVA.

The role of regions and cities in fostering sustainability has been recognised as crucial in achieving 17 **Sustainable Development Goals (SDGs)** adopted in September 2015 at the United Nations Sustainable Development Summit.[13] In fact, achieving the SDGs requires a deep transformation in transportation, energy, urban planning and a new and more adequate approaches to address poverty, and inequalities.[14] European cities and regions seem to have a necessary policy and investment leverage to enhance the necessary transformation towards sustainable development.[15] According to the *2019 SDG Index and Dashboard Report on European Cities,* regions and cities in the EU "enforce environmental legislation and manage about 43% of public investment".

Each of six selected territories under this study faces some of those above-mentioned sustainability challenges. However, depending on local circumstances, the focus of policies to address those is different. Policies are also tailored to current territorial priorities in terms of political objectives (e.g. Maribor), apparent territorial issues (e.g. The Hague, Greece, Prato), or current transitional ambitions (e.g. Porto).

First and foremost, **environmental and climate change issues** are high in all territories' political agendas. Although under the same category, each territory focuses on their different aspects. While the municipality of Maribor prioritises the optimal use of resources, the region of Flanders is interested in sustainable mobility, and The Hague or Greece look for opportunities in the area of the energy transition.

Also, **suburbanisation and urbanisation** (deindustrialisation, urban pressure) have an important environment dimension (competition for space) and present the new challenges to

[13] The 2019 SDG Index and Dashboards Report for European cities, available at : http://unsdsn.org/wp-content/uploads/2019/05/Full-report_final-1.pdf
[14] Ibid.
[15] Ibid.

the municipalities (Prato, The Hague). Deindustrialisation of inner-city parts leads to the desertification of some districts, which were used to be strongly populated or industrialised before and causes profound societal changes within the city's borders. This results in an insufficient and low-quality infrastructural investment and urban degradation, lack of public spaces and services, architectural barriers which in turn contributes to the spreading of micro-intercommunity conflicts and strong segregation (e.g. Macrolotto Zero in Prato, Escamp in The Hague). There is room for a transition from an urban and social point of view in those poor districts. Their situation could be improved via some form of "parallel economy", embodied by the Urban Circular and Collaborative Economy initiatives.

Some of the selected territories (e.g. Greece, The Hague, Maribor, Prato) face important **poverty and unemployment issues**. In addition, cities are facing more and more societal changes in the most deprived areas of cities (ageing, migration, skills gaps). Therefore, the circular and collaborative economy is perceived as a mean to foster social cohesion and to stimulate the local or national economy (by the development of parallel economy activities for the vulnerable people). Urban Circular Collaborative Economy initiatives are, thus, seen as an important tool to foster territorial economic and business development. Furthermore, improvement of social cohesion is an important issue for territories with a high immigration rate or important number of populations coming from various cultural backgrounds. The latter factor can lead to segregation in cities as observed in The Hague or Prato.

Giving the above, following research angles were selected for the territories in the scope of our research:

- **Flanders (suburbanisation and climate change),** given the existing regional and national climate objectives and mobility issues in Flanders, regional stakeholders aim to better understand how to **foster social connections and improve the accessibility of different areas in a sustainable way** ("making links between the Commons").
- **Greece (economic growth and social exclusion)**, given a long recession period that the country suffered from the 2008 economic crisis, which resulted in a high unemployment rate of young people; multiplied by specific geographical characteristics (insularity and mountainous areas), the national stakeholders chose to focus on new economic models as a contribution to the **poverty reduction and transition towards green energy.**
- **Maribor (climate change, economic growth and social inclusion),** given the city's high unemployment rate, change in industry markets (low economic indicators) and a perceived lack of innovative ideas, the municipality stakeholders decided **to foster employment by increasing the city's circularity through the promotion of "cooperative economy networks**". According to the municipality's stakeholders, cooperative economy networks should help to strengthen the collaboration between different types of stakeholders (municipality, civil society, enterprises representing different sectors of the economy, population of all sort of ages etc.) to set the path for a new business development in the city via Urban Circular Collaborative Economy.
- For **Porto (urbanisation, economic growth and social exclusion)**, given the recent progression towards the circular economy (Porto's roadmap towards 2030 and national

Action Plan for the Circular Economy in Portugal 2017-2020), increased attractiveness of tourists and the strong presence of the social economy in the city, the municipality's stakeholders decided to focus on future more consistent **promotion of circular and collaborative lifestyles in the city.**

- **Prato (urbanisation, economic growth and social exclusion)** given the city's industrial past and existing concentration of Chinese immigrant workers in the city, the municipality's stakeholders perceive the new economic model as a springboard towards **the regeneration of urban spaces left behind with the deindustrialisation, and inclusion of population from different cultural backgrounds.**
- For **The Hague (climate change, economic growth and social exclusion)**, given the city's climate ambitions together with difficulties in fighting social poverty and exclusion along a high immigration rate, the municipality's stakeholders consider the Urban Circular and Collaborative Economy as a mean towards the **reduction of poverty and promotion of social entrepreneurship**.

Five out of six territories have developed a concrete strategy towards the circular or collaborative economy at the local level (or, if not, they follow an existing strategy at national level). Only The Hague has not yet developed any overarching policy instruments towards the Urban Circular Collaborative Economy. According to entrepreneurs, the lack of such a policy framework creates a situation of legislative uncertainty regarding the statutes of these initiatives and their possibilities. Therefore, it reduces considerably the potential of these initiatives in the territory. Nevertheless, The Hague has developed other subsidiary instruments which should help existing initiatives to scale-up and develop their entrepreneurial approach.[16]

On the one hand, it can be observed that existing strategies and roadmaps at national level have incentivised cities and regions to move towards the circular economy. On the other hand, the study revealed that cities are often well-placed to implement these strategies rather than national stakeholders. For instance, the case study on Flanders has demonstrated that cities that have developed their own strategies towards the circular economy have a better understanding of these initiatives' presence and features in their territories (e.g. "Commons Transition Plan" [17] in Ghent; Stadslab 2050" [18] in Antwerp, or "Leuven 2030 plan"[19] in Leuven).

Action at the European level is also an important driving force for local action. In many cases, an overarching European legislation has spurred the recent approach to circularity in many countries, regions and cities (e.g. in 2011 "A resource-efficient Europe – Flagship initiative under the Europe 2020 Strategy"[20]; in 2015 the Circular Economy Action Plan[21], in January 2018 Communication on a Monitoring Framework for the Circular Economy that includes the EU strategy for plastics[22]).

[16] The Municipality has also provided indirect forms of support, for instance by providing free spaces to initiatives so they can launch (e.g. for the food sharing cooperative Lekkernassûh).
[17] P2P Foundation (2017). A Commons Transition Plan for the City of Ghent: The context and structure of the report, Available at: https://stad.gent/ghent-international/city-policy-and-structure/ghent-commons-city/commons-transition-plan-ghent
[18] Stad Antwerpen, Stadslab 2050, Available at: https://stadslab2050.be
[19] Stad Leuven, Leuven 2030, Availble at : https://www.leuven.be/leuven-2030
[20] https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52011DC0021
[21] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52015DC0614
[22] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1516265440535&uri=COM:2018:29:FIN

After having presented the regional characteristics and the policy factors surrounding the Urban Circular Collaborative Economy, the following section analyses the presence of the initiatives in the six territories under the scope of this study.

2.2 Presence and usage of Urban Circular Collaborative Economy initiatives in the six territories

The study has shown that among all territories the presence and usage of Urban Circular Collaborative Economy initiatives is in a constant growth. Given the variety of territories when it comes to their geography, demography, and socioeconomic characteristics, comparison of the presence of initiatives in terms of numbers would be irrelevant. Moreover, as the landscape of initiatives is permanently evolving, some initiatives appear and disappear constantly. Instead, this section will focus on providing a snapshot of the types of initiatives present in the territories and the characteristics of their users.

In all territories, a considerably increase in the number of initiatives has been observed. This has been correlated as a response to the economic crisis, especially in Greece. However, it seems that the potential Urban Circular Collaborative Economy is not yet fully used in all territories and depends on territorial circumstances. The highest presence of initiatives can be seen in “close communities" (to be understood as densely populated areas of biggest cities) as these areas present a more favourable environment for sharing practices. This tendency is the most apparent in Flanders, where the province of Limburg (the smallest geographical area and the least populated one) records for instance the smallest number of initiatives present in the territory (3%). Furthermore, the study has shown that the initiatives tend to gather around specific neighbourhoods, where networks of users are well developed.

For the purpose of the research, this study conducted a stocktaking of different Urban Circular Collaborative initiatives present in the selected cities and regions. The table below shows the total number of initiatives identified per geographical area analysed. However, it should be noted that this sample is not representatives and refers to the methodology applied for identifying initiatives withing the scope of this study.

Table 4: Number of initiatives per city/region

City/Region	Number of initiatives
Flanders	329
Greece	77
Maribor	42
Porto	50
Prato	25
The Hague	110

The initiatives **present** in each of the territories cover the six domains of Urban Circular Collaborative Economy under this study. The “Sharing goods and tools” domain is common to all territories, but especially present in Flanders and The Hague (represents the highest share

of initiatives). Also commonly found in all territories is “the domain of Sharing indoor space”, which is the highest ranked in Porto (with an especially high number of coworking space). Initiatives in the “Sharing organisations and decisions as cooperatives” domain have been selected in Flanders, Greece, and Maribor as they are particularly present in these territories, with the highest share in Greece. Initiatives in the “Sharing transport” domain have been selected in Flanders, Greece and Portugal. Maribor selected several initiatives in the “Sharing food” domain, while the “Sharing outdoor space” and “Sharing indoor space” domains were selected primarily by Prato.

Large majority of initiatives are originated locally (e.g. Maribor 65%, Greece 90.3%, Prato 100%). But it should be noted that the “local” territorial scope of Greece refers to the national level, while describing the situation of the individual municipalities, it refers to the city level. Majority of the initiative is funded by private means, while few of them are supported to some extent by public funding. A small amount of initiatives present in the territories have a foreign origin, around a tenth of them. For instance, the majority of the short-term rental initiatives identified are foreign online platforms (Airbnb, Flipkey, Intervac, Homeaway, Homeexchange, Housetrip).

Most of the identified initiatives are very small, i.e. carried out by one to two persons. Some of them are run on a voluntary basis and/or as a hobby (and do not generate income), while some others can constitute a constant source of income. In the first case, this correlates with initiatives that can run for a long time, whereas in the second scenario their life expectancy is much shorter. For the latter reason, small initiatives face the constant fear for their existence.[23] It is the case for the majority of the initiatives as, according to an interview conducted under this study, between 80 to 90 % of the initiatives do not run on the full-time basis.[24]

A study conducted by the Municipality of The Hague has shown that the initiatives’ average life expectancy is between two and three years.[25] Furthermore, only approximatively 15% of them pursue their activity on a more permanent basis.[26] On the contrary, cooperative-like initiatives seem to be more sustainable given their different growth model.[27]

In Greece and in The Hague, the majority of initiatives is privately owned. The study has shown that the support of national and local institutions in the development of Urban Circular Collaborative Economy initiatives is limited. The fact that many initiatives are being supported on an individual and voluntary basis and lack general institutional support might explain why many of the Urban Circular Collaborative Economy initiatives do not generate big economic impacts (earnings, job posts, etc.)[28], which will be further detailed in Chapter 3 of this report.

[23] Interview with Municipality of The Hague, 03/07/2019.
[24] Interview with Platform 31, 03/07/2019.
[25] Interview with Municipality of The Hague, 03/07/2019.
[26] Ibid.
[27] Interview with Municipality of The Hague, 03/07/2019. Interview with Platform 31, 03/07/2019.
[28] Interview with Municipality of The Hague, 03/07/2019.

The study has also shown that some important and strategic initiatives might be carried or co-owned by the municipalities or local authorities themselves (e.g. Prato, Maribor, The Hague). For instance, the circular economy governance framework of Prato is characterised by an increasing interest of the private and civil sectors to collaborate with public institutions.

Finally, in some territories, public institutions are dominant players/main owners of the Urban Circular Collaborative (e.g. Flanders, Maribor, Prato). It has been noted that the municipalities which developed local strategies/roadmaps seems to be more involved in the successful implementation of circular and collaborative economy initiatives. They also undertake actions when it comes to raising awareness among the population on that matter.

Regarding the **usage**, the study has shown that there is a wide range of Urban Circular Collaborative Economy initiatives when it comes to their size, number of users, etc. The analysis of the usage of these initiatives did not provide clear data on number of users nor on their profile in the six territories. As a matter of fact, many initiatives are in the development phase or early implementation phase and, thus, do not have the sufficient resources to collect data on usage. However, some of them undertake action to develop their own impact monitoring systems (e.g. the food sharing initiative Lekkernassûh in The Hague).

The general trend shows that the beneficiaries of these initiatives can be people of all age, gender and cultural backgrounds. However, in general the analysis has found that users are predominantly young people, between 20 and 50 years old, coming from highly educated environment. This can be explained by the fact that many initiatives are i) operating in big cities or are ii) online platforms and their use is limited to people with digital skills, which are usually mostly young people (e.g. Flanders, Greece).

The high share of young people among the initiatives' users can be also explained by the fact that many of the initiatives' founders have the same characteristics that above-mentioned users. Typically, most people use the existing initiatives because they share the social motivation and values promoted by these initiatives.

It should be noted that despite the profile of users described above, many initiatives addressing economic needs of more vulnerable groups also gather people from less privileged background (less educated population, elderly people, socially excluded). In that sense, initiatives addressing specific local problems can be established by people who does not directly suffer from the problem itself.

The distance between providers and users of the initiatives constitutes a main explanation of the Urban Circular and Collaborative Economy usage. The study has noted that often the users tend to be the territories' inhabitants or come from nearby areas (e.g. Flanders, Maribor). Some initiatives operate only in a small distance to limit possible users' travel costs and to foster social contact in the neighbourhoods (e.g. the tool sharing initiative Peerby in Flanders). A study

conducted in 2017 by IDEA Consult has shown that in Flanders some platforms limited the provision of their services in a maximum distance of 10 kilometres.[29]

On top of the above trends, some more characteristics can be depicted per domain. For instance, the "Food sharing" domain addresses economic needs of more vulnerable groups and therefore has users with lower incomes (e.g. Robin Food in Maribor, Foodbank in The Hague). The "Sharing outdoor urban space" domain (e.g. community gardens) tends to be used more by older people and families (e.g. Maribor, Greece, Porto). The majority of initiatives in "Sharing transport" and "Sharing indoor urban space" are used by younger population (young employees, or students) – which can be correlated with the use of online platforms or apps. For instance, in Porto, coworking spaces are used by young and international individuals, often self-employed. On the contrary, when it comes to "Sharing organisations and decisions as cooperatives", especially in the energy field (e.g. De Groene Regents in The Hague), their members are often likely to be wealthy people of between 40 and 60 years old.

Ultimately, it has been noted that the Urban Circular Collaborative Economy initiatives identified have two dimensions. If the initiatives can address specific territorial problems, their initiators do not necessarily suffer directly from the issues. Secondly, the initiatives may be also driven by consumer preferences – here, the demand on user-side is very important in the creation and then subsistence of initiatives.[30]

All in all, the analysis of the usage and presence of the initiatives mapped has revealed that Urban Circular Collaborative Economy initiatives have still a vulnerable structure. Many of them are supported on an individual/voluntary basis and lack general institutional and legislative support.

The study demonstrates that territories with a well-established regulatory framework, available resources, an innovative environment and specific social/cultural aspects (e.g. a strong presence of cultural associations or social economy networks) witness a better uptake of Urban Circular Economy initiatives in their territories. Universities and research institutes act as important intermediaries between local policymakers, initiatives and entrepreneurs. Often, these institutions explore new pathways of cooperation and analyse the most important impacts. By doing so, they bring a more innovative approach on how to embrace the development of the new economic models. This brings us to a further analysis of the success factors and obstacles of the initiatives in the next section of this report.

2.3 Analysis of success factors and obstacles

Given the above findings retrieved from the mapping exercise of Urban Circular Collaborative Economy initiatives, it is important to understand the main success factors behind and encountered obstacles to development of these initiatives in the studied territories. To this aim,

[29] IDEA Consult, Vanuit de kinderschoenen naar de puberteit, De Vlaamse deeleconomie in kaart gebracht, September 2017, p.47
[30] Interview with Platform 31, 03/07/2019.

this section will first analyse general European trends allowing better uptake of these in cities and regions. Secondly, it will examine in detail the example of initiatives from the field work in six territories of our research.

When it comes to the uptake of Urban Circular Collaborative Economy, the research found that the territorial circumstances in Chapter 2.1 are multiplied by factors such as the level of innovation, entrepreneurial approach of the society and access to finance of territorial social entrepreneurs. The mentioned factors condition the speed at which the initiatives can spread among the citizens of a given community. In order to provide an overview of the European regions' potentials in these regards, a number of types of regions was produced combining indicators related to the different factors mentioned. It has to be kept in mind though, that Urban Circular Collaborative Economy initiatives oftentimes are related to the local level, while related indicators on a pan-European scale are available on the NUTS3 level at best, oftentimes even NUTS2 or NUTS0. With a class assigned to any given NUTS3 region being based on those indicators, sub-regional and local variations cannot be accounted for. Types of regions have thus to be understood as showing comparative indicators depicting potentials and territorial patterns but might not apply to any given sub-region or city within a specific region. The three types relate especially to:

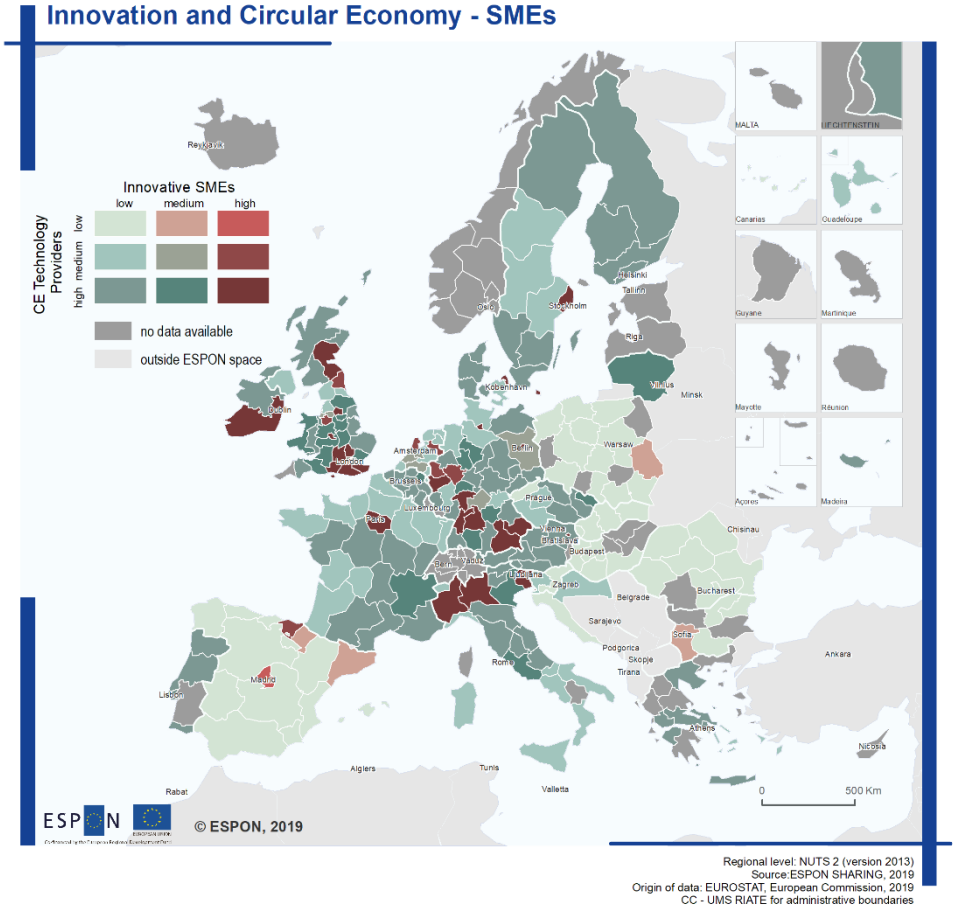
1) regions being well equipped for the uptake and development of initiatives from a technological perspective,
2) regions being well equipped for the uptake and development of initiatives from the entrepreneurial spirit perspective, and
3) regions facing constraints and obstacles in the update and development of initiatives especially in relation to access to finance.

First of all, the study considers the linkage between the platforms and Urban Circular Collaborative Economy. To better demonstrate this phenomenon, this study mapped and combined the number of technological providers of circular economy as identified by the ESPON CIRCTER[31] project and innovative SMEs across Europe as provided by the Regional Innovation Scoreboard.[32] The indicators selected combine both a thematic focus on the circular economy as well as a broader aspect of innovativeness. A high value in both indicators (dark red on the map below) means that a given territory is potentially well equipped for the uptake of Urban Circular and Collaborative Economy Initiatives, having a strong regional abundance of two key aspects relevant from a technological side for creating UCCE initiatives On the contrary, regions with low values in both indicators (light green in the map below) might potentially struggle with this uptake due to lacking regional backing of initiatives. Therefore, it can be observed that capital regions flash up positively, while the rural regions show a less positive picture (Eastern and Southern Europe) for the development of Urban Circular

[31]ESPON Circular Economy and Territorial Consequences, available at https://www.espon.eu/circular-economy
[32] European Commission, Regional Innovation Scoreboard, 2019, available at: https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en

Collaborative Economy initiatives. Nevertheless, even prosperous European countries such as Finland, France or Germany have many regions scoring surprisingly low, while numerous regions in Northern Italy seems to be very successful in that matter (see **Error! Reference s ource not found.** below). All six territories studied under this research rank midway among these indicators, especially Flanders, Greece and Porto. Despite the average general trend Porto and Maribor have shown a higher number of circular economy providers, while the Hague demonstrated less innovative environment in comparison to the other five territories. In important caveat to these results is though, that the physical location of technology providers respectively firms in general in some cases can be misleading, as especially firms providing web-based services do not necessarily conduct business mainly in the region or country they are based in. In some cases this is especially relevant (e.g. Ireland) as some of those firms choose to select their location based on tax advantages while not being actually based there.

Figure 4: Innovation and circular economy[33]



Secondly, entrepreneurial attitude was mentioned by the stakeholders interviewed as a key element leveraging success and scaling-up of potential of the Urban Circular Collaborative Economy initiatives in regions and cities (e.g. the Hague). Therefore, a typology was created linking an indicator on entrepreneurial attitudes with the prevalence of the circular economy,

[33] Technical details of the calculation and classification are documented in the ESPON scientific database.

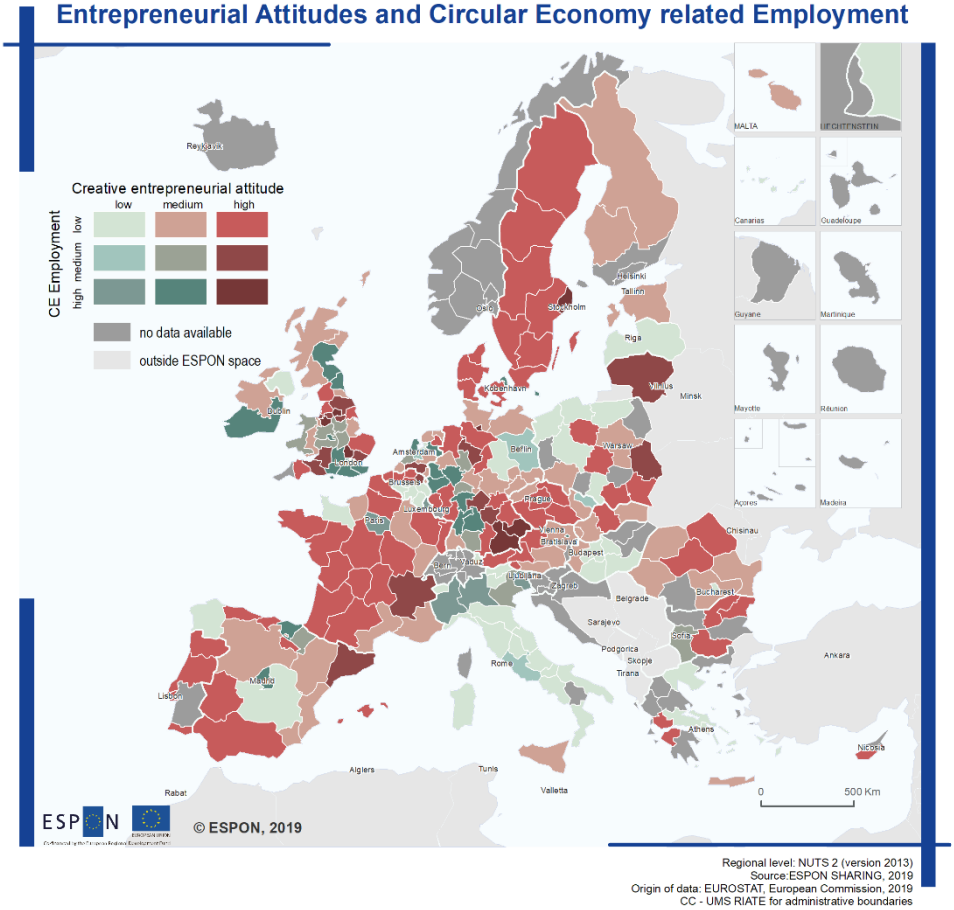
the idea being to highlight regions were the entrepreneurial mindset favors the success of the Urban Circular Collaborative Economy, enabling an assessment if the actual uptake is already in line with that or still lacking. In order to depict the first aspect, the Regional Innovation Scoreboard, is well suited as it is a composite index combining various indicators depicting of creativity, readiness for trying new things, positive mindset for innovation etc.)[34] For the second aspect, circular economy-related employment as calculated by the ESPON CIRCTER[35] project was used, as it is indicating the comparative importance of the circular economy from an entrepreneurial perspective in the territories.[36] The cross-analysis of indicators revealed an abundance of regions all across Europe with a very positive entrepreneurial attitude. However, at the same time a lot of these territories scored very low when it comes to circular economy-related employment. Therefore, the regions which scored highly in both indicators are the ones where implementation and start-up support were more effective than in others.

While the Hague and Maribor rank midway among these indicators, Prato and Greece (except two regions in the western part of the country) ranked relatively law in these two indicators.

[34] European Commission, Regional Innovation Scoreboard, 2019, available at: https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en
[35] ESPON Circular Economy and Territorial Consequences, available at https://www.espon.eu/circular-economy
[36] Goes beyond technology providers.

Porto and the region of Flanders, both seems to have very good entrepreneurial approaches, however, at the same time, they have very low threshold of circular-related employment.

Figure 5: Entrepreneurial attitudes and circular economy related employment[37]



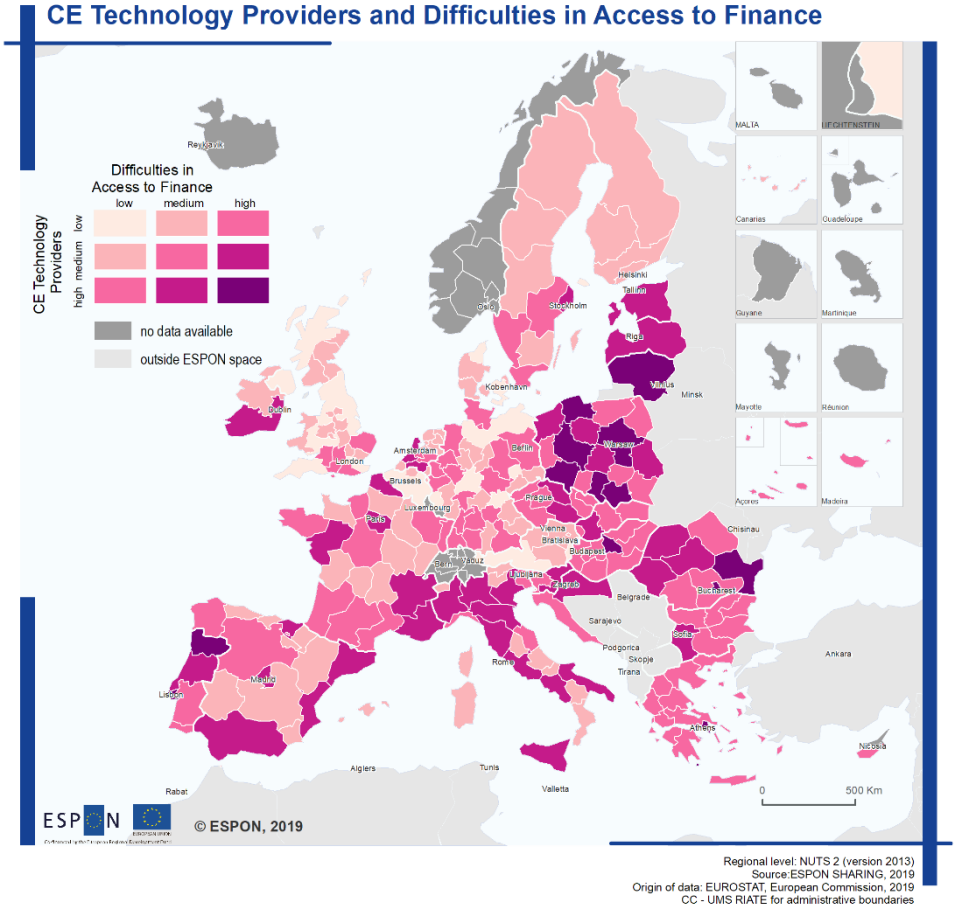
Thirdly, the study aims to identify the cities and regions facing serious obstacles to the development of the Urban Circular Collaborative Economy in their territories. The typology is based on the combination of an indicator on the preconditions for implementing circular economy initiatives with an indicator on the obstacles in obtaining financing for initiatives. For the first aspect, the same indicator as above has been used depicting those preconditions by the number of companies acting as technology providers for circular economy as identified by the ESPON CIRCTER[38] project. The second aspect can be covered by the number of companies reporting difficulties in accessing finance for establishment and/or development of circular economy initiatives based on a Eurobarometer survey.[39] The hypothesis behind this combination being that regions where the difficulties in access to finance are high, while the number of technology providers face the biggest obstacles in improving there Urban Circular Collaborative Economy initiatives, while e.g. regions where the number of providers is high and

[37] Technical details of the calculation and classification are documented in the ESPON scientific database.
[38] ESPON Circular Economy and Territorial Consequences, available at https://www.espon.eu/circular-economy
[39] Flash Eurobarometer 441: European SMEs and the Circular Economy, available at https://data.europa.eu/euodp/de/data/dataset/S2110_441_ENG

the difficulties in access to finance are low are rather well equipped for the development of such initiatives.

Based on provided analyses regions standing out and showing larger than other average obstacles are mostly concentrated in Poland, Romania, Lithuania and Portugal, coastal regions in Italy and Spain, as well as the Baltic countries. Among territories under this research, this cross-analysis identified the major obstacles in the cities of Prato, the Hague and Porto. While Maribor and Greece rank midway among these indicators, the region of Flanders shows the best environment among all of six territories. However what has to be kept in mind here is that the obstacles examined in the case studies are understood far broader, do not place a particular emphasis on access to finance and are oftentimes related to individual cities or sub-regions, while the overall region might show a different characteristic.

Figure 6: Technology providers and Difficulties in Access to Finance[40]



The research revealed that cities and regions struggling the most with the development of the Urban Circular Collaborative Economy are the one that initially offered limited support to innovation than others (e.g. The Hague and Maribor). Over the years, these territories have developed smaller support towards a starts-ups and entrepreneurs compared to other countries or territories in Europe. However, some territories (The Hague) progressively have developed

[40] Technical details of the calculation and classification are documented in the ESPON scientific database.

a more robust support towards entrepreneurship. Furthermore, the uptake of the Urban Circular Collaborative Economy initiatives has a lower threshold in societies lacking entrepreneurial approach and regions where businesses have a limited access to finance.

Given the above, for almost all the initiatives the key factor of success is **the presence a strong entrepreneurial spirit** among the funders of the given initiative. This has been emphasised by various initiatives, municipalities' representatives, researcher stakeholders across all the territories. The entrepreneurial approach allows to the most prominent Urban Circular Collaborative Economy initiatives a future scaling-up. Initiatives that operates dynamically and have the potential of scaling-up attract investment opportunities, among others from the public sector. Some of the municipalities (e.g. The Hague) clearly started to target especially initiatives that had a clear entrepreneurial approach. For instance, the municipality of The Hague considers that a constructive investment could take a form of an experimental approach and should focus on ICE projects (**I**conic in itself; **C**arrier/enablers - enabling other projects to scale up; and **E**ntrepreneurial). An example of such initiative is Made in Moerwijk.

In general, it seems that the **involvement of public authorities is crucial for the development of the initiatives**. The involvement of public authorities can be done in different ways. It can be financial, material, promotional, regulatory or facilitatory (building bridges between various actors). The above-mentioned entrepreneurs need stimulation as a push factor for the development of their ideas. Unfortunately, inaction in that matter from the governmental/municipal side do not provide required simulative policies encouraging further development of such initiatives. As the case studies showed, most of the successful initiatives have benefited in one way or another from support from municipalities (e.g. Dégage in Ghent, De Groenes Regents, the KledingBank DenHaag). In some cases, public authorities have also partnered with initiatives in allowing them to experiment some solutions. For instance, in order to find new ways to finance KledingBank the municipality has run the following experiment: the initiative was split into two separate entities and to make an entrepreneur responsible for 5-10% of the clothing and sell them to second-hand shops to order to finance the project through another way.

However, it has been pointed out by the entrepreneurs interviewed that, although existing, the support provided by public authorities was not sufficient in most of the cases. Therefore, the current public involvement needs to be further strengthened to leverage the current initiatives landscapes and/or to reduce their current vulnerable points. A stronger public support could be perceived as one of key actions that could be provided to effectively accompany the initiatives in their undertakings.

In this regard, the emergence of **public-private partnerships** seems to be a significant way for small initiatives to become relevant actors within the framework of urban regeneration and social cohesion in the territories. There seem to be two main reasons for this phenomenon. Firstly, small initiatives lack the communicative power that is instead held by public bodies. Secondly, public institutions are able to transfer useful knowledge to private initiatives (e.g. in

Prato the knowledge possessed by both Municipal departments and cultural associations is used to move the focus from single building to revitalisation of existing spaces).

The case studies agreed that one of the biggest challenges for the entrepreneurs is the lack of funding and the "fear of risk" preventing partners and/or financial institution form investing. Therefore, the establishment of trust and evidence-based relationship among the potential partners such as municipalities and funding entities is very important. This has notably been emphasised in the workshop in Porto.

Besides public authorities, territories and initiatives **participation in networks of the circular and collaborative economy** is very important. The forums and networks provide the structure where stakeholders can learn from each other by sharing their experiences and exchanging best practices. These activities can be developed at a pan-European level (EU Urban Agenda Partnership on Circular Economy) as well as regional and local level.

As a matter of fact, the cities and regions' participation in the EU Urban Agenda Partnership on Circular Economy (e.g. Flanders, Greece, Maribor, Prato, Porto The Hague) allowed the partners to create a strong linkage between territories facing various challenges in the same domain. The members of the Partnership **joined forces and experiences to bring a collective and stronger solutions to the issue at stake**. In result, city's authorities created a network of stakeholders and trigger horizontal governance processes.

Besides, some territories (Maribor and Flanders) have developed **a strong network of stakeholders cooperating with each other**. For instance, the concept of "cooperative economy networks"[41] in Maribor helps to strengthen the collaboration between different types of potential actors of circular and collaborative economy to set the path for the new business development in the city. Also, the structure of Circular Flanders[42] creates a favourable climax to gather different stakeholders (representatives of government, local authorities, civil society, industry representatives, and enterprises) and consider their interest while establishing new measures towards the development of the circular and collaborative economy.

In addition, a strong presence of cultural associations (Prato) or networks of social economy (e.g. Porto and Maribor) proven to create a more favourable uptake of the Urban Circular Collaborative Economy initiatives. The territories which have **a strong presence of cultural associations or social economy networks tend to place individuals and sustainable development at the centre of their concerns.** This plays an important role for better ownership and integration of the circular and collaborative economy in the territories.

[41] The cooperative economy networks in Maribor refer to the collaboration between different representatives of civil society, such as enterprises, NGOs, and population from various age ranges, or between different sectors of the economy to manage the city's resources circularly.

[42] A hub for a circular economy at the regional level, that was established on in 2017. It is a unique of its kind public private partnership regrouping governments, local authorities, industry representatives, civil society, academia/knowledge community that acts together and is supported by the regional Public Waste Agency of Flanders (OVAM).

Finally, societal acceptance and promotion of shared values by the initiatives and the society are equally important for the better implementation of Urban Circular Collaborative Economy. For instance, although community gardens have been used across many countries as alternative food networks, in Greece the context of their initiation differs slightly from this general trend and has been predominantly driven by the economic crisis. The reason why community gardens have been widely accepted in Greece is because gardening has not only been a way of coping with economic hardship, but also and above all, a means to rebuild social bonds, self-esteem and to reshape a space itself. The most prevalent form of collective gardens are municipal allotment gardens, suggesting a high involvement of local authorities in the development of such initiatives.

Based on above, it could be concluded that the **successful projects are based on** (i) innovative business environment; (ii) entrepreneurial approach; (iii) cooperation with the municipality; (iv) involvement of public authorities, (v) participation dedicated working groups/forums/network at the international/national or local level as well as strong presence of cultural associations or social economy networks; (vi) promotion of values that are shared in the society.

While the success factors have been discussed and summarised above, the section below provides insight on **possible obstacles** that could hinder the implementation and further development of Urban Circular Collaborative Economy in territories.

For all the stakeholders, the Urban Circular Collaborative Economy is perceived as a vector of transformation to address existing territorial challenges. A great variety of initiatives helps in closing the loop regarding the current vacuum of political action in some urgent policy areas. The initiatives often have an important social return on investment which fails to be measured, therefore, fails to be recognised for its real value by local policy officers. According to the interviewed initiatives' founders, despite the fact that many activities fulfil the key policy objectives, they do not perceive any substantial support from the local stakeholders (for The Hague, e.g. fighting with poverty – KledingBank DenHaag, social insertion – Made in Moerwijk, promotion of sustainable consumption – Lekkernassûh). Therefore, one of the biggest obstacles constitutes a lack of knowledge of the initiatives and the impacts that result from their activities. This **lack of knowledge** is present from both sides, of local and national authorities as well as the initiatives themselves.

Moreover, the current **policy frameworks** seem to be not suited to evaluate and assess the social return on investment (SROI)[43] of the initiatives. While almost all the six studied under this research territories have a framework towards the circular economy, the regulatory framework on the circular economy is more unequal across the EU. Territories do not have the same level of readiness and understanding. Especially, here a particular area of concern are regulations around not-for-profit organisations and activities. Indeed, many Urban Circular Collaborative

[43] Method measuring and assigning monetary values to change being created by the activities of a company or an organisation. It aims at measuring extra-financial values, such as social or environmental.

Economy initiatives are not for profit and/or carried out on a voluntary basis and/or of very small size, nevertheless, they must comply with regulations designed for for-profit activities. For instance, food sharing networks must comply with very burdensome regulations for restaurants and hotels, which considerably hinders their growth. This has been noted for instance by the initiative Lekkernassûh in The Hague. Another example represents the difficulties encountered by the initiative Made in Moerwijk in The Hague regarding small waste collection and treatment organisations, which is not allowed to collect waste because they are not waste collection publicly recognised institutions. Lack of dedicated and fit-for-purpose legislation to the circular and collaborative economy provides a feeling of uncertainty for entrepreneurs and consequently a riskier environment for the funders.

Another major obstacle for the development of the Urban Circular Collaborative Economy represents **their business model, which profitability is very limited** and often perceived only in a long-term. For instance, some of the initiatives are not run on a permanent base and/or do not have any income and their functioning depends on the subsidies (private, public). This causes a major threat for instance to the initiative that has been run since 2015 – KledingBank. Each year the initiative needs to find resources to pay rent and expenses (e.g. electricity bill). On average, yearly operating costs are between EUR 5000 and EUR 7000. In 2015, 2016, and 2017, the initiative perceived money from the local council. Since then, the KledingBank constantly struggles for its existence. In 2019, the initiative operates thanks to two private donations. The lack of well-functioning and a stable model of growth mentioned results also in a lack of **scaling-up** potential and consequently in the termination of activity after 2-3 years. In fact, some of the projects rarely pass the research stage and become operational.

All of the initiatives interviewed emphasised that the main difficulty of their activities constitutes the **lack of support, especially funding and long-term funding**. Dependence on funding does not ensure the constant flow of cash and therefore continuity of activities. For instance, a project in a pilot phase Repositório de Materiais in Porto suffers from lack of funding. Also, KledingBank Den Haag stopped to perceive funding two years ago. Since this time, the initiative constantly struggles for its existence and considers closing. In 2019, the initiative operates thanks to two private donations. Also, in Prato, the lack of (mostly financial) support by the local authorities has been referred several times as one of the main shortcomings of the multi-level governance in the field of circular economy implemented in Prato. The support can be also extra-financial and can take following forms: material (e.g. availability of spaces/roofs), publicity (advertisement of Urban Circular Collaborative Economy initiatives), administrative advice, creation of synergies among different stakeholders and the presence of a strong political will (networking, financing of citizens membership).

Finally, some of the interviews mentioned as an obstacle a **lack of continuity** in the case when the leader of an initiative's changes. The ownership of the project should be therefore were established among the main stakeholders and members of the initiative to ensure its long-term operation.

Regarding the above, it could be concluded that among the major obstacles to the successful development of Urban Circular Collaborative Economy are: (i) lack of knowledge about the initiatives and their potential impacts; (ii) inadequate policy framework; (iii) vulnerable business model environment; (iv) lack of support, especially in terms of funding; (v) lack of continuity of activity.

2.4 Conclusion: Towards a typology of Urban Circular Collaborative Economy initiatives in cities and regions

The above Chapter has shown that there exists a variety of Urban Circular Collaborative Economy initiatives, and that their growth potential was depending on multiple internal and external factors. This allows to complete the pre-existing typologies of Urban Circular Collaborative Economy-like initiatives (established by the literature and presented in Chapter 1.2.2) as well as the division into different domains focusing mainly on the common impacts or impact chains they are causing (presented in Chapter 1.2.3).

As previously explained, the division of initiatives into domains have been done on the basis of the potential impacts and the impact chain used (which is dependent both on the good or service shared and the organisational model and many more things).

Those impacts and impact chains are obviously dependent on many more factors which need to be taken into account:

- **Size of the initiatives and growth potential of the initiative:** this relates to the size of the initiatives (small or large in terms of revenues and or number of people involved), their growth potential (whether they want to scale-up and how). The research has found that the majority of initiatives is small and local and face obstacles to develop further.
- **Use of new technologies and use of data:** this relates to whether the initiatives imply the use of digital solutions, e.g. apps or ICT tools. Some initiatives have been found to use apps more extensively than others (e.g. in transport or waste treatment). This makes of digital skills of the population a precondition required for the take-off the initiatives (founders and users need to be more digital savvy) but also has implications in terms of skill learning (through the initiatives users can improve their digital-related skills).
- **Involvement of workers:** this relates to the way people running the initiatives are involved in them. Most of the identified initiatives are very small, i.e. involve to two persons. Some of them are run on a voluntary basis and/or as a hobby, while some others are a source of income for their initiators. This has an implication on their long-term sustainability and their development, as smaller initiatives will tend to lack sufficient resources to grow in the long-term.
- **Origin of the initiative:** whether initiative is initiated locally or has a presence abroad relates with the destination of the revenues it generates, and whether the initiative contributes to local growth or not.
- **Ownership of the initiative:** depending on the territory, some important initiatives are run by public authorities, or associations, private individuals, etc. This relates to whether the initiatives are initiated by consumer demand and/or the need for a public service.

- **Funding source and involvement of public authorities:** initiatives are funded through private funding or through regional and national schemes (i.e. funding per project) (e.g. Chi-Na association, SC17). This correlates with initiatives that can run for a long time, whereas in the second scenario their life expectancy is much shorter (depending on subsidies). Linked to the above, the geographical origin of the funding (i.e. whether it comes from private investment outside the territory or local public funding) has consequences on where the revenue generated is directed to (i.e. goes back to the investment fund based outside or contributes to local economic growth).
- **By user profile and users' characteristics:** this relates to the demographic characteristics of users (primarily their age) and social background. As the social objective is important for most of the territories screened (especially for The Hague, Prato), the fact that initiatives reach a socially-deprived people is a matter to consider.

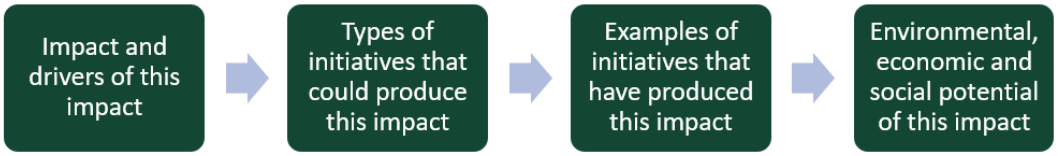
The main reason for choosing a relatively simple framework based on impacts and impact chains was to focus the typology on the viewpoint of policy makers on all levels. Not all the categories above are important for them, but what matters are the impacts that those initiatives can have and how they can contribute to their policy objectives or sustainability challenges. Enabling policy makers to understand the potential contribution to those objectives and choose the right initiatives is therefore the topic of the next Chapter.

3 Impacts of Urban Circular Collaborative Economy initiatives

This Chapter presents the analysis of the impacts and impact potentials of Urban Circular Collaborative Economy initiatives as a last categorisation of those initiatives. As explained above the key challenge for policy makers is to understand the full breadth of different Urban Circular Collaborative Economy initiatives and their impacts, and to link impacts with the presence and development of particular types of initiatives. A key finding of this Chapter is that impacts of Urban Circular Collaborative Economy initiatives are not different by nature from the ones assessed for collaborative economy initiatives in general. The difference is that, due to their small scale and not-for-profit nature, **larger impacts can only be achieved through a multiplication of the number of initiatives**, not necessarily through the scaling-up on the initiatives in terms of size.

The study has used the domains defined in Chapter 1.2.3 to analyse the initiatives based on the impacts they produce and the impact chains that is causing those impacts. This Chapter will explain the different potential impact their impact chains in more detail and list the evidence that we found in the literature that those impacts are generated both on the initiative level and on a more general level. Figure 7 explains this step-by-step approach.

Figure 7: Impact logic of the study



As to be expected the picture is as diverse as the initiatives. For each category of impact, we have developed a group of potential impact chains and brought together the available evidence on the impacts materialising.

We then developed indicators to measure those impacts, their drivers and grouped them into broader categories, as shown in the table below.

Table 5:Impact types and drivers of those impacts

Environmental impacts	Economic impacts	Social impacts
• Impact on resource use • Impact on waste management/creation • Impact on space/suburbanisation • Impact on awareness of environmental matters	• Creation and/or localisation of value chains • Impact on local revenues • Impact on local job opportunities • Impact on innovation/skills	• Impacts on availability or prices of goods and services • Impacts on local job opportunities • Impacts on local interaction • Impact on quality of life of citizens

This process has allowed us to have a common ground to compare indicators, while keeping the specificities of each domain (e.g. impacts on waste creation might be stronger for initiatives sharing goods or food because they have a higher usage of material). Ultimately, that approach will help policy makers to identify the best initiatives for their needs.

In the case studies we have tested this model with the couple of Urban Circular Collaborative Economy initiatives screened in each territory. The Chapter below presents these results per broad category of impact.

3.1 Environmental potential

From the very beginning of the political discussions on the circular economy and the collaborative economy the expected **environmental impacts** were on key aim that made the public and policy makers interested. Over time that discussion has become more differentiated. Overview studies[44] have shown that the environmental impacts of the collaborative economy can be positive but also negative and that some promises made were overblown. But it is worth noting that all the studies also found that under some conditions and in some areas significant environmental effects the have been noticed.

Environmental impacts can be expected because the following drivers or impact chains are activated:

- They change the amount of resources used in the process
- They decrease the creation of waste or trigger a more efficient management of it
- They change the way space is used, create different transport patterns or living patterns (i.e. suburbanisation).
- They change the way people perceive environmental issues by increasing environmental awareness (and thereby cause indirect environmental effects).

Environmental indicators of impacts therefore need to assess to what extent the initiatives triggered a more efficient use of resources, space or waste or in which way they influence environmental awareness.

3.1.1 Change in resource use

A common point across the initiatives is that they contribute to saving resources (whether CO_2 emissions, water, plastic) or use them more efficiently. They do so either by:

- **changing usage patterns** (e.g. by extending products' lifecycle or shared usage) which in turn either decreases the need for **production off new products** and the resource use associated to or **saves resources caused by usage** (e.g. car sharing initiatives if they reduce the kilometres of car usage).
- or by **making the production more resource-efficie**nt (e.g. energy cooperatives producing green electricity).

[44] European Commission (2017). Study on the environmental potential of the collaborative economy. Available at: http://trinomics.eu/project/the-environmental-impacts-of-the-collaborative-economy/

Examples in the case studies can be found below.

Reduction in CO_2 consumption with car sharing in Porto: The 740 members of the carsharing initiative Via Verde Boleias in Porto have estimated that their sharing initiative has saved 2,911 car rides or a distance of 66,012km, which is equivalent to a saving of 16 tons of CO_2 emissions. All the environmental benefit is thereby dependent on the saving of car rides. Whether the car sharing initiative actually saves car rides depends on the setup as car sharing initiatives can also induce additional car rides by replacing public transport.

Reduction in water use with clothing bank in The Hague: The Kleding Bank avoids the production of about 16,800 pieces of clothing per year by collecting and redistributing used clothes. From the literature, we know that 20,000 litres is the amount of water needed to produce one kilogram of cotton; this is equivalent to one t-shirt and a pair of jeans (2 clothes items).[45] The Kleiding Bank in The Hague therefore contributes to saving 168 million litres of water per year, which is the equivalent of the annual consumption of 10 households of 3-4 persons in the Netherlands.[46]

Reduction in energy consumption to produce new assets with sharing of tools in Flanders: The initiative Peerby has calculated the environmental impact of lending a vacuum cleaner instead of buying a new one. Producing a typical household vacuum cleaner, bringing it into your home and disposing it afterward, costs (without using it) about 300 kWh in energy, 19,2 kilograms of materials (including production waste), 700 litres of water, 55 kilograms of CO_2 and it costs about EUR 110. Therefore, sharing a vacuum cleaner avoids creating 8,056 MJ, 22,000 litres of water, 404 kilograms of CO_2, 924 MJ of fuel, 20 kilograms of waste. According to an estimation of Peerby, between 800 and 1,000 products per year are not produced because they are exchanged on the platform.

Change in ownership patterns with car sharing in Flanders: For instance, the car sharing initiative Cambio has avoided the purchase of 10,000 new cars in its 15 years of existence. According to a survey performed by the platform every two years, users of the initiative use less car that they would have done if they were car owners. It is therefore expected that the usage of cars is reduced thanks to sharing mobility initiatives. There is also some research from the US showing that the number of cars decreases due to car sharing. One study[47] found that between 9-13 cars are taken of the road for one car in the car sharing fleet. This conclusion however cannot be extended as other research on car sharing has shown that it could actually

[45] See the WWF website: https://www.worldwildlife.org/industries/cotton
[46] Waternet website: https://www.waternet.nl/en/our-water/our-tap-water/average-water-use/
[47] Martin, E., Shaheen, S.A. and Lidicker, J. 2011. Impact of carsharing on Household Vehicle Holdings. Results from North American Shared-Use Vehicle Survey. Available at; https://www.researchgate.net/publication/306187731_The_impact_of_carsharing_on_household_vehicle_ownership

increase usage of cars against public transport.[48] It all depends on the type of transport replaced by car sharing[49] In this regard, the fuel efficiency of the fleet is important. Car sharing initiatives with a mostly electric fleet are therefore expected to have more positive environmental impacts, as the CO_2 emissions resulted are lower. In Belgium the industry of mobility represents an important issue regarding sustainability as 23% of total country's CO_2 emissions comes from transport.[50] So in cases when car km are actually saved this is very relevant for the environment. A study in Germany concluded that each km of car ride causes 6-7 cents[51] in environmental costs due to air emissions, CO_2 emissions, noise and other impacts.

All these examples of resource savings mentioned above can have an important role in the overarching policy agenda towards a more circular economy as each resource saving is helping to reduce the environmental impacts caused by its production and usage. Since the initiatives are usually small, the size of those impacts will depend on the scale (is there a sufficient number of initiatives on the territory that can achieve these types of impacts?). The alternative resources that would have been used otherwise is also to take into consideration, as exemplified by the car sharing situation: if the presence of car sharing in a city increases the number of car rides with fuel and replaces public transport rides, then positive impacts on CO_2 will decrease.

3.1.2 Change in space use/suburbanisation

Some initiatives reviewed are also supporting the environment by changing the way space is used. These initiatives can have positive impacts if the construction of new building is avoided as the shared usage makes the upkeep of existing structures feasible. If they have a sufficient scale (meaning if they are sufficiently numerous, as they are small) they could also have an impact on urbanisation.

Whether that effect is positive or negative depends on the availability of free space:

- If the usage density is increased in areas with too much unused land an unused building it will make the area more attractive and possibly reduce suburbanisation.
- If on the other hand the usage density is increased in an area with already not enough free spaces or buildings this can also further foster suburbanisation.

Crucial conditions therefore are the existence of underused space and potential additional demand that is created (e.g. additional tourism in densely populated areas).

[48] European Commission (2017). Study on the environmental potential of the collaborative economy: https://publications.europa.eu/en/publication-detail/-/publication/8e18cbf3-2283-11e8-ac73-01aa75ed71a1/language-en

[49] Kalb, S. (2019). Flying to Thailand? Quantifying and Comparing Consumption Induced Carbon Emissions of B2C Car Sharing Users. Available at: http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=8996689&fileOId=8996690

[50] Deloitte (2019). Future of Mobility: A new Deal for Mobility in Belgium. Available at: https://www2.deloitte.com/content/dam/Deloitte/be/Documents/strategy/FOMBrochureFinalVersion.pdf

[51] Matthey, A., Bünger, B. (2019). Methodenkonvention 3.0 zur Ermittlung von Umweltkosten, p. 29. Available at: https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2019-02-11_methodenkonvention-3-0_kostensaetze_korr.pdf

Regeneration of unused buildings in Prato: In Prato, projects such as Officina Giovani have created positive repercussions by reusing four former warehouses for recreational purposes (an event room that can accommodate 500 people, a dance room, a theatre room, an open space, rehearsal rooms, a co-working space, a bar-bistro, and a web-radio). Overall bringing these building back into usage has a positive impact on the attractiveness of the central city as empty and unused buildings diminish the value of real estate in the whole area. Prato concentrates many examples of those initiatives, e.g. the cultural association SC17 takes place in an ex-industrial space which became more recently a laboratory shared by artists, architects, designers, photographers.

Car sharing initiatives can also have an important impact on the attractiveness of city centres if the amount of parking space needed is reduced. The literature shows that another effect of car sharing initiatives can to contribute to changing space use by reducing the demand for parking use. A study by Stasko et al (2013) notably shows that parking needs fall by 26-30% because of car sharing.[52] The positive effects of car sharing on parking have been confirmed in the Flanders case study with the two initiatives Cambio and Dégage.

Again, this is very dependent on the type of car sharing services in question and whether the user of these services are former public transport users or car owners. A study by Ryden and Morin (2005) showed notably that car sharing members were using public transportation 35% to 47% more during weekdays in Belgium and Germany.[53] A more recent study focusing on Germany found that car sharing was not resulting in significant modal split changes for car owners.[54]

Community gardens finally have positive effects on space use especially if they use space that was not used by the Municipality. Furthermore, they are deemed to have positive effects in greening city centres, which ultimately had positive effects on biodiversity and health. This has been highlighted especially in Porto[55] but and in Greece.[56] For instance, Horta à Porta is a project promoted by the Intermunicipal Waste Management organisation specifically to bring sustainable green spaces closer to the urban environment, developing biological production systems and promoting biodiversity and community spirit. A study carried out in partnership with the organisation found that the presence of those gardens had many positive effects,

[52] Stasko, T.H., Buck, A.B., & Gao, H.O. (2013): Carsharing in a University Setting: Impacts on Vehicle Ownership, Parking Demand, and Mobility in Ithaca, NY. Transport Policy 30, pp. 262–268. Available at: https://www.sciencedirect.com/science/article/abs/pii/S0967070X13001510?via%3Dihub https://doi.org/10.1016/j.tranpol.2013.09.018

[53] Ryden, C., Morin, E. (2005). Environmental assessment report WP 6, deliverable D6.2, version 1.

[54] Bundesverband CarSharing (2017a) Aktuelle Zahlen und Daten zum CarSharing in Deutschland, https://carsharing.de/alles-ueber-carsharing/carsharingzahlen/aktuelle-zahlen-daten-zum-carsharing-deutschland retrieved in European Commission (2017). Study on the environmental potential of the collaborative economy: https://publications.europa.eu/en/publication-detail/-/publication/8e18cbf3-2283-11e8-ac73-01aa75ed71a1/language-en

[55] In Porto the Municipality puts at disposal 1800 plots of 25 square meters each.

[56] KIPOS3 garden in Thessaloniki has started on an ex-parking provided by the Municipality.

including those from practicing horticulture (physical exercise, improvement in the perception of health status and general quality of life).

3.1.3 Change in waste creation/management

Other positive impacts in resource use can be caused by better usage of waste. This is particularly true for waste management or waste treatment initiatives as they are reducing the need for primary resources by finding ways to create value out of waste (creating high value products from waste for instance).

Waste treatment in Maribor: The Cinderella project is planning to develop an ICT platform tracking and modelling urban waste flows. The project is expected to contribute to saving 400,000 tons of primary/natural products, which could lead to 20% lower environmental impact in terms of reduction of natural resources use in the city of Maribor.

Food-related initiatives have also been found to generate positive impacts in this regard. Some food cooperatives and community gardens screened in the study have made efforts in managing food waste more efficiently or reusing it for other purposes.

Food sharing initiatives in Greece and Maribor: LIFE-Food 4 Feed in Greece is an EU-funded project developing technologies and processes for the reuse of hotel food waste and its transformation to animal feed through sun drying techniques. The project can save between 1 to 1,5 tons of incoming hotel's food waste in order to produce 200-300 kilograms of animal feed per day. On the other hand, the food retail store Robin Food in Maribor (selling food that is about to expire) has allowed to save 1000 tons, or 1 million food products, from being wasted since the opening of the first store in 2017.

Community gardens in Porto: the initiative Horta à Porta has put 54 Urban Organic Community Gardens for a total area of 12,38 ha at disposal of families. A study by Ellen Mac Arthur Foundation has found that community gardens with cultivable area of 4 ha had returned 120 tons of organic material to the soil every year[57] meaning the overall production of organic material could be about 400 tons.

Bringing food production systems closer to cities is also expected to have other important environmental impacts notably because they reduce the need for food travel, thus reducing CO_2 emissions (see Chapter 3.1.1).[58] However we were not able to quantity these impacts in this study.

[57] Ellen Macarthur Foundation (2018). Cities and Circular Economy for Food. Porto, Portugal. Available at: https://www.ellenmacarthurfoundation.org/assets/downloads/Focus-City-Porto-Portugal.pdf
[58] Ibid.

3.1.4 Change in awareness of environmental matters

Another positive effect highlighted for almost all the initiatives is their contribution to increasing awareness of environmental matters, either directly (e.g. they conduct themselves awareness-raising campaigns or communication around environmental issues) or indirectly (e.g. they trigger a change in habits and make people more receptive to environmental concerns). It is particularly true of initiatives changing the way people's consumption patterns, e.g. food cooperatives, community gardens, good sharing or car sharing, as they often carry out communication activities on their positive environmental impact.

It can also happen that initiatives that have another purpose (e.g. re-use of buildings, coworking spaces) trigger environmental impacts in another way. This notably happens when initiatives host initiatives which main goal is to foster environmental awareness.

Coworking spaces in Porto and Prato: The coworking space OPO'Lab in Prato has joined the Precious Plastic community and has produced several machines for the reuse of plastic. The initiative also has its own repair café and has activated a small urban farm. The cultural association SC17 in Prato fostered environmental awareness through the activation of a project on urban gardening. Through the establishment of the urban garden initiative "Orto in fabbrica", the circular economy is then not only promoted through the collaboration among individuals and the implementation of initiatives, but also practiced on a daily basis.

3.2 Economic potential

Another promise of both the circular and the collaborative economy policy was the additional economic activity that could be created by it. A study for the European Commission[59] estimated the overall number of people working in the collaborative economy (only transport, accommodation, finance and household services) to be more than 400,000 and the overall turnover to be more than EUR 26 billion both still growing strongly. Moreover, the study found that about 70% of these revenues are with the providers meaning that they are local income created. On the other hand, they found that most of these revenues were created in a very narrow set of sectors and by a narrow set of global companies who dominate these markets. Another study[60] focused on the labour market showed that there is a potential for added labour demand due to the collaborative economy but also some concerns about potential negative impacts on the working practices.

This study concentrated from the start on local initiatives outside the classical markets and therefore did with that do not focus to much on the potential economic impacts and more on the

[59] European Commission (2018). Study to monitor the economic development of the collaborative economy. Available at: https://op.europa.eu/en/publication-detail/-/publication/0cc9aab6-7501-11e8-9483-01aa75ed71a1

[60] De Groene, W., Maselli, I. (2017). The impact of the collaborative economy on the labour market. Available at: https://op.europa.eu/en/publication-detail/-/publication/b2d6fbd2-b47b-11e7-837e-01aa75ed71a1

environmental and social impacts. But even those initiatives analysed further showed some important economic promise.

On a broader level **economic impacts** can be expected because the initiatives produce the following effects:

- They create new value chains in the territory that were absent before (e.g. energy cooperatives in isolated Greek islands that used to rely on energy supply from the mainland);
- They increase the creation of value in the local or regional area by generating local revenues and creating job opportunities;
- They encourage innovation (e.g. initiatives using innovative techniques to sort waste or for composting) or trigger a change in skills, (e.g. repair cafés).

Economic indicators of impacts therefore need to assess which value chains have been created or localised by the initiatives, and what is the proportion of the value added created that can stay within the territories.

3.2.1 Creation and/or localisation of value chains

Creation of revenues by Greek cooperatives: The Sifnos Island energy cooperative in the island of Sifnos in Greece has expected annual earnings of EUR 3.5 million. The total cost of the investment is estimated at EUR 37 million. Annual revenues with current energy prices are estimated to be EUR 6.9 million and annual costs EUR 3.2 million (maintenance, insurance, payroll, fees, taxes, depreciation, interest, etc.). The food cooperative LIFE-Food 4 Feed in Crete is estimated that the commercial value of output product would be between EUR 300-350 per tonne of animal feed. The cooperative has currently an output of output of 200-300 kilograms of feed per day (between 70 and 100 tons a year) meaning the total value would be between EUR 20,000 and EUR 30,000 per year.

Localisation of value chains by cooperatives in Greece and The Hague: For some Greek islands, energy cooperatives can be a method to move the production of energy to the island instead of relying on the energy produced on the mainland. The Sifnos energy cooperative in is expected to produce enough energy to cover the needs of the island's inhabitants (8MW of energy power), with expected annual earnings of EUR 3.5 million. In The Hague, the initiative De Groene Regents produces 607,578 kWh per year of additional renewable energy as part of the energy produced in the territory.

3.2.2 Local job opportunities

Directly related to the additional local value added created additional local employment can be an important impact valuable to communities and policy makers. Because the initiatives surveyed do not generate huge revenues, they usually employ only a small number of people. The largest initiative screened in terms of employs created is Cambio in Flanders, which employ 35 persons. Most initiatives however bring to occupation a larger number of people as

volunteers, which can have positive impacts in terms of social inclusion (see Chapter 3.3 on social impacts).

Some initiatives do not create job opportunities yet but are planning to when scaling up. This is particularly true of cooperatives, as discussed below.

Expected job creation in cooperatives in Greece and Maribor: The Sifnos Island energy cooperative predicts the transfer of jobs from the current petrol energy production station to the facilities of the cooperative. There are 22 people currently employed at the petrol station that are expected to be transferred, since they have the knowledge and skill to manage the project. Both waste treatment cooperatives in Maribor (UrbanSOil4Food and Cinderella), offer jobs to 25 to 30 people, however these job posts are time-limited to the duration of the projects and not all job posts are full-time. Currently, nine volunteers are actively working in maintaining the Urban Soil4Food gardening huts. In case of the project's upscaling in the future, opening of new job posts is predicted: between two and three jobs posts are predicted in the running company, two new job posts are envisaged for work on the pilot plant and one job post is planned for a gardening post in the greenhouse. For the implementation of Cinderella, two people have been hired specifically to work on the project. After its completion, a new development centre will probably have to be created to offer its services and new job posts are foreseen.

3.2.3 Change in innovation/skills

Impacts in terms of innovation and entrepreneurship have also been highlighted. Initiatives can contribute to increasing familiarity with digital tools, as some of them use apps, e.g. Cambio. It should be noted however that users of the initiatives are usually young and already using online platforms or apps (see section 2.2), therefore the improvement is rather marginal. Initiatives can also contribute to enhance business innovation. This is the case of the Cinderella platform in Maribor, which explores the use of ICT for secondary raw materials.

Tracking of waste flows in Maribor: The Cinderella project in Maribor will develop an online platform for one-stop-shop service to track and model urban waste flows potentially an important starting point for other initiatives that can make better use of the waste streams.

Other initiatives can also teach new skills to their users, as exemplified with the two initiatives below.

Community gardens in Porto: On top of making available plots to individuals interested in practicing organic farming and composting, the initiative Horta à Porta also provides training in organic farming.

Repair Café in The Hague: Made in Moerwijk manufactures products from waste e.g. belts from tyre, bags from plastics, abandoned bicycles, benches out of wood waste. Made in Moerwijk is initially a circular economy initiative, which aims to provide jobs in Moerwijk. The

entrepreneurs aim to reinsert excluded people and therefore also has social impacts (see Chapter 3.3.2).

An interesting finding in this regard is that initiatives can trigger entrepreneurship spirit by making people willing to expand or start other initiatives. An example of this mechanism is the energy cooperative De Groene Regents in The Hague, which started with the installation of solar panels in the neighbourhood and evolved into a carsharing initiative (even if small for the time being).

3.3 Social potential

Social impacts have been the least researched of the three impact categories but as the discussions with the stakeholders in this project showed urban circular and collaborative economy initiatives are nonetheless expected to provide those positive social impacts.

Social impacts can be expected because the initiatives produce the following effects:

- They allow to provide goods and services to people who could not access it before;
- They provide employment opportunities for long-term unemployed or in areas that were lacking those;
- They generate interaction between citizens and more participation to community life;
- They contribute to an increased quality of life and well-being.

Indicators of social impacts therefore need to assess how the initiatives contribute to create social ties, especially among disadvantaged people. Concrete positive impacts have been found along this axis. It is worth noting that although only initiatives with expected environmental impacts were chosen for this study the social objectives were very much on the forefront of the objectives mentioned in the case studies and therefore deserve special attention.

3.3.1 Change in availability or prices of goods and services

Most initiatives contribute to saving revenues for their users, as they usually exchange products at a lower price than non-shared assets. This not surprising however as it is one of the key characteristics of the collaborative economy (prices are lower because the assets shared are unused or reused).

In some cases, initiatives make certain services or goods available for disadvantaged groups of the population and therefore also help to relieve poverty. More or less substantial savings have been found in almost all the initiatives screened, as shown below.

Food cooperatives or community gardens in Maribor, The Hague, Porto and Greece: The food cooperatives Robin Food Maribor and Lekkernassûh in The Hague estimate savings of around EUR 100 per supported person monthly. This is the equivalent of almost one tenth of

the monthly disposable income of an average inhabitant of Maribor (EUR 997).[61] In Porto (Horta a Porta), the self-production of vegetables through community gardens implies a reduction of grocery expenses estimated to EUR 200 of savings per year. Currently 1,800 families are taking advantage of the initiative, but many are still waiting to be assigned a plot. In the case of KIPOS3 community gardens, it is assessed that the garden helps reducing poverty, since garden's production covers two thirds of the users need in vegetables. KIPOS3 is assumed to help reducing poverty, since garden's production covers two thirds of the users need in vegetables.

Clothing bank in The Hague: The price of a piece of clothe in the clothes sharing initiative KledingBank is maximum of EUR 1, while the range of price for one piece of clothe in the retail is between EUR 30 and 70.[62] According to the initiative, users save around EUR 90 per month, and about 1400 people benefit from it (e.g. low income, unemployed, vulnerable people, large families).

Energy communities in The Hague and Greece: In The Hague, the initiative De Groene Regents contributes to saving EUR 30 to its users per month. In Greece, the Sifnos Island cooperative reported that energy prices would be approximately similar than they were before.

It is interesting to note that some initiatives have been initiated with the goal to fight against poverty, for instance in The Hague (KledingBank, Made in Moerwijk) or in Maribor (Robin Food) while some others have not but still contributed to generate savings and therefore fighting against poverty (Horta à Porta, energy cooperatives).

Some challenges have been identified in the case studies. In some cases, the users of the initiatives are not part of the socio-economic group for which impacts could be maximised. For instance, initiatives tend to use the Internet and/or social media and therefore are not known by older people, who are also vulnerable to poverty. This hinders potential social impacts of the initiatives. It has been highlighted for instance in Flanders with the initiative Peerby, whose users are rather young and concentrated in wealthy neighbourhoods whereas the initiative could allow savings by avoiding buying new items.

Similarly in The Hague, users of the energy cooperative De Groene Regents are more likely to be wealthy people whereas the initiative allows considerable savings in energy costs (estimated to EUR 30 per month), which could be spread across less wealthy parts of the population.

3.3.2 Employment for disadvantaged workers

Initiatives have social impacts when they contribute to bringing back to occupation people who were unemployed before. This is the case of some repair cafés for instance.

[61] See the Municipality of Maribor website: https://www.stat.si/obcine/sl/2016/Municip/Index/94
[62] Cost of living in the Netherlands: https://www.numbeo.com/cost-of-living/country_result.jsp?country=Netherlands

Repair cafés in Prato or The Hague: Initiatives such as Recuperiamoci! Onlus in Prato or Made in Moerwijk in The Hague respectively employ five and 20 persons who were long-term unemployed before. Nowadays, Recuperiamoci! Onlus in Prato has five permanent members and 20 associates who are mainly precarious workers with a history of alcohol and drug abuse. For Made in Moerwijk the explicit aim is to reinsert excluded people (e.g. unemployed, workers of red district, people with addictions, people with debts, people with illnesses, former criminals etc.) and bring them back to the social life and labour market. The initiative hires socially excluded people, train them how to function in the society and teaches them a working discipline.

As stressed in Chapter 3.2.2, initiatives can also involve volunteers which can have the positive social impact of bringing people back to some sort of occupation, even if not remunerated. It is for instance the case of the food cooperative Lekkernassûh in The Hague: 60 % of volunteers (40% of poor people and 20% of students (around 24 people). It is also an important meeting point in neighbourhood (between 200-300 people per week).

3.3.3 Initiated local interaction

The main common point between all the initiatives is that they all significantly contribute to social cohesion. This is especially true of smaller initiatives that are based in the so-called "close communities", i.e. reduced communities of people that are geographically close to each other.[63] Initiatives allowing to exchange goods are particularly relevant in this respect, as exemplified below.

Community gardens in Greece: Community gardens have been used across many countries as alternative food networks, however in Greece the context of their initiation differs slightly, as the development of urban community gardens has been predominantly driven by the economic crisis. The reason why community gardens have been so accepted in Greece is because gardening is a way of coping with economic hardship through growing your own food. Furthermore, it can be used to rebuild social bonds and reshape a space/place of belonging and self-esteem (see Chapter 3.3 on social impacts). An interesting finding is that initiatives do not necessarily seek to develop in size, but rather to reach out to more people. This can be done by multiplying the initiatives.

Exchange of goods or clothes in Flanders and The Hague: the initiative Peerby, which allows to exchange goods among neighbours, has estimated that the platform allows its users to meet between 800 and 1000 times on a monthly basis. The platform has also established some peer groups, i.e. groups of people that meet each other regularly to share (e.g. colleagues, sport team, friends). The clothes sharing initiative KledingBank has estimated the

[63] See Belk, R. W., Eckhardt, G. M., Bardhi, F. (2017). "From Community-Based Trust to Digital Trust: A Historical Perspective", *Handbook of the Sharing Economy*.

number of meetings between the volunteers and beneficiaries of the initiative to 16,800 per year.

The city of Prato is also a good example where the initiatives contribute to creating social ties, as developed below.

Sharing of space in Prato: Pop House involves, in total, more than 2,000 participants. Every year, on average, Chi-na association run (and co-runs) six projects in the field of urban regeneration and reaches out to about 1500 people – with the specific goal to reach out to the Chinese community by means of culture. The initiative promoted the encounter of the Chinese and Italian communities (more than 2,000 people were involved in 2018). Furthermore, out of four projects run in 2018, SC17 in Prato has been able to involve about 2,000 participants in total.

One particularity of cooperative-like initiatives is that they also trigger a change in organisation models towards less hierarchical decision making. On top of those, these cooperatives have been deemed to increase community ties, especially in the Greek islands. Energy cooperatives have allowed people to feel less isolated and safer because more autonomous in energy.

This also happens for initiatives that do not aim specifically to create communities in the first place, e.g. car sharing. For instance Via Verde Boleias in Porto. This service has a group option available, which allows the creation of communities. More specifically it allows to create public groups (e.g. to organise trips to major events such as concerts or sport events) or private groups (e.g. to organise the ridesharing between employees of the same entity).

Overall, the initiatives contribute to increase trust, which is an essential driver of the collaborative economy and deemed essential to the development of the circular economy as well (see Chapter 1.2.2). They therefore contribute to a broader debate on a "participatory policy making" at local level, or "hackable cities".[64,65]

3.3.4 Change in quality of life of citizens

Finally, and linked with the environmental impacts on green spaces and biodiversity listed above, the initiatives have an important positive effect on quality of life.

Sharing transport especially is expected to play a key role in increasing inhabitants' quality of life when it comes to decreasing congestion. In Flanders this effect has been deemed to be particularly positive, as Belgium has one of the highest road congestions in Europe, which

[64] The Hackable city is a research project that explores the potential for new modes of collaborative citymaking, in a network society. It can be often perceived as a model for a collaborative citymaking.
[65] European Cooperation in Science and Technology, *Sharing and Caring : Cost Action CA 1612, Member Countries Report on the Collaborative Economy,* available at : http://sharingandcaring.eu/sites/default/files/files/CountriesReport2018.pdf.

represents on the annual basis 39.37 hours.[66] It should be noted that direct effects have not been assessed however, and that it is always a combination of sharing transport modes with other factors (e.g. more intensive use of public transport) that will trigger decongestion effects.[67]

Community gardens have also been acknowledged to bring health benefits related to physical and mental health. According to a questionnaire results carried out by the Municipality of Porto for instance, citizens are more concerned about environmental quality and public health. Other study carried out in partnership with the waste agency Lipor suggests that the practice of horticulture is associated with multiple benefits, ranging from improved healthy behaviours, improvement in the perception of health status and general quality of life.

There are also benefits in terms of security. For instance, people in Prato (e.g. Chi-na association) think that the initiative promotes security and liveability of the neighbourhoods.

3.4 Conclusion: Measured impacts show important potential contribution to the circular economy

The impacts we observed were strongly related to the focus we chose in respect to the initiatives surveyed. The reviewed initiatives were chosen on the basis of their potential environmental impacts so we found that nearly all of the initiatives had some environmental impacts.

On the other hand social impacts were also very important for the stakeholders in the six regions and therefore most of the initiatives had also very important social impacts. Economic impacts were smaller and less common due to the fact that we focused on local and not for profit initiatives which excluded many initiatives with more notable economic impacts.

One key conclusion of this overview of potential impacts is the variety of impacts depending on the objectives, the services provided the resources used and the local circumstances. Even within the limited sample of initiatives it was clear that many initiatives can contribute to various public policy objectives. Another key finding is that impacts of Urban Circular Collaborative Economy initiatives are not different by nature from the ones assessed for collaborative economy initiatives in general. The difference is that, due to their small scale and not-for-profit nature, larger impacts can only be achieved through a multiplication of the number of initiatives, not necessarily through the scaling-up on the initiatives in terms of size.

Chapter 1 and 2 described the variety of Urban Circular Collaborative Economy initiatives and that they can be grouped in various ways. From a public policy perspective, the most useful “typology” of initiatives would be based on impacts and impacts chains, as those are directly

[66] European Commission, Hours spent in road congestion annually, 2017, available at: https://ec.europa.eu/transport/facts-fundings/scoreboard/compare/energy-union-innovation/road-congestion_en#2017

[67] Kalb, S. (2019). Quantifying and Comparing Consumption Induced Carbon Emissions of B2C Car Sharing Users. Available at: http://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=8996689&fileOId=8996690

related to the policy objectives that should be obtained. Our classification of Urban Circular Collaborative Economy initiatives into domains is (see Chapter 1.2.3) is therefore based on impacts and impact chains.

Chapter 3 then shows the evidence that was found in the case studies and the literature on the impacts of Urban Circular Collaborative Economy initiatives. By ordering the initiatives and examples according to their impacts or the overarching policy objectives we were aiming at making both the logic of impacts clear and helping policy makers to identify relevant impacts and initiatives.

The key challenges therefore are to understand the potential impacts of the initiatives, pick on this basis the right initiatives to support and develop the support portfolio they need. This is the key content of the following recommendations Chapter.

4 Identifying and supporting the right initiatives: policy recommendations

This Chapter outlines a first draft of policy recommendations based on the research. The concepts, prototypes, experimentations and actual practices already exist; with some exceptions, many of the seed forms have been developed, but they are still fragmented and have not yet created generative ecosystems.

As discussed above, the research showed that the collaborative economy can be a powerful tool to reach circular economy policy objectives. This is especially crucial considering that the European Commission is putting a strong emphasis on the circular economy with the EU Green Deal[68], and that national and regional/local policymakers are expected to set up new regulatory tools in order to achieve the transition towards the circular economy. An important objective of this research is also that it fits in other European Commission's work, such as the Urban Agenda Partnership on the circular economy[69] and that it can serve as basis for follow-up exercises.

The challenge for policymakers in using the collaborative economy for circular economy purposes is the great variety in the types of Urban Circular Collaborative Economy initiatives and their economic, social and environmental impacts. These impacts depend not only on the type of initiative but also on local circumstances, as stressed above. Regions and cities are therefore crucial actors to design, implement and monitor policies aimed to those initiatives.

On the other hand, European and national policymakers have a key enabling role to play in setting some framework conditions for regional and local policymaking. Therefore, the following recommendations target all levels of policymaking.

To make the collaborative economy a meaningful tool and to ensure that the initiatives contribute to circular economy objectives, recommendations under this chapter are structured around three pivotal areas:

1. **Better knowledge:** policymakers need to understand the existing initiatives and the environment in which they operate. This is done by a) setting out clear policy objectives in line with national and regional/local sustainability challenges, b) identifying the impacts and the mechanisms that enable Urban Circular Collaborative Economy initiatives to achieve these impacts, c) understanding how the existing landscape of initiatives maps onto those mechanisms, d) fostering learning among interested actors, e) monitoring data. By better understanding the "impact theory" behind the initiatives and grasping the good indicators to monitoring them, policy makers have the necessary tools to create a favourable environment for those initiatives that answer to their territory's sustainability challenges.

[68] See the Communication on The European Green Deal COM(2019) 640 final. Available at: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf
[69] https://ec.europa.eu/futurium/en/circular-economy

2. **Better regulation:** once having understood the context and tools at their disposal, policymakers need to develop framework conditions to help the initiatives they want to foster. This can be done through and most importantly a) creating an institutionalised framework to foster creation and growth of the initiatives in the longer term, b) active guidance and support, c) leaving space for experimentation and knowledge sharing.
3. **Better funding:** policymakers need to make appropriate resources available to make sure the initiatives that are contributing to local/regional policy objectives receive sufficient funding and the right type of funding: either by providing funding themselves, or by supporting them to generate the required private income for their operations.

Policymakers need to work simultaneously on these three areas to create a more favourable environment for the circular and collaborative economy. Each of these three pillars function together and should be treated in a holistic approach.

4.1 Better knowledge

The research has found that policymakers' knowledge of the existing initiatives, their needs and the potential contribution they could make to the circular was limited or held by a very small number of actors. This lack of knowledge can hinder the formulation and implementation of a fit-for-purpose strategy to use such initiatives to foster the circular economy and other relevant policy objectives to answer their sustainability challenges. Better knowledge from policymakers is also crucial for creating more linkages between the initiatives themselves, or to communicate about them to the general public.

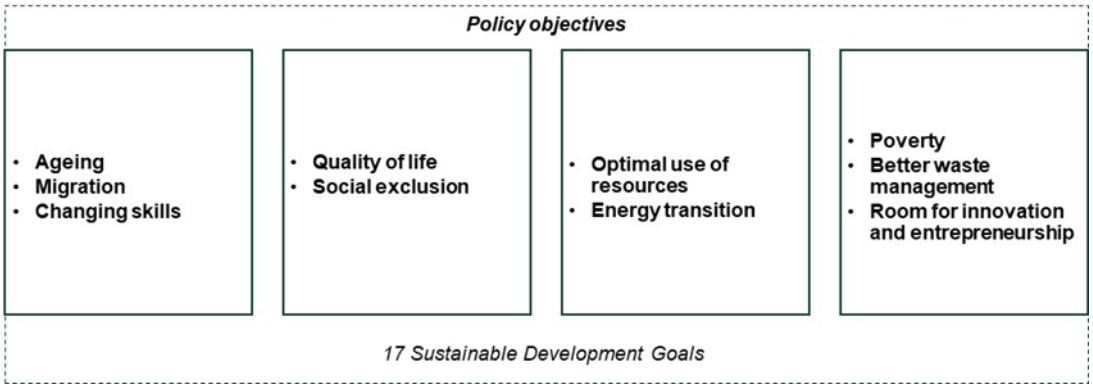
The following practical steps are recommended to enhance understanding of the circular and collaborative economy area, and the presence of initiatives in European territories.

a) **Set out clear policy objectives for the Urban Circular Collaborative Economy in line with national and regional/local sustainability challenges.**

The research has found that Urban Circular Collaborative Economy initiatives can have a variety of impacts towards different directions (reducing waste streams, allowing a more optimal use of space, reducing social exclusions, etc.). In order to maximise the impact potential of those initiatives, it is important that policymakers set out the policy objectives they would like to achieve through the development of the Urban Circular Collaborative Economy and, consequently, embed them into concrete policy strategies with clear targets.

Policy objectives linked with the Urban Circular Collaborative Economy can be as follows:

Figure 8: Urban Circular Collaborative Economy-related policy objectives



As shown in Chapter 2.1, these policy objectives are connected with different sustainability challenges: demographic change, suburbanisation, climate change, economic growth and social exclusion. These challenges are found not only at the territorial level but also at the national and European level, this is why the policy strategies including those policy objectives could be framed at any of those levels, depending on the institutional structure of the Member State.

In general, linking the policy objectives of cities and regions with broader national and European policies, or for instance the Sustainable Development Goals is advised. This can have the triple advantage of: 1) avoid duplication in the policy objectives pursued; 2) legitimate local and regional strategies by giving them a broader perspective; 3) allow to use pre-existing indicators to monitor results.

There could be different ways to include those policy objectives into national, regional or local policy strategies:

- Include them in strategies on the circular economy. Circular economy strategies are multiplying at all levels, and the growth is expected to be exponential with the EU Green Deal.[70]
- Include them in strategies on the collaborative economy. This is more rarely done in European territories as there is a very little number of sharing economy strategies, and if any, there are more generally found at city level (e.g. in Milan or Amsterdam, as described in the box below).
- Include them in sectoral regulations, i.e. on mobility, tourism, etc. For instance, the Netherlands is currently developing a national strategy on car sharing (Green Deal for Carsharing).

Urban Circular Collaborative Economy initiatives can then be justified as a mean to achieve those objectives.

The box below provides examples of cities that have established concrete strategies on the circular economy or the collaborative economy, focusing on specific types of initiatives to help achieving these objectives.

[70] The Communication on The European Green Deal notably calls for a policy mobilisation at all levels. Available at: https://ec.europa.eu/info/sites/info/files/european-green-deal-communication_en.pdf

A good example in this regard is the **city of Milan**, which was the first European city to establish a strategy on the sharing economy around smart mobility in 2015.[71] The strategy devised objectives around different strands (citizens participation, energy efficiency of buildings, electric mobility) which then allowed to develop actions to be undertaken between 2016 and 2020 to achieve these objectives. In 2018 this Strategy has been updated with the Milano Collabora.[72] The city of Milan has complemented its sharing economy actions with Circular Milan, a new strategy focused on the circular economy with the set of different targets by 2020 and 2030. The strategy explicitly mentions car sharing, fablabs and maker spaces.

The city of Milan linked its strategy with the Sustainable Development Goals notably by participating to a Horizon2020 call on re-localisation of production and reconfiguration of material flows at different scales (in relationship with SDG 11 on Smart and Sustainable Cities) alongside with the cities of Amsterdam, Berlin, Paris, Vejle and Cluj-Napoca. However, the link with the SDGs could be made more explicitly in the Strategy in itself.

Another example of a well-developed collaborative economy strategy is the one of the **city of Amsterdam** with the Sharing Economy Action Plan in 2016.[73] The strategy has allowed Amsterdam to become a front-runner in the sharing economy in tackling several aspects such as short-term rentals, mobility, coworking spaces, green energy, the care sector, etc. Same as Milan, the sharing economy strategy of Amsterdam has been complemented by a circular economy strategy, Circular Amsterdam.[74] The strategy is part of the broader Smart City Strategy and aims at financing circular economy projects.

A question remains on whether the setting out of policy objectives focused on certain types of initiatives would not prevent initiatives to arise spontaneously. Our research found that rather it could help cities and regions understand which initiatives are key to foster so they answer better to local challenges.

b) Identify the potential impacts and the mechanisms or levers that enable initiatives to achieve these impacts.

After setting out policy objectives, policymakers should have a clearer idea of the impacts the Urban Circular Collaborative Economy can have. This work on understanding the impacts can start from the EU and national level, but ultimately local and regional actors are the best placed to understand which kinds of impacts are the most relevant in their areas.

There is already an important corpus of literature on the impacts of the circular economy, and the literature about the impacts of the collaborative economy is becoming more and more extensive. This study provides policy makers with a comprehensive list of impact literature (see Annex 4), and cities and regions could benefit from this existing research.

One key aspect to consider here is the one of social return of investment, especially if the policy objectives set out by the public authorities are directed to social issues. As stressed in Chapter 2.3, initiatives often have an important social return on investment which is not measured, therefore, fails to be recognised for its real value. This is also linked with the issue of externalities raised by the P2P Foundation report. Carrying out research on social impacts is therefore crucial at that stage. Our research emphasises the following indicators, explained in Chapter 3 and available in Annex 3: Impact on poverty, Social cohesion, Quality of life in cities, Social impacts of the activities enabled in the space, Impact on health and health poverty. Other

[71] https://www.comune.milano.it/aree-tematiche/relazioni-internazionali/progetti-ue/sharing-cities
[72] https://economiaelavoro.comune.milano.it/progetti/milano-collabora-il-comune-cerca-partner
[73] https://www.sharenl.nl/nieuws/2016/03/09/actionplan-sharing-economy
[74] https://amsterdamsmartcity.com/circularamsterdam

organisations have also provided with useful tools to help policymakers to assess those impacts, e.g. the Ellen MacArthur Foundation with the city's benefits tool.[75]

From there, it is also crucial to identify different policy mechanisms or levers that can help achieve these objectives. While some regulations or policy initiatives can only be initiated at national level (e.g. concerning taxation, employment rules, etc.), local and regional level policy makers have some tools at their disposal (see Chapter 2.3 and the recommendations on Better Regulation in Chapter 4.2).

Policy makers can establish how these tools could be used to foster their policy objectives and under which form: regulatory work at local or regional level, public procurement, public private partnerships, etc.

c) Understand how the existing landscape of initiatives maps onto those mechanisms.

The research has shown that the impacts of Urban Circular Collaborative Economy initiatives can differ, and Chapter 3 has given concrete examples of the impacts that some types of initiatives can have.

The third recommendation is therefore to gain a better overview of initiatives existing in the territory. This could be done through desk research, but also local events, stakeholder engagement activities, networking events. The workshops performed for this study have for instance contributed to bring additional knowledge of the ecosystem as the founders of the initiatives know one another.[76] As initiatives tend to belong to broader circles around e.g. the social economy, start-ups and scale-ups, or social entrepreneurship. Policy makers could rely on these broader networks to broaden their reach and further enhance their knowledge about the initiatives.

University or think tank research on the topic should not be underestimated. Cooperation of public authorities with think tanks (e.g. in The Hague: Platform 31, Design for Governance; in Flanders: VITO) and universities (e.g. in Flanders: KU Leuven, Ugent, University of Antwerp; in Maribor: university of Maribor; in Prato: university of Florence; in The Hague: Leiden University) engaged in the subject could lead to a more innovative approach to enhance knowledge. As emphasised during the research, these institutions have another understanding of how the initiatives works and can act as "translators" of the initiatives' landscape and needs to the public authorities.

This ultimately has the goal to allow cities and regions to identify initiatives in line with their internal policy objectives and subsequently design measures to support their future development. This has been done, for instance, by the Municipality of The Hague with the

[75] See for instance the city indicators for food. Available at: https://www.ellenmacarthurfoundation.org/our-work/activities/food

[76] Although it should be noted that in some territories (e.g. Greece) the lack of knowledge of each other among the initiatives has been highlighted as a problem during the workshop.

initiative Made in Moerwijk and is planned to be reiterated with the KledingBank. These two initiatives clearly focus on the reduction of poverty, which is a key priority of the Municipality.

Many projects trying to map initiatives exist, as the box below shows.

Some examples of mapping initiatives have been done in **Barcelona**[77], **Gothenburg**[78], **Oslo**[79]). The use of open data and open source is crucial for performing such as map, as emphasised by an interview. This has been done in Barcelona, but also in **Ghent**.[80]
The research project **I-Share Germany** has also performed a stocktaking of sharing economy initiatives with the Sharing Economy Atlas.[81] The research team started with interviews with 30 organisations, which helped develop indicators. They then collected data using a survey targeting 2,500 organisations active in Germany which gathered 550 responses.

Mapping the initiatives (in terms of sector, number of users, employed people, volunteers, impacts) and gathering them in a central place accessible to all has been deemed very helpful by the initiatives. Notably during the workshops in Maribor, Greece and Porto, the initiatives established that they would benefit greatly from one central repository to learn from each other.

d) Cooperate with the best-suited actors and foster peer learning.

Public authorities can take a pivotal role in bringing actors together and encourage peer learning. The learning process therefore goes in both senses: public authorities can rely on pre-existing networks to enhance knowledge on the initiatives (see point c) above), and possibly reinforce it as facilitator of dialogue later on.

At European level, better knowledge could be achieved by improving sharing of good practices across Member States. Alongside events and workshops, the creation of a fully functional structure or platform (e.g. inspired by the Urban Agenda Partnership for the Circular Economy) focused on the collaborative economy and dealing with the Urban Circular and Collaborative Economy could be a way to institutionalise systematic knowledge sharing on the topic.

At lower levels, public authorities could promote collaborative economy networks researching the circular economy among cities and regions. Many collaborative economy organisations exist in the different EU Member States (shareNL in the Netherlands, Collaboriamo in Italy, Sharing Ireland in Ireland, etc.) or across Member States (Ouishare, P2P Foundation). These organisations already work closely with public authorities (for instance, shareNL and the city of Amsterdam, the P2P foundation with the city of Ghent), including on circular economy topics (e.g. Collaboriamo with the city of Milan, shareNL with The Hague). These networks could be used further to support the build-up of knowledge on the impacts of the circular and collaborative economy and to develop strategic and ongoing communication platforms to facilitate exchange among regions, cities and initiatives. As recommended above at local and

[77] http://directori.p2pvalue.eu/
[78] https://smartakartan.se/en/about-us/
[79] https://locals.global/
[80]https://www.demorgen.be/meningen/gent-bruist-nu-al-van-de-deelinitiatieven~bc37e78e/?referer=https%3A%2F%2Fwww.google.com%2F
[81] https://www.i-share-economy.org/atlas

regional level, there is also potential for further collaboration between policy makers and universities and research centres at national level.

Following the model of the work done around clusters by the European Cluster Observatory for instance[82], policymakers can add value by providing a space for discussions, events, funding schemes, that fosters exchange between Urban Circular Economy initiatives and these broader circles around innovation, social research, etc. This could be done at all levels of policymaking, although a regional and local focus is encouraged in order to enhance the development of solutions on the ground.

The presence of structures called "public-common" is emphasised notably by the P2P Foundation in the Theory of the Commons. These structures gather citizens and public authorities and stimulate their potential to auto-organise.[83] A good example in this respect is the BarCola group in Barcelona, which brings together the Municipality with people working on the ground, as described in the box below.

BarCola[84] is an informal group organised in Barcelona with different actors (public administration, research, businesses, trade unions, associations, etc.) working together and trying to improve the quality of open data about collaborative economy initiatives. The group organises big meeting called ProCommons every year. According to the stakeholders interviewed, the presence of such platform is crucial to increase knowledge from all sides.

The Chamber of Commerce of Paris (CCI Paris Ile de France) organises events to raise awareness to companies about the circular and the collaborative economy.[85] They have notably created a network of entrepreneurs called "Plato" to help companies exchange ideas on the topic and accompany them in their discussions. Although the initiatives targeted here are companies, i.e. for-profit, the model could be replicated to non-for-profit initiatives.

Linked with the above, effort in the promotional and marketing activities should intensify. Promotion of the initiatives and projects could lead to greater usage and subsequent greater environmental, economic and social impacts. Promotion of the activities include organising more workshops, use of traditional media (newspaper, magazine etc,.) as well as social media. A promotional strategy to include educational institutions (primary schools, high school and universities) should be developed. This has been notified notably in Greece, Porto, The Hague. For instance, in the Hague, people are directed to the KledingBank by social security services and local authorities.

e) Monitor the collaborative economy.

Lack of data on the initiatives and their impact has been identified as a key obstacle to the development of policies on the Urban Circular Collaborative Economy. To ensure that the initiatives contribute to reaching the cities and regions' objectives, it is important that cities and

[82] Clusters are defined as regional ecosystems of related industries and competences featuring a broad array of inter-industry interdependencies1. They are defined as groups of firms, related economic actors, and institutions that are located near each other and have reached a sufficient scale to develop specialised expertise, services, resources, suppliers and skills. The European Commission has undergone a significant work to foster clusters in European regions, as shown with the European Cluster Observatory: https://ec.europa.eu/growth/industry/policy/cluster/observatory/about_en

[83] http://commonstransition.org/wp-content/uploads/2019/09/AccountingForPlanetarySurvival_defx-2.pdf

[84] https://comparteixbarcelona.ouishare.net/project/grupo-barcola/

[85] https://www.entreprises.cci-paris-idf.fr/web/cci78/accompagnement-demarche-ec2

regions set up a monitoring system for circular and collaborative economy initiatives. This has been done, for instance, by the Municipality of Milan in the follow up to its Sharing Economy Strategy.

As the following Chapter emphasises, some of the regulations affecting the development of the circular and collaborative economy are adopted at the national level and it could be logical to monitor these regulations at the same level. Possible aspects to monitor could be the clarity of the regulations applicable to the providers and users of the initiatives, the presence of market access requirements for Urban Circular Collaborative Economy-related sectors, the presence of public or private support mechanisms for those initiatives, alignment of regulations within a particular country (i.e. whether the local and regional regulations and procedures differ from the national ones). The indicators of the Collaborative Economy Index developed by the European Commission in 2018[86] could serve as a starting point.[87]

Unlike the monitoring of regulatory frameworks, it is recommended that monitoring systems for the economic development and impacts of the Urban Circular Collaborative Economy are primarily developed at local or regional level as the proximity of local and regional actors facilitates data collection among smaller initiatives. Depending on the cities and regions' objectives, and especially if those ones are focused on social aspects, economic development and impact monitoring frameworks could pay a special attention to social returns on investment (see the point b) above).

To encourage this further, the present study has gathered different databases and developed a list of indicators to measure the impacts of the initiatives aimed at local and regional policy makers. These indicators could be used as a basis for local and regional policy makers to measure the Urban Circular Collaborative Economy in their territory and are available in Annex 3.

At the moment there are no indicators to scrutinise the economic development and impacts of the collaborative economy developed by national statistics institutes[88] nor by other organisations (OECD, Eurostat). There exist indicators measuring the progress towards the circular economy[89] but these ones do not include collaborative economy dimensions. The integration of collaborative economy indicators in the existing monitoring frameworks for the circular economy could be envisaged in order to facilitate monitoring exercises. Another

[86] The Collaborative Economy Index dates from 2017 and is available at: https://ec.europa.eu/internal_market/scoreboard/performance_per_policy_area/collaborative-economy/index_en.htm. The study developing the indicators is available at: https://op.europa.eu/en/publication-detail/-/publication/79bee7ad-6d22-11e8-9483-01aa75ed71a1/language-en/format-PDF/source-72448577

[87] A similar work could be undertaken in 2020 at the regional/local level, taking into account other sectors (food, waste, energy) and framed in a way that circular economy goals are emphasised (e.g. more emphasis on waste regulations, resource use, food, etc.).

[88] The United Kingdom's Office for National Statistics had started some work on the feasibility of measuring the collaborative economy in 2016 but did not follow up on the exercise. Results are available at: https://www.ons.gov.uk/aboutus/transparencyandgovernance/freedomofinformationfoi/uksharingeconomybetween2014and2019

[89] Eurostat indicators on the circular economy are available at: https://ec.europa.eu/eurostat/web/circular-economy/indicators. City indicators on the circular economy are being developed by the Urban Agenda Partnership on the Circular Economy and are available at: https://ec.europa.eu/futurium/en/circular-economy/terms/all/City%2BIndicators%2Bfor%2Ba%2Bcircular%2Beconomy

potential measure on national or EU level would be the development of statistics on not-for-profit organisations as currently the available statistics on these are not comparable to business statistics on the other hand. Being able to see which regions have a deeper network of not for profit organisations (with collaborative economy organisations being one part of that statistic) could help policy makers to see other strengths or weaknesses.

4.2 Better regulation

As emphasised in Chapter 2.1, there is no comprehensive regulatory framework for the circular and collaborative economy. At the same time, existing regulations are often not aligned with the needs of the initiatives. Building on their knowledge of existing initiatives and their links to relevant actors, cities and regions could develop a regulatory and political framework focused on starting and developing those initiatives that are most valuable in the local and regional context.

This can be done in the following ways:

a) Create an institutionalised framework to foster creation and growth of the initiatives in the longer term.

Policymakers could support the cities and regions' policy work by shaping the regulatory framework for relevant initiatives.

One particular area of concern are regulations around not-for-profit organisations or not-for-profit activities, that are mostly framed at the national level. Indeed, many Urban Circular Collaborative Economy initiatives are not for profit and/or carried out on a voluntary basis and/or of a very small size, but they must comply with sectoral regulations designed for for-profit activities. For instance, food sharing networks must comply with very burdensome regulations for restaurants and hotels, which hinders considerably their growth. This has been noted by the initiative Lekkernassûh in The Hague. Another example is the difficulties encountered by small waste collection and treatment organisations, which are not allowed to collect waste because they are not publicly recognised institutions. These regulations considerably reduce the potential impact these initiatives operating at local level. On that aspect, it should be noted that policy recommendations for the collaborative economy can be applied to the Urban Circular Collaborative Economy.[90]

At European level, work has already been done to provide guidance on regulations around the collaborative economy with the European Commission's Communication on a European Agenda for the Collaborative Economy published in June 2016.[91] The Communication gives a definition of the collaborative economy and provides recommendations to policymakers regarding market access, liability, protection of users, self-employment and taxation. Adding to

[90] Given the fact that, as stressed in Chapter 1.2.1, Urban Circular Collaborative Economy initiatives are per se collaborative economy initiatives.
[91] Available at: http://ec.europa.eu/DocsRoom/documents/16881/attachments/2/translations

the recommendations of the European Commission, the European Parliament's 2017 resolution on the collaborative economy emphasises the following aspects:[92]

- **individual vs professional providers**: effective criteria to distinguish between "peers" (e.g. individual citizens providing services on an occasional basis) and "professionals" should be provided, with general principles at EU level and thresholds at national level (e.g. based on income),
- **consumer rights**: inform consumers about the rules applicable to each transaction and their rights; collaborative platforms should put in place effective systems for complaints and for settling disputes,
- **liability**: the European Commission should further clarify collaborative platforms' liability,
- **workers' rights**: fair working conditions and adequate protection should be guaranteed for all workers in the collaborative economy;
- **taxation**: similar tax obligations should be applied to businesses providing comparable services, whether in the traditional economy or in the collaborative economy.

Worth highlighting for this study, the European Committee of the Regions also expressed its opinion on the Commission's Communication on the collaborative economy, recommending the integration of provisions for smaller, **"non-commercial and commons-based" initiatives.**[93] In the view of the Committee of the Regions, the European Commission's approach focuses on the commercial and consumer aspects of the collaborative economy while leaving aside the non-commercial and commons-based approaches. It calls the European Commission to further analyse and define the different forms of the collaborative economy, including the non-commercial and commons-based approaches; believes that sectoral regulation is necessary for the commercial aspects of the collaborative economy to ensure legal certainty and fair competition for operators, especially with respect to taxation; considers that any "hard" regulatory initiative should keep a sectoral approach and take into account the scale of the initiative as a criterion to draw regulatory lines. The opinion stresses that EU institutions should provide a sound framework, institutional and legal guidance and ongoing access to expertise and other assistance appropriate for implementation; calls to adopt a holistic approach in addressing the issue as an economic, political and social phenomenon and to coordinate policymakers' efforts, through a comprehensive public policy agenda built; considers that many of the sectors touched by the collaborative economy have a disruptive impact at the local and regional level and that local and regional authorities should therefore be allowed to govern or regulate as collaborative economy initiatives in order to adapt them to local conditions.

In line with the Committee of the Regions' opinion summarised above, it is important that policymakers from all levels adopt an integrated approach for the regulation of the collaborative economy, with **some aspects primarily addressed at EU and national level while others addressed at regional and local level**.

[92] See the European Parliament's resolution on the sharing economy (2017). https://www.europarl.europa.eu/news/en/press-room/20170609IPR77014/sharing-economy-parliament-calls-for-clear-eu-guidelines

[93] Available at: https://pes.cor.europa.eu/local-and-regional-dimension-sharing-economy

Legal issues that require a coordinated policy approach such as platform liability and consumer rights could be addressed primarily at EU and national level. Market access requirements for service providers and workers' rights are also better addressed at the national level in order to avoid any economic and social dumping within a particular country. Linked to that, the establishment of thresholds to distinguish between peers offering services on an occasional basis and professionals is an important element to consider. These thresholds, as the Committee of the Regions emphasises, should serve to provide legal certainty to platforms are providers, and to avoid that smaller providers are not affected by sectoral regulations preventing unfair competition. Thresholds can relate to the amount of revenue gained from the activity, the number of days of activity, the frequency of the activity.

The box below provides with some examples of those thresholds in some Member States in the accommodation and transport sector.

In order to differentiate peers and professionals offering services in the short-term rental sectors, national, regional and local governments have established some thresholds of various types.[94] In Flanders the threshold is set at two rooms or eight tourists, while in Croatia it is 10 rooms/20 beds. In Italy or the Spanish city of Valencia, the number of properties rented out is the threshold. In other Spanish cities, it is the duration of the rental (e.g. in Madrid) or a combination of duration of the rental and number of times within a year (e.g. in Barcelona). In France, providers are considered as professionals if they receive more than a certain level of income from their activity. In addition, authorisations and registration schemes only apply to peers renting out their secondary residences. In Sweden and in Greece, the law sets a series of thresholds including the type of asset, type of service provided, level of income received and/or duration of the rental.

The presence of thresholds gives clarity to peer providers about the legality of their activity and usually **exempts peers from some requirements applicable to professional providers** (e.g. registration or authorisation requirements, health and safety regulations).[95] This is the case in the Belgian region of Flanders, where peer providers only need to notify the Flemish government prior to starting their activity while professionals need an authorisation; or in Austria, where peer providers are exempt from providing a certificate of competence to public authorities and from complying with health and safety requirements.

In the transport sector, it is mostly the **for-profit/non-for-profit nature of the activity** that distinguishes between peers and professionals. This distinction usually differentiates between ride sharing (considered as of cost sharing basis) and other for-profit transport activities. For instance, in Estonia, ride sharing is defined by negation of taxi services, as activities "where the aim of carriage is not the earning of income".[96]

On the other hand, enforcement can be best done at regional and local level, as it requires people on the ground.

Finally, some other issues e.g. taxation could be addressed more transversally by the different levels depending on where the tax is retrieved (national, regional or local). The box below provides with examples of favourable tax system via allowances or specific tax rules for collaborative economy providers that can be found in some countries.

Belgium has introduced a new law in December 2016 where peer providers of collaborative services are subject to a simplified tax scheme with a reduced income tax rate of 10 % and an

[94] European Commission (2017). Study to monitor the business and regulatory environment affecting the collaborative economy in the EU. Available at: https://op.europa.eu/en/publication-detail/-/publication/79bee7ad-6d22-11e8-9483-01aa75ed71a1

[95] Ibid.

[96] Ibid.

exemption from social security contributions up to an income threshold of EUR 5,100.[97] In **Greece**, the 2017 Law has introduced several rules regarding taxation of short-term rentals.[98] In the **United Kingdom**, since 2017, there is a tax-free allowance of GBP 1,000 on earnings from collaborative economy platforms. Sector-specific tax benefits include the Seed Enterprise Investment Scheme for collaborative finance and the "rent a room scheme", targeted at short-term rentals which allows peer providers to earn up to GBP 7,500 a year tax-free.[99] In **Croatia** and **Malta**, there are some tax simplifications for the short-term accommodation sector.[100]

In the territories screened for this study, the presence of a couple of civil servants within the Municipality/regional or national government, with already some knowledge in the field and prior contacts, has been deemed very helpful. These actors could be gathered in a special small unit within the local or regional government tasked with performing this mapping of the present initiatives. Having a dedicated body, hub or platform overseeing the work on the circular economy and the collaborative economy has been acknowledged as helpful for the regulatory process as well as communication with the initiatives. It is also in line with the need to adopt a holistic approach linking different issues related to the circular and collaborative economy (knowledge, regulation, funding).

A structure such as Circular Flanders mainstreams the circular economy onto other departments of the region, and at the same time gathers knowledge of collaborative economy business models (car sharing, tool sharing, etc.) and their potential to achieve circular economy goals. Following the example of Circular Flanders (see the box below), the main tasks of this entity could be:

- Facilitating the work within the municipality/region and building communication bridges between the various departments which are not used to work together in the area of the Urban Circular and Collaborative Economy;
- Finding solutions to address the existing systematic gaps; providing new legislative proposal (e.g. experimentation) to the current legal shortcomings;
- Identifying and mapping of all possible funding possibilities of various departments to streamline them; and creation awareness activities on these funding instruments among the initiatives so that those needing to know about the possibilities are aware of them (see also the next section);

[97] Under the condition that the transaction is between peers and it is intermediated by registered platforms. See: Loi du 18 décembre 2016 organisant la reconnaissance et l'encadrement du crowdfunding et portant des dispositions diverses en matière de finances. Available at: http://www.ejustice.just.fgov.be/cgi_loi/change_lg.pl?language=fr&la=F&table_name=loi&cn=2016121801

[98] Article 39 A, Income Tax Code (Law 4172/2013) When the property is leasing furnished without the provision of any service (other than the provision of bed linen), taxation is: 0 - 12,000 euros: 15% 12,0001 - 35,000 euros: 35% - 35,001 EUR or more: 45%.

[99] UK Government (2016), Budget 2016, 7.1 table 2.1 section 73 and www.SEIS.co.uk and https://www.gov.uk/rent-room-in-your-home/the-rent-a-room-scheme

[100] In Croatia there is a lump sum tax of HRK 300 per bed or HRK 350 per accommodation unit for providers who do not provide more than 20 beds in a room, apartment or holiday houses, or, alternatively, more than 10 accommodation units. Source: 4liberty.eu. The Regulatory Framework of the Collaborative economy in Central and Eastern Europe. Available at: http://4liberty.eu/wp-content/uploads/2017/09/The-Regulatory-Framework-of-the-Collaborative-Economy-in-Central-and-Eastern-Europe.pdf

- Promoting cooperation between the different members of the network, social entrepreneurs, academia, etc.;
- Promoting innovative pilot projects at the municipality/regional level.

This entity could also gather around the table not only public authorities, but also researchers, industry representatives, NGOs.

Moreover, the form this entity could take could depend in function of the cities and regions' approach to policymaking. It could take the form of an interdepartmental body, such as Circular Flanders, or a less-structured platform or hub, such as the European Cluster Observatory at European level. For some other territories they could be organised like local or regional bodies supporting small or social businesses. These bodies are designed to help small businesses to make the right connections and to deal with different administrative procedures and institutions. This platform could be a unit for small and medium not-for-profit organisations with a broader remit then just inducing local economic activity.

The box below provides the example of an established platform bringing together the collaborative with the circular economy.

At the regional level, the structure of **Circular Flanders** has been acknowledged as very helpful to frame the region's strategy around circularity and foster the initiatives helping to achieve circular economy goals. Circular Flanders is a transversal hub for promotion and implementation of circular economy policies in Flanders with six core activities i) networks (bringing a variety of partners together); ii) lab (assistance of pioneers); iii) policy (aligning and connecting various policy agenda relevant for circular economy at the local, regional, federal, EU or international level); vi) knowledge (policy relevant research, and dissemination of acquired knowledge); v) innovation (encouraging innovation and entrepreneurship towards circular economy); vi) embedding (principals and best practices of the circular economy are utilised and embedded in Flemish companies, civil society organisations, education, local administrations, and citizens).[101] Its activities are based on a partnership of governments, companies, civil society and the knowledge community. Circular Flanders encourages the use of the collaborative economy to foster the (e.g. through car sharing, exchange of tools, etc.)

Even if not designed for the promotion of the Urban Circular Collaborative Economy as such, those two local and regional organisations foster the development of the initiatives in practice by emphasising the collaborative economy as a tool to achieve the transition to the circular economy.

The development of circular strategies – and the achievement of urban and circular lifestyles – passes by the realisation that circularity can and should also be achieved in less traditional sectors (i.e. construction). According to the circular economy strategy of the Municipality of Maribor, the transition into circular management of resources shall be achieved through "cooperative economy networks". These networks refer to the collaboration between different representatives of civil society, such as enterprises, NGOs, and population from various age ranges, or between different sectors of the economy with the purpose of managing the city's resources in a circular way.

An example of the cooperative economy network model in the field of circular economy is the Wcycle Institute. Five companies, which are wholly or partly owned by the municipality, formed

[101] Circular Flanders, Everything about Circular Flanders, available at: https://vlaanderen-circulair.be/en/about-us

a separate and unique umbrella project to implement the transition into the management of public services in a circular way.

b) Experimentation and piloting.

The study has shown that, in many cases, the current legal and administrative system is not tailored to the needs of circular and collaborative initiatives. At the same time, profound systemic changes are time and resource-consuming and they may not be politically feasible.

One way around this would be the creation of pilot and experimental actions focused on promising local and regional Urban Circular Collaborative Economy initiatives. Such pilots could provide a small-scale "seed space" for specific initiatives that are particularly in line with local and regional objectives to develop to a sufficient size and resources before they are exposed to the local and regional regulatory framework. In addition to fostering the incubation of relevant initiatives, such an experimental approach would allow policy makers to gather depth knowledge of bottlenecks and to develop a working relationship with the initiatives.

This approach is also increasingly used in innovation policymaking with testbeds, innovation labs, etc. This has been also done by Porto with Scale Up Porto, or the city of The Hague with some projects (Made in Moerwijk or the KledingBank).

The creation of such seed spaces could also be coupled with different forms of collaboration between the relevant Urban Circular Collaborative Economy initiatives and local policy makers, e.g. through public-private partnerships such as in Greece with the KIPOS3 community garden and the Sifnos island energy cooperative.

The importance of experimentation has been emphasised by collaborative economy experts such as the P2P Foundation. Their latest report introduced in Chapter 1.2.2 argues that efforts in prototypal and experimental forms in policymaking are essential. These solutions would be located much more "internally," within the system of production itself and not replace external regulation, which still has a role, but rather complement it or trigger it at later stage.

The **city of Umeå in Sweden** provides infrastructures to test projects as part of their Sharing City initiative. These spaces are called Urban Living Labs and they give access to a variety of spaces, e.g. a garage that is a spot for sharing mobility solutions, and a space for testing sharing of green spaces. The testing of methods for co-determination and co-creation is embedded within the city's plan.[102]

c) Active guidance and support.

Administrative burden has been identified by the initiatives as a key obstacle to their growth. In the case cities and regions cannot act directly to minimise it, an alternative is to provide active guidance on the administrative steps and regulatory requirements for setting up an initiative. The research has shown that most initiatives are small and have limited resources, and that such guidance could help them overcome the obstacles they encounter. In some regions, there

[102] https://www.umea.se/download/18.25332a9916cb142742197a6/1567417902144/UK_Oversiktsplan_2018-ENG_low_resolution.pdf

is already a certain level of such support, for instance in Flanders (establishment of address for questions[103] and list of best practices[104]). This support could be tailored to the needs of the Urban Circular Collaborative Economy initiatives to take into account specific issues they might encounter (e.g. lack of stable resources, low business and entrepreneurship orientation, lack of long-term vision). In most cases such support already exists for SMEs, but this support does not exactly fit the hybrid character of the Urban Circular Collaborative Economy initiatives (smaller and for benefit).

Lack of knowledge of funding opportunities and complexity of the application procedures have been identified as another challenge. Cities and regions could provide information on the existing funding opportunities and review applications for support. Key actors for providing this support could be chambers of commerce, as identified by previous research on the collaborative economy,[105] platforms for social entrepreneurs, or the dedicated body or platform responsible for overseeing and implementing the work around the Urban Circular Collaborative Economy initiatives in the recommendation above (such as Circular Flanders – see point a)).

Chambers of commerce and platforms for social entrepreneurs could be useful interlocutors in order to "professionalise" the initiatives and help them become financially sustainable. Being member of such an organisation can be a way for them to increase their visibility in the business community, access to resources and training activities, and benefit from some discounts e.g. for health insurance, office supplies, etc. These organisations could be encouraged, on the other hand, to further extend the scope of their activity to social enterprises and non-for-profit/for benefit entities that achieve cities and regions' policy objectives.

Cities and regions could establish a small help desk responsible for answering to questions related with public procurement, grants and funding schemes, or, if such entity already exists, ensure that this help desk is knowledgeable about questions on the Urban Circular Collaborative Economy (i.e. can also deal with financial support for non-for-profit entities).

Some examples of active support of circular and collaborative economy can be found below.

The **Chamber of Commerce of Paris[106]** is in close contact with companies involved or interested in the circular economy through "Plato", the network of entrepreneurs it manages.

In Barcelona, the entrepreneurship programme **Communificadora[107]** focuses on the promotion of collaborative economy initiatives. The programme provides training, advice and guidance for the viability and sustainability of projects.

In Belgium, the platform **BE.Impact[108]** offers support to social entrepreneurs by gathering knowledge and resources on the topic. It also answers to the questions social entrepreneurs might have on a variety of topics and redirect them to the most relevant interlocutors at local, regional and national level.

[103] https://www.vlaanderen-circulair.be/en/contact
[104] https://www.vlaanderen-circulair.be/en/cases-in-flanders
[105] See European Commission (2018). https://publications.europa.eu/en/publication-detail/-/publication/79bee7ad-6d22-11e8-9483-01aa75ed71a1/language-en/format-PDF/source-72448577
[106] https://www.entreprises.cci-paris-idf.fr/web/club/reseau-plato
[107] http://ajuntament.barcelona.cat/tempsicures/en/noticia/offer-of-programs-and-training-workshops-for-initiatives-of-social-and-solidarity-economy
[108] https://fr.be-impact.org/

4.3 Better funding

One last important set of challenges that the initiatives reported is related to funding. Urban Circular Collaborative Economy initiatives have frequently emphasised lack of financial resources as the main difficulty they encounter. This does not relate only to the overall availability of financial support. The interviewed partners also emphasised that the structure of funding was not always fitting to their needs. As discussed before the initiatives have strong differences in respect to investment needs and also in their ability to attract market incomes. This is problematic when initiatives make a sustained contribution to public policy objectives but cannot win the necessary funding on a private market. How and in which form public financial support is provided will be an important success factor and the regions and cities can undertake the following steps to fund the initiatives they want to foster:

a) Understanding and management of funding needs.

When relevant initiatives have been identified, there is a need to analyse both short-term and long-term funding needs. If an initiative is not able to fund itself in the longer-term, a plan for follow-up should be started and implemented early to avoid funding the build-up of initiatives that vanish quickly after the funding period. The initiatives differ also in the type and amount of start-up funding needed as some need to financial investment to start (e.g. tools for a makers workshop) others just need a room to meet. Moreover, the funding needs could be further aligned with the territorial policy objectives and sustainability challenges. Therefore, cities and regions could decide to finance the initiatives that promote a movement of change aligned with their territorial objectives in the longer term. For instance, the financing could prioritise initiatives addressing multi-dimensional issues. The funding decision should move from financing a number of individual projects without a clear impact chain, towards financing the one that creates momentum for a real change in the urban environment. For instance, the municipality of The Hague considers that a constructive investment could take a form of an experimental approach and should focus on ICE projects (**I**conic in itself; **C**arrier/enablers - enabling other projects to scale up; and **E**ntrepreneurial).

National, regional and local governments should also review, whether existing, relevant funding streams are accessible to the initiatives. Social objectives are anyway supported by government funding. It is therefore important that for example initiatives providing after school clubs for children from deprived areas are able to access the same funding that for-profit organisations are able to access. Reviewing the administrative setting of those funding streams and see whether obstacles exist is therefore an important point to make funding available.

When a good understanding of the funding needs has been developed, it will also be easier to combine local funding sources with national and EU funding. Very often national funding and EU funding is time limited (e.g. Horizon 2020) and focused on investments and using the local funding to fill in the gaps can make the funding system as a whole more efficient. Support in understanding how the different funding sources could lead to long-term funding for the

initiatives could be provided by the same organisation taking care of providing guidance to the initiatives and to apply to public funding, e.g. help desk as developed in Chapter 4.2.

Conjuntament in Barcelona[109] is a program supporting 24 projects related to the local economic development and launching initiatives from social, education, agroecology, consumption, exchange and cooperative fields, which are located in the Barcelona neighbourhoods. Crowdfunding campaigns taking part in this call will count on an important economic boost: for each euro provided to the projects by citizens, Goteo Foundation will donate one euro more.

As part of the Strategy **Milano Collabora** the city of Milan also used public tenders to find new projects about sharing economy. The city has opened a call for tenders from July 2019 until the end of 2020 dedicated to circular and sharing economy with a selection of issues/sectors following the Barcelona City Declaration of 2018. Three initiatives have been awarded for the moment.

b) Attract private funding

Many private, innovative funding mechanisms have been tested worldwide in recent years. Harnessing the opportunities of those type for the local city or region can be another important field of work for the local or regional authority. Innovative funding techniques such as crowdfunding (Kickstarter, Indiegogo or Kisskissbankbank, but also some focused on green initiatives such as StartSomeGood[110]) or social impact funding can for instance be considered. Some examples of impact investment platforms are, e.g. SINLOC[111] in Italy, LITA.co[112] in Belgium. These platforms use financing through stocks and bonds to leverage the growth of local businesses with social and environmental impact. Social and environmental performance indicators are used in order to select businesses. The Regen Network has developed the crucial concept of "ecological state protocols", which can be both used to verify the attainment of ecological (and social) impacts of the initiatives and put on a ledger for tokenisation and possible financing. Another example is the Common Good Economy approach, which focuses on impact accounting in terms of achieving recognised Common Good aims and having firms and productive entities compete to achieve positive impact. The interesting aspect for this study is that platforms are working with results-driven funding schemes which integrate the funding into the production function of the particular service (e.g. they fund not the rent of a room but services for homeless people).

Again, the role of public authorities here could be to provide guidance, tutoring or mentoring to direct Urban Circular Collaborative Economy initiatives to one of those platforms.

As part of the **Milano Collabora** the city of Milan also provides tutoring and mentoring to collaborative economy initiatives in how to apply to crowdfunding platforms and similar finance mechanisms. It also organises the "Civic crowdfunding initiative" to co-financing of projects with a social impact, which took place through the distributed collection of private funds (Forum PA 2017 award, Growing Award for Sustainable Development 2017, wellbeing City 2019 award).

[109] More details are available at https://fr.goteo.org/call/conjuntament and https://fr.goteo.org/call/conjuntament/projects.
[110] https://startsomegood.com/projects?category_id=9
[111] https://www.sinloc.com/en/
[112] https://be.lita.co

c) Create a market for initiatives with (green) public procurement.

Apart from funding, local and regional authorities could mobilise resources to create a market for the initiatives through public procurement. Green Public Procurement has been acknowledged by the European Commission as an important tool to achieve environmental policy goals relating to climate change, resource use and sustainable consumption and production and material has been produced in this regard.[113] There is a whole range of possible actions for local and regional public procurement bodies in order to favour small initiatives with circular economy goals: limit turnover requirements to allow to small initiatives to participate, encourage the creation of consortia to allow initiatives to team up, set criteria related to sustainability and resource savings, etc. Here again, public private partnerships have been identified as key players of such markets as they provide the opportunity for policy makers to team up with initiatives and achieve together the policy goals set above (see the examples of the energy communities in Greece).

Barcelona City Council passed Decree on sustainable public procurement in April 2019 which states that "Barcelona City Council promotes sustainable public procurement which includes social, environmental, ethical and innovation measures in the cause and purpose of the municipal contract and which guarantees the labour, social, and citizen's rights of the people who execute the public contract and of the recipients or users of said contract. Furthermore, said procurement should promote a local circular and sustainable economy, as well as foster the economic activity of local small, medium and micro- enterprises and, particularly, social enterprises".

As stressed notably in The Hague, the creation of networks for funding could be a way to promote the cooperation between various actors (initiatives, associations, universities, etc..) under the same projects; resources could be used to support more than one initiative and to promote rather cooperative approach than competition between entrepreneurs. Public authorities could promote meetings between beneficiaries to encourage exchange and cooperation between various stakeholders; this approach could foster an establishment of a long-term urban network economy (network of initiatives); creation of urban network economy having small entities becoming big is a crucial element of the sustainable urban economy, which would create a network of small, short and long-term, start-up entities.

d) Providing with other types of resources.

Very often, local and regional authorities have only limited funding opportunities. One way to provide initiatives with support is through in-kind resources or advantages. To foster the cooperation between initiatives and of the initiatives with other local partners regions and cities can link the funding to cooperation requests.

Examples for this could be letting of existing communal property for below market prices (as is the case for instance in **Prato** with unused buildings, by the Municipality of **The Hague** with the space for the food sharing initiative Lekkernassûh), or the offer of administrative support for free. With their local connections regions and local authorities can foster new connections

[113] See for instance the Handbook on Public Procurement (2016): https://ec.europa.eu/environment/gpp/pdf/Buying-Green-Handbook-3rd-Edition.pdf

with local academia or local businesses and with that bring more funding opportunities (research grants or business support) within reach.

Annex 1: Practical guide

Submitted in a separate document.

Annex 2: Case study reports

Submitted in a separate document.

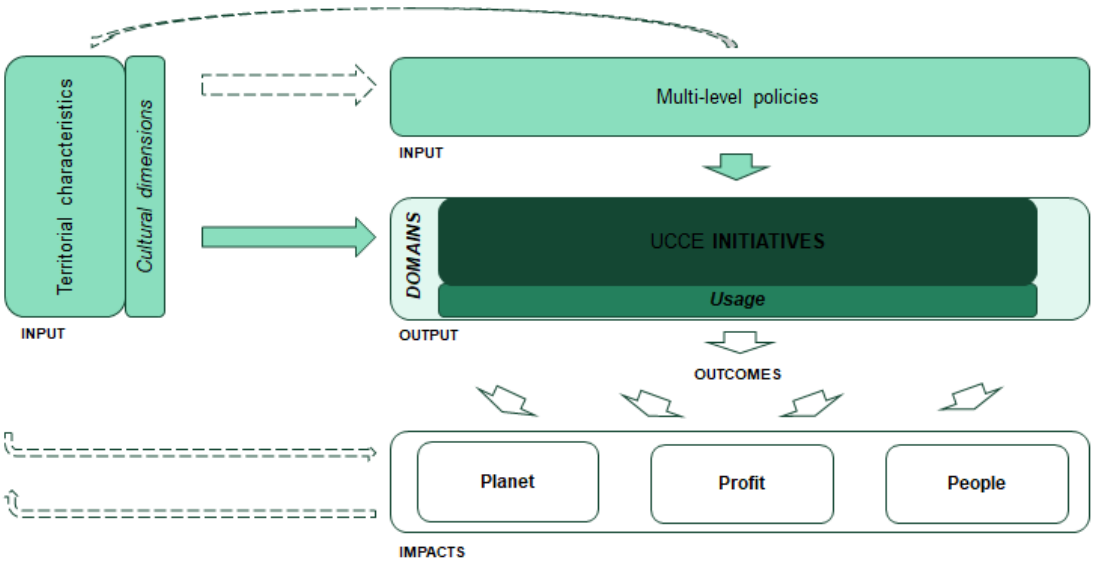
Annex 3: Criteria for the impact model and list of impact indicators by domain

Criteria for the impact model

The impact model measures the relationship between four elements:

- Urban Circular Collaborative Economy initiatives and their business, organisational or value creation model;
- Their usage;
- The characteristics of the territories;
- The policy framework at different levels (EU, national, local).

Figure 9: Impact model for the analysis of Urban Circular Collaborative Economy Initiatives



The first two elements, i.e. the territorial characteristics and the policy framework in place, are the **independent variables** (or input), the ones that are changed and whose effects on the dependent variables are measured. The last two elements, i.e. the nature of the Urban Circular Collaborative Economy initiatives and their usage, determine the key "domains" or draft typology that will serve to the design of the final classification. They form the **dependent variables** of the impact assessment (or output), i.e. the ones on which the impacts are measured.

Territorial characteristics and multi-level policies (input) affect the nature and usage of Urban Circular Collaborative Economy initiatives (output). This generates different outcomes, or drivers of impact, which in turn entail impacts on different levels of the "3Ps": the environment (Planet), economy (Profit), society (People).

The inputs and outputs form the different criteria that base the impact chain. They are explained in the following section.

1.1. Input variables

1.1.1. Territorial characteristics

It is assumed that both the nature and the scale of development of Urban Circular Collaborative Economy initiatives are influenced by the presence or absence of some “breeding ground” in the territories. The following territorial characteristics have been selected as they are deemed to affect the development of collaborative economy markets:

1. **Socio-demographic characteristics of the region,** i.e. age, gender and citizenship of the local population. This also includes economic indicators such as income level and poverty rate, and education indicators such as the level of access to advanced education as in the EU-SPI (tertiary education attainment, tertiary enrolment, and lifelong learning).
2. **Labour market situation.** The situation of the local labour market situation, i.e. employment, long-term unemployment, including the one of men, women, youth population and migrant population, the level of freelance work, and employment generated by the circular economy (e.g. employment for material providers and technology providers in a circular economy, number of persons employed in companies associated with Circular Economy Business Models).
3. **Digital and innovation profile.** Whether the territory is well connected to the Internet (Internet access, broadband access), has a large proportion of early adapters of digital solutions and/or a population keen on trying new business models (Internet use) and/or users of collaborative economy platforms. This part also informs on whether the territory belongs to a region with a good score in the Regional Innovation Scoreboard[114] assessing the presence of an innovation-friendly environment, the level of investment, the presence of innovation activities and their impacts.
4. **Market size of the incumbent traditional markets.** Development of the incumbent markets (i.e. tourism, hospitality/food, taxi industry, retail sector, gas market, electricity market) in terms of economic size (i.e. turnover).
5. **Competition for space.** This is measured by the population density, the share of unoccupied dwellings, the share of unoccupied office space, and underused urban space.
6. **Level of development of and potential for the circular economy.** This is measured by production and consumption indicators (total waste, domestic material consumption per capita), waste and water management (recycling rate and re-use of waste water).
7. **Cultural factors.** This is measured by the region’s score in the EU Social Progress Index (EU-SPI) in the personal rights indicator (trust in the political and legal system and in the police, quality and accountability of government services) and the tolerance

[114] https://ec.europa.eu/growth/industry/innovation/facts-figures/regional_en

and inclusion indicator (impartiality of government services, tolerance for immigrants, minorities and homosexuals, attitudes towards people with disabilities, gender gap, presence of community safety net). A last indicator is the score of the country in the individualism vs. collectivism indicator of the Hofstede Insights index. As cultural indicators are very specific to each territory, this dimension will also be tackled in a more qualitative way during the interviews.

1.1.2. Multi-level policies

As the territorial characteristics, policies can affect Urban Circular Collaborative Economy initiatives by facilitating or hindering their development. These areas specifically concern the collaborative economy specifically, or broader areas with an effect on the collaborative economy (e.g. the ease of starting a business), as follows:

1. **Regulations.** Presence of regulations on the collaborative economy which aim at giving more clarity to collaborative economy markets, as well as protecting consumers and providers. These include regulations that define the collaborative economy (e.g. regulations on car sharing, ridesharing, short-term rentals, etc.) and/or market access requirements in the sectors with strong incumbent markets, i.e. accommodation, food, transport (taxi), retail, and energy. Such regulations help reduce the uncertainty around collaborative economy markets but could potentially prevent providers of collaborative economy services to enter those markets.
2. **Presence of support for entrepreneurs and/or start-ups.** This support can be financial, e.g. grants, or non-financial, e.g. training activities, provision of information and guidance, and can concern collaborative economy activities or the business ecosystem as a whole. The availability of a specific tax scheme, e.g. tax cuts for the collaborative economy, has been selected as a final indicator which indirectly supports the creation of initiatives.
3. **Education and training.** This measures the availability of a training scheme for digital skills.
4. **Ease of the dealing with the administration.** This is measured by the level of online interaction with public authorities (from the citizens' side) and the number of days necessary to start a business (from the business community's side). The presence of mechanisms to facilitate tax collection (e.g. between Uber drivers in Estonia, or Airbnb and the tourist tax in some cities) has been selected as a final indicator.
5. **Availability of initiatives on the circular economy and/or the collaborative economy** (e.g. roadmap, policy paper, guidance, etc.)

In order to assess the multi-level dimension of these policies, these five aspects will be enquired at the local and national level.

1.2. Output variables

1.2.1. Business, organisational or value creation models of Urban Circular Collaborative Economy initiatives

The collaborative economy is active in different markets or sectors, involves different types of transactions, and generates revenues for different types of actors. These characteristics are deemed to influence the possible impacts of the initiatives, in particular the following elements:

- ***Elements with an economic impact potential:***

1. **Sector and underlying asset being shared.** The study covers the main collaborative economy markets as well as the ones relevant from the perspective of the circular economy (with a high propension to re-use and recycle): transport, accommodation, goods, food and waste, and energy.
2. **Transaction relationship.** Whether the transaction is conducted between peers (P2P), businesses and individuals (B2C), businesses (B2B) or sometimes involving public sector institutions (public sector to consumer/business).
3. **Transaction mode.** Whether the transaction involves sharing, swapping, renting or selling.
4. **Type of market player.** Whether the market is dominated by a few number of players or if there is a co-existence of multiple players.
5. **Data.** The type of data that is being transacted (personal, e.g. name, location, consumer preferences, peer reviews and ratings, price & value of transactions/non-personal, e.g. aggregated value of transactions), and which use is made of the data (internal, e.g. to optimise internal processes, produce marketing materials, etc. and/or sold to third parties).

- ***Elements with a social impact potential:***

6. **Hiring of workers.** The extent to which the activity requires to hire workers, either for:
    a. Coordination only: the initiative requires workers only to coordinate the transaction, e.g. the IT staff of the online platform;
    b. For maintenance of asset and coordination: the initiative requires workers to maintain the asset that is shared and to coordinate the transaction, e.g. the staff needed to repair the bikes of a bike sharing scheme;
    c. For service and coordination: the initiative requires workers to provide a service, e.g. the people renting their flat on Airbnb.
7. **Origin of the initiative.** Whether the organiser of the initiative is headquartered inside or outside the territory.

8. **Ownership of the initiative.** Whether the main owner of the initiative is private organisation, a public authority, or if the initiative stems from a partnership between different types of actors.

9. **Financing:**

    a. **Source.** Whether the initiative generates money through its activities (transaction or subscription fees), is financed by private investment (e.g. venture capital) or public money.

    b. **Destination.** Whether the profit is reinvested in the local activity and/or contributes to local development or leaves the territory. This can be measured by whether the initiative pays taxes in the territory, and re-invests in local assets.

- ***Elements with an environmental impact potential:***

10. **Circular economy business model.** How the initiative supports the circular economy in the territory: long-life design, extending product and resource value, encouraging sufficiency and shifting utilisation patterns, access, sharing and performance models.

Table 6: The four overarching Circular Business Models

CE Business Model	Description	Contribution to a CE	Examples
Long Life Design	Models focused on delivering long-life-products, supporting design for durability and repair.	▪ Supporting long-life-products through design for repair, refurbishment and remanufacturing – focus on product design. ▪ Essential part of the company's normal design ethos, often linked to the concept of eco-design and geared towards disassembly.	Modular Design, Cradle-to-Cradle Design, Eco-Design
Extending Product and Resource Value	Exploiting residual value of products.	▪ Exploiting the residual value of products. ▪ Collecting and reselling refurbished products and / or components. ▪ Often reffered to as ‚closing the loop'.	Remanufacturing, refurbishment, upcycle, take-back systems
Encourage sufficiency and shifting utilisation patterns	Seeking to reduce end-user consumption and delivering utilities virtually rather than materially	▪ Supporting sufficiency and shifting utilisation patterns – focus on consumers. ▪ Digitising business products and services. ▪ Shift in demand patterns through technology as consumers choose virtual products or services	Pay-per-Service, Re-commerce, reuse cafés
Access, Sharing and Performance Model	Providing the capacity of services to satisfy user needs without needing to own physical products	▪ Manufacturer or service provider retains ownership of the product. ▪ Sharing models seeking to reduce under-utilisation of products, facilitated by digital technology and social platforms.	Car-sharing, Carpooling, tool sharing, office shares

Source: ESPON CIRCTER (2019).

1.2.2. Usage

The nature and size of the impacts of the initiatives in the territories depends on their usage. Usage patterns can be influenced by the following factors:

1. **The size of the activity,** i.e. the number of people involved in collaborative economy activities and the revenues generated by them. This is measured by: the number of initiatives present in the territories; the number of users; the number of potential users (e.g. visitors on platforms); the number of persons employed directly (e.g. direct employees of the initiative) or indirectly (e.g. providers of the service); the number of goods and/or services created/sold; the average price of a good and/or service created.

2. **Socio-demographic characteristics of users.** This is measured by the population age structure, gender structure, citizenship status (compared with the one of the average population), income level and education level.

3. **Alternative activity.** Whether the activity is only enabled through sharing or whether it replaces another economic activity because of cheaper prices or higher convenience (e.g. rides-on-demand platforms with taxi services, or short-term rentals with hotels). The common ground for comparison between the sharing and the traditional activity is the function of the activity, i.e. the purpose that it serves ultimately.

Impact indicators per domain

In order to allow comparisons across domains we have grouped impact indicators into groups (environmental, economic, social) and sub-groups which are common across all domains. The indicators within each sub-group are however distinct depending on the domain and the initiative assessed. This process allows to have a common ground to compare indicators, but to keep the specificities of each domain and initiative within this domain.

We have grouped impact indicators in the following way:

Table 7:Impact groups and sub-groups

Environmental impacts	Economic impacts	Social impacts
• Impact on resource use • Impact on waste management/creation • Impact on space/suburbanisation • Impact on awareness of environmental matters • Other environmental impacts generated by the initiative	• Impact on local revenues • Impact on local job opportunities • Impact on prices • Impact on innovation/skills • Other economic impacts generated by the initiative	• Impact on poverty • Impact on social cohesion • Impact on quality of life of citizens • Other social impacts generated by the initiative

Each impact type has a driver (also called “outcome”). Outcomes can relate to:

- Change in habits/consumption patterns;
- Change in service model/production patterns;
- Change in the usage density/resource use of the good/service;
- Enablement of local economic or non-market activity;
- Change in the use of technologies/in the use of skills;
- Change in the level of access of good/services;
- Interaction between citizens which provide and/or use the service.

As for the impacts, specific outcomes can differ depending on the domains and initiatives assessed. The sub-sections below present the relation between these outcomes and impacts.

Sharing outdoor urban space

The collaborative use of urban space through community gardening, or re-use of parking space, leads to the following possible outcomes:

- Change in the usage density (as more people use a land that would have been unused or less used otherwise);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Enablement of local non-market activities (shared gardens, cultural activities, etc.);
- Impacts on the level of access to outdoor urban space (as people access to space that they would not have access to otherwise);
- Enabled interactions between citizens which providing or using the service.

This ultimately creates different impacts:

1. ***Environmental impacts***

- Impact on space/suburbanisation: change to suburbanisation due to changed attractiveness (environmental impacts on transport, pollution and noise);
- Impact on awareness of environmental matters (as initiatives promote activities with potential environmental benefits);
- Impact on biodiversity from new green spaces: less heat islands, water retention, etc.

2. ***Economic impacts:***

- Impact on local revenues (gain from the activity for providers; potential loss compared with the traditional economy);
- Impacts on local job opportunities (jobs generated by the activity; potential loss in the traditional economy; change in the type of jobs generated);
- Impact on prices (change in the price of land as it is used more intensively);

3. ***Social impacts***

- Impact on poverty (money saved for users, increased access to good quality products, potential social inclusion);
- Impact on social cohesion (due to more contact between people, potentially from different nationalities or different social backgrounds);
- Impact on the quality of life of citizens (because of better use of space; on the other hand, potential disturbances in neighbourhoods).
- Social impacts of the activities enabled in the space (access to culture, awareness of local activities, potential increase of ownership of common/public space, potential decrease in crime due to better integration of citizens, etc.);
- Impact on health and health poverty (for community gardens: health effects of more green spaces, better quality food, etc.).

Table 8: List of impact indicators

Impacts	**Impact type**	**Indicators**
• Suburbanisation	Environmental	• People for whom the inner city has become more or less attractive due to the activity (survey) • Rising price differential of inner city compared with outskirts (statistics)

• Environmental awareness	Environmental	• Activities which foster environmental awareness (survey)
• Impact on biodiversity from new green spaces	Environmental	• Biodiversity programmes or actions plans (desk research)
• Impact on local revenues	Economic	• Earning generated through the activity (desk research/survey) • Earning lost in competing activity (e.g. retail, parking rental) (desk research/survey)
• Impact on local job opportunities	Economic	• Number and type of jobs in the initiative (survey); compared to • Number and type of jobs in competing services (statistics)
• Impact on prices	Economic	• Average price per square meter of collaborative space (survey/desk research); compared to • Average price per square meter for non-collaborative space (statistics)
• Impact on poverty	Social	• For community gardens: Overall saving of users per month or year in the cost of food (survey) • Number or proportion of people without access to the traditional service using the collaborative service (survey) • Number of former long-term unemployed people providing the service (survey)
• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey) • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)
• Quality of life in cities	Social	• People considering that the initiative increased the quality of life in the city (survey)
• Social impacts of the activities enabled in the space	Social	• If the initiative is a social enterprise/undertaking: What are the social benefits of the use of this space (e.g. impact on crime, public ownership or other)? (survey)
• Impact on health and health poverty	Social	• For community gardens: health effects of more green spaces, better quality food, etc. (literature and survey)

Sharing indoor urban space

The collaborative use of indoor space (e.g. renting of rooms or flats, office space, or leisure space), leads to the following possible outcomes:

- Change in usage density (as more people use building space that would have been unused or less used otherwise);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Enablement of local non-market activities (tutoring scheme, youth clubs, cultural activities, etc.);
- Impacts on the level of access to indoor urban space (as people access to space that they would not have access to otherwise);
- Enabled interactions between citizens providing or using the service.

This ultimately creates different impacts:

1. ***Environmental impacts***

- Impact on space/suburbanisation: change to suburbanisation due to changed attractiveness (environmental impacts on transport, pollution and noise);
- Impact on awareness of environmental matters (as initiatives promote activities with potential environmental benefits);
- Impact on urban regeneration – reduced construction of new buildings and optimal use of existing ones;

2. ***Economic impacts:***

- Impact on local revenues (local income created by the activity; on the other hand potential damage on other economic activities, e.g. hotels);
- Impact on local job opportunities (or created jobs or extraction of jobs/funds from other local markets, e.g. hotels);
- Impact on prices (change in the price of buildings as it is used more intensively);

3. ***Social impacts:***

- Impact on poverty (money saved through accessing a cheaper space);
- Impact on social cohesion (due to more contact between people, potentially from different nationalities or different social backgrounds);
- Impact on the quality of life of citizens (because of better use of space; on the other hand, potential disturbances in neighbourhoods);
- Social impacts of the activities enabled in the space (access to culture, awareness of local activities, etc.);
- Potential increase of ownership of common/public space;
- Impacts on safety (potential decrease in crime due to better integration of citizens, etc.).

Table 9: List of impact indicators

Impacts	**Impact type**	**Indicators**
• Suburbanisation	Environmental	• People for whom the inner city has become more or less attractive due to the activity (survey) • Rising price differential of inner city compared with outskirts (statistics)
• Environmental awareness	Environmental	• Activities which foster environmental awareness (survey)

• Urban regeneration	Environmental	• Number of unused building brought into use with initiatives (survey) = number of saved new buildings
• Impact on local revenues	Economic	• Earning generated through the activity (desk research/survey) • Earning lost in competing activity (desk research/survey) • Number of tourist nights in collaborative accommodations (survey); and • Tourist spending per day (desk research)
• Impact on local job opportunities	Economic	• Number and type of jobs in the initiative (survey); compared to • Number and type of jobs in competing services (statistics)
• Impact on prices	Economic	• Average price of the service (desk research/survey); compared to • Average price of the incumbent service (desk research/interviews)
• Impact on poverty	Social	• Number or proportion of people without access to the traditional service using the collaborative service (survey) • Number of former long-term unemployed people providing the service (survey)
• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey) • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)
• Quality of life in cities	Social	• People considering that the initiative increased the quality of life in the city (survey)
• Social impacts of the activities enabled in the space	Social	• If initiative is a social enterprise/undertaking: What are the social benefits of the use of this space (e.g. impact on crime, public ownership or other)? (survey)

Sharing goods and tools

The development of good sharing initiatives (e.g. exchange of tools, clothes swapping) leads to the following possible outcomes:

- Change in consumption patterns (number of new purchases);
- Change in usage density and lifetime of the good (shared/repaired vs. non-shared);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Change in skills (e.g. learning of repair skills);
- Enabled interactions between citizens providing or using the service

This ultimately creates different impacts:

1. ***Environmental impacts***

- Impact on resource use: change in resource use due to more repairs or less new purchases (and with that production);
- Impact on waste creation: change in waste creation due to more repairs or less new purchases (and with that production);

2. ***Economic impacts***

- Impact on local revenues;
- Impact on local job opportunities;
- Impact on prices;

3. ***Social impacts***

- Impact on poverty;
- Impact on social cohesion;
- Impact on skills;
- Impact on safety.

Table 10: List of impact indicators

Impact	**Impact type**	**Indicators**
• Resource use (less resources used for new tools)	Environmental	• Resource used per new tool (literature) • Lifetime of a tool (literature)
• Waste creation (less waste from the creation of additional tools as they are shared)	Environmental	• Number tools not produced due to the initiative/tool sharing(survey/literature) • Waste created per new tool (literature) • Lifetime of a tool (literature)
• Impact on local revenues	Economic	• Earning generated through the activity (desk research/survey) • Earning lost in competing activity (desk research/survey)
• Impact on local job opportunities	Economic	• Number and type of jobs in the initiative (survey); compared to • Number and type of jobs in competing services (statistics)
• Impact on price	Economic	• Price of a tool in the tool bank (survey) • Price of a tool (desk research)
• Impact on poverty	Social	• Overall saving of users per month or year (survey)

		• Users not having access to the tools without the initiative (survey) • Number of long-term unemployed people employed by the initiative (survey)
• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey) • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)
• New skills	Social	• Number of attendants of repair cafés sessions (survey)
• Impact on safety	Social	• Number of accidents with use of shared tools (survey)

Sharing food

The development of initiatives in the food sector (e.g. food cooperative, food redistribution networks, food and meal sharing) leads to the following possible outcomes:

- Change of service model (from retail to food cooperative, smaller supply chain);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Change in level of interactions between citizens.

This ultimately creates different impacts:

1. Environmental impacts

- Impact in resource use: change in resource (plastic, water, soil);
- Impact on waste creation: change in waste creation (plastic, food);

2. Economic impacts

- Impact on local revenues;
- Impact on local job opportunities;
- Impact on prices: change in price of food (cheaper good quality food, but potentially more expensive than classic supermarkets);

3. Social impacts

- Impact on poverty;
- Impact on social cohesion;
- Impact on health and health poverty (better quality food).

Table 11: List of impact indicators

Impact	**Impact type**	**Indicators**
• Resource use (plastic, water, soil)	Environmental	• Amount of food sold without plastic packaging (survey)
• Waste creation (plastic, food)	Environmental	• Amount and type of waste saved by the initiative (survey) • Amount of food kept useable by the initiative (that would have been wasted otherwise) (survey)
• Impact on local revenues	Economic	• Earning generated through the activity (desk research/survey) • Earning lost in competing activity (if any) (desk research/survey)
• Impact on local job opportunities	Economic	• Number and type of jobs in the initiative (survey); compared to • Number and type of jobs in competing services (statistics)
• Impact on prices	Economic	• "Market value" of food distributed (desk research/survey) • Market value of food distributed by retailers (literature/interviews)
• Impact on poverty	Social	• Overall saving of users per month or year (survey) • Users not having access to good quality food without the initiative (survey) • Number of long-term unemployed people employed by the initiative (survey)

• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey); or • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)
• Impact on health poverty	Social	• Health effects of consuming better food (due to higher food budgets – literature)

Sharing organisations as cooperatives

The development of cooperatives (e.g. energy, waste) leads to the following possible outcomes:

- Change in business model/production pattern (makes citizens participate in the production; involves them in economic decisions in potentially important markets);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Recycling of waste / more regenerative power capacity or other environmental outcomes
- More interactions between citizens.

This ultimately creates different impacts:

1. ***Environmental impacts***

- Depending on the initiative: production of green energy, recycling of waste, etc.;

2. ***Economic impacts***

- Impacts on local revenues;
- Impact on local job opportunities;
- Impact on prices;

3. ***Social impacts***

- Impact on poverty;
- Impact on social cohesion;
- Less hierarchical organisations and more agency.

Table 12: List of impact indicators

Impact	**Impact type**	**Indicators**
• Less environmental pollution	Environmental	• Additional capacity in kwh of renewable energy as part of the energy produced in the territory (survey) • Tons of waste recycled as part of the initiative (survey) • Litres of rainwater recycled or re-used as part of the initiative (survey)
• Impact on local revenues	Economic	• Earnings generated by the activity (survey) • Earning lost in competing activity (if any) (desk research/survey)
• Impact on local job opportunities	Economic	• Number of jobs created by the service (survey)
• Impact on prices		• Price of the service (desk research/interviews); compared to • Price of traditional providers (desk research) • Expected price stability over time (survey); compared to • Comparison of price stability (desk research/interview)
• Impact on poverty	Social	• Overall saving of users per month or year (survey) • Number of former long-term unemployed people providing the service (survey)

• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey); or • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)
• Less hierarchical organisations	Social/Political	• Number of decision makers (participant in the decision board for instance) in the cooperative (survey) compared to • Number of decision makers in a business model from the incumbent sector (literature)

Sharing transport

The development of transport initiatives (e.g. bike sharing, car sharing, ridesharing, ride-hailing) leads to the following possible outcomes:

- Change in transport patterns (change from individual car to shared car vs. change from public transport to shared car or from bike to shared car; overall increase of mobility);
- Change of service model (from the provision of professional car rental or ride service to the sharing of a car or a ride);
- Change in infrastructure (bike lanes vs. roads);
- Enablement of local economic activity (as these initiatives generate revenues and/or provide some jobs);
- Use of more advanced technologies (use of platforms, use of more environmentally friendly technologies);
- Change in the interactions between citizens (more interactions because of sharing models);

This ultimately creates different impacts:

1. ***Environmental impacts***

- Change in waste creation (less waste from the creation of additional cars/bikes as they are shared, but additional waste generated by the need for changing electric batteries for instance);
- Change in air quality and CO2 emissions (less air pollution only if new transport patterns reduce either the amount of traffic or the pollution intensity of traffic due to cleaner technologies);
- Change in resource use for new cars/bikes;
- Change in efficiency of space use (better use of public space, especially parking space; on the other hand, possible disturbance, e.g. floating electric bikes/scooters left on the streets);
- Suburbanisation (more people living in the suburbs as they can commute more easily; less people living in the suburbs as quality of life in the cities increase);

2. ***Economic impacts***

- Impact on local revenues;
- Impact on local job opportunities;
- Impact on prices;
- Faster technology deployment;

3. ***Social impacts***

- Impact on poverty and access to transport (because of affordability);
- Impact on social cohesion (due to more contacts between citizens);
- Impact on quality of life in cities (because of less pollution, increased mobility; on the other hand potential disturbances);
- Impact on safety (increased safety because possibility to track rides; decreased safety because of lack of platform responsibility in case something goes wrong).

Table 13: List of impact indicators

Impacts	Impact type	Indicators

• Waste creation	Environmental	• Number of cars or bikes in use in the initiative (survey) • Number of private cars or bikes replaced due to car sharing/ride sharing (literature/survey) • Tons of waste resulting from shared cars/bikes (survey) • Tons of waste resulting from normal cars/bikes (literature)
• Change in air quality and CO2 emissions	Environmental	• Car km of initiative per year for shared cars/bikes/scooters etc. (survey); • Car km alternative transport mode per year (survey); • CO2 emissions per km for transport modes (literature); • Air emissions per km for transport modes (literature)
• Resource use for cars/bikes	Environmental	• Tons of material used to produce new cars/bikes (literature)
• Suburbanisation	Environmental	• People for whom the inner city has become more or less attractive due to bike sharing/car sharing/ridesharing/ride-hailing services (survey)
• Impact on local revenues	Economic	• Revenue of providers of initiatives (from carsharing, ridesharing and ride-hailing) (survey); compared to • Revenues of competing providers (taxi drivers) (statistics)
• Impact on local job opportunities	Economic	• Number and type of jobs in the initiative (survey); compared to • Number and type of jobs in competing services (statistics)
• Impact on prices	Economic	• Average price of a ride (carsharing, ridesharing and ride-hailing) compared to; • Average of competing service (car rental, train, taxi)
• Faster technology deployment	Economic	• Number of initiatives using a mobile app (survey)
• Efficiency of space use	Social	• Number of parking spots saved due to car sharing (literature); and • Average value of land in city (desk research)
• Impact on poverty	Social	• Number or proportion of people without car or public transport access using the service (survey) • Number of former long-term unemployed people providing the service (survey)
• Impact on safety	Social	• Number of accidents in shared/non-shared transport (literature)
• Quality of life in cities	Social	• People considering that the initiative increased the quality of life in the city (survey)
• Social cohesion	Social	• Neighbours who got to know each other better due to initiative (survey); or • Number of transactions requiring meeting in person as part of the initiative (desk research) • Profile of members/users of initiatives (age, gender, nationality, employment situation) (survey)

Annex 4: Literature review

Submitted in a separate document.

Annex 5: Main take-aways of the workshops

Territory	Date	Take-aways
Flanders	13/09/2019	It is difficult to Urban Circular Collaborative Economy initiatives to equally draw the attention of all levels of the population. Therefore, the potential of these initiative is not fully exploited. While younger, highly educated people are among the main users, modern technology can hinder the use of these initiatives by elderly people. The transition towards the new economic models requires a resource-based economy. The tax system should no longer promote a capitalist approach but should rather support a sustainable solution. This new approach will seek also necessary adjustments on the side of the trade policy. In the current system, regulatory standards are often driven by industry interests. In the future, the current regulatory framework should adapt and promote more sustainable solution (resource reuse, the longer life expectancy of products). The transition towards new economic models should, therefore, focus on both civil society level (awareness rising) and decision-makers level when it comes to adapting the existing regulatory framework. Further involvement of strong business players could be perceived as an opportunity for small initiatives. However, the involvement of international companies which represents mass consumption society would raise important ethical issues and concerns of possible greenwashing.
Greece	18/09/2019	The collaborative and circular economies in Greece are developing. Steps in the right direction are being made, which includes the adoption of the National Circular Economy Action Plan and recently adopted legislative framework for Energy communities as a specific feature of Greek territory. However, since both fields are only at the development stage, obstacles are still very much present in the territory. There is limited stakeholder participation and lack of general awareness among the public about the existence of both circular and collaborative economy and the benefits they can bring to the Greek society as a whole. There is also limited information provided from both public and private sector. There is no central database tracking the existent Urban Circular and Collaborative initiatives. Many initiatives in the fields are based on a self-organisation model, because there is a general lacking institutional support. There are not many financial tools to support these initiatives. Legal framework is also lacking in terms of tools. Opportunities for further development have been identified. New group of politicians (at the EU and national level) appears to be more active in the fields, which gives hopers for the future acceleration of the process. Greek traditional societal values are also linked with the purposes of both circular and collaborative economy. For example, traditional Greek family diet is food saving in nature, villagers in a village typically already share the tools

		among each other etc. The social background is there, what remains to be done, is the transposition of these values and approaches into the Greek urban environment. Additionally, Greece is a country importing raw materials and circular economy is a good opportunity to free itself from this economic dependency and a great opportunity to create new quality jobs. Circular economy is not just about the waste management in the country, but it also has an opportunity to change national economic objectives. It has been agreed that the biggest challenge so far is the lack of awareness and confusion present among the general public on what is circular and what is collaborative economy. Mistaken use of the concepts is common. How to transit this circle of unawareness and transit from the traditional mindset of producing goods remains the biggest challenge for the authorities. For the future, the wish is to create some sort of matrix for the categorisation and classification on what constitutes circular and collaborative economy initiatives. The general wish for better planning and design from the part of the governmental institutions has been expressed. Planning and design is very much linked to the strategy adoption and for strategy adoption a proper legislative framework is necessary.
Maribor	26/06/2019	The collaborative and circular economies in Maribor are developing and growing. Their extent can not yet be comparable to other bigger (European) cities, since both economic models are in the development phase in the city. The challenges and obstacles exist, nevertheless the progress compared to the previous years has been made, which can among other be seen by several recently awarded EU projects. Simultaneously, people's and city's governance awareness about the positive impact of both types of economic models is growing as well. The main problem is lack of awareness and readiness by major local and national decision-makers to start working on the projects. Communication between relevant institutions is often lacking and the success of the project depends highly on the personal network of an individual within the relevant institutions. Projects that do come to light, only do so due to European funding as a result of successful tendering. There is a general problem of the project's sustainability. When funding gets exhausted in later stages of the projects, the latter often tend to terminate. Opportunities can mostly be found in the area of mobility, elderly care services, food self-sufficiency and space sharing. Additionally, the successful projects (Urban Soil 4 Food, Cinderella, etc.) give opportunity for the future project value chains (knowledge sharing, experience sharing between the projects). It has been agreed that the major obstacle is lack of networking and institutional support. Network would be beneficial also for the exchange of information on practices, failures, common problems, etc. In the future more effort will be put on the promotion and networking and consequently increase education and general (public) awareness not just about the existing initiatives, but also about the benefits represented by the collaborative and circular economies. Representatives of the Municipality of Maribor also mentioned establishing in the

		future the city's "Green Office", which would coordinate and manage exclusively green and environmentally sustainable projects.
Porto	18/10/2019	Several challenges and opportunities associated with the collaborative economy were identified. The vast majority of challenges relate to lack of trust and the need to raise awareness and inform about behavioural change, especially in exchange for a social paradigm that is more conducive to sharing and using goods and services over strongly rooted ownership, in the collective consciousness. The opportunities identified highlighted instead the great potential of the collaborative economy to promote circularity in the city, region and country. As it has been pointed out during the second phase of the workshop, opportunities do not arise spontaneously. In order to harvest the seeds of collaborative economy, they must be accompanied by concrete measures able to inform and educate individuals and companies about responsible and sustainable consumption. In the end, participants were invited to identify collaborative economy initiatives that they would be happy to see implemented or scaled up in Porto. This exercise resulted in a coordinated support from the participants to several local sharing economy projects as well as in the suggestion of circular actions that could find fertile ground in Porto.
Prato	04/06/2019	The workshop held in Prato shed some lights on certain circular practices that have accompanied the industrial development of the city. Indeed, Prato has been always a model of innovation in textile sector, having historically based its industrial fortune on the reuse of second-hand clothing. With this mindset, part of the DNA of the city, Prato anticipated by decades a behaviour that today is promoted by the "green economy" and the green management of productive chains in the logic of circular economy. Therefore, Prato operates since a long time in multiple circular economy fields such as: recycling practicing in the textile industry, and water management. However, nowadays, in light of the de-industrialisation of certain peripheral areas of the city, the circular economy in Prato means the reuse and the regeneration of dismissed existing industrial buildings, to not only recycle them (hence prolonging their life), but also to revitalise those (ex) industrial areas that have been abandoned by human activities. The regeneration of Prato is then witnessing the involvement of institutional stakeholders (first and foremost the Municipality) as well as a network of civil society associations active in different fields: architecture, design, food sharing, etc. Main opportunities discussed during the workshop were the rise of environmental awareness, through dedicated activities promoted by public and private initiatives, the repossession by the population of spaces once belonging to industries, and the inclusion of "social outsiders" (i.e. the Chinese population). Main challenges instead were identified in the lack of (mostly financial) support by the local authorities. Whereas public initiatives are financed periodically, private initiatives coming from

		non-for-profit organisation can only rely on regional/national/European tendering, which does not ensure a constant flow of cash able to ensure a proper continuity in their activities.
The Hague	21/05/2019	Regarding current situation of UCCE development, stakeholders point out that authorities should improve existing inflexible rules and regulations. The local authorities should further look at the society in a holistic manner and accept a different way of measuring impacts (e.g. experimentation). Furthermore, the neighbourhood managers raised the issue of lack of projects continuity du to funding limitations and political changes. The successful initiatives require continuity and a local ownership. UCCE initiatives present various opportunities and challenges to the local society. Among the opportunities are prioritisation of access to goods over the ownership; better use of (raw) materials, enforcement of circular and sustainable designs, promotion of cooperative thinking, decreasing feelings of loneliness. On the side of challenges are existing legislative boundaries (e.g. prohibition of waste collection for residents), lack of understanding of the value of Urban Circular and Collaborative Economy initiatives and their benefits, and fear of transition towards new models. • To enabler further development of UCCE in The Hague the following steps could be undertaken: • Imposition of tax on a non-durable product; • Imposition of the basic income; • Further development of possible experimentation to overcome the current administrative or legislative bottlenecks.

Annex 6: Interviews

This table lists the organisations that have been interviewed between October and December 2020. The interviews help gather additional literature and examples for the impact analysis and recommendations.

Organisation	**City, Country**	**Type**
CCI Paris Ile-de-France	Paris, France	Public authority
Municipality of Milan	Milan, Italy	Public authority
SmartUse	Stockholm, Sweden	Public authority
Umea City Council	Umea, Sweden	Public authority
Design for Governance	Amsterdam, Netherlands	Research
Dimmons Research Project	Barcelona, Spain	Research
I-Share Germany	Manheim, Germany	Research
Lund University	Lund, Sweden	Research
Lund University	Lund, Sweden	Research
Ouishare Spain and South America	Barcelona, Spain	Research
P2P Foundation	Brussels, Belgium	Research
Platform 31	The Hague, Netherlands	Research