

# GUIDELINE HANDBOOK

**FOR THE ANALYSIS OF PARTICIPATION  
APPROACH IN PLANNING TOOLS LEADING TO  
CIRCULAR CITIES TRANSITION PROCESSES**



**Politecnico  
di Torino**

Result of the Master Thesis

Making cities and the built environment more sustainable and circular (Circular Cities and Society)

Candidate: Gabriela Fernandez Zambrano

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**“An endless number of green buildings doesn’t make a sustainable city”**

**Jan Gehl**

**“All the cities of the world are going to expand. We need to have a better understanding of what makes good urban habitat for homosapiens. We have an obligation to make the new places more livable, more sustainable, more healthy. We have the tools.”**

**Jan Gehl**

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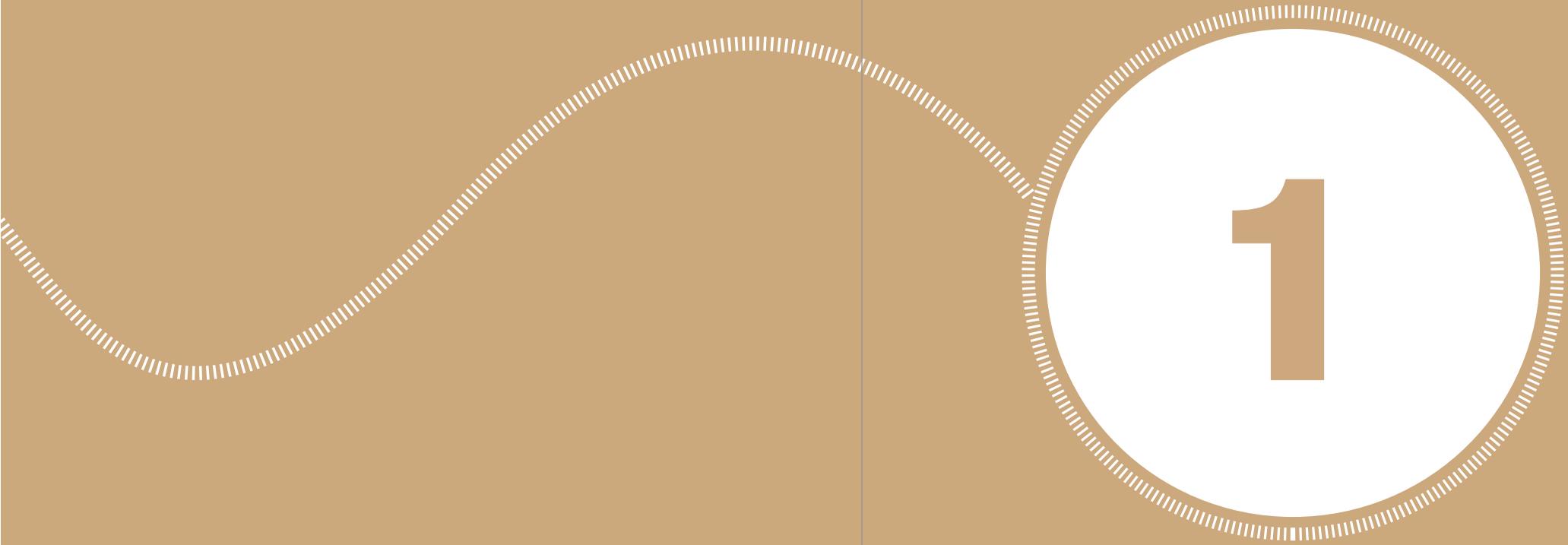
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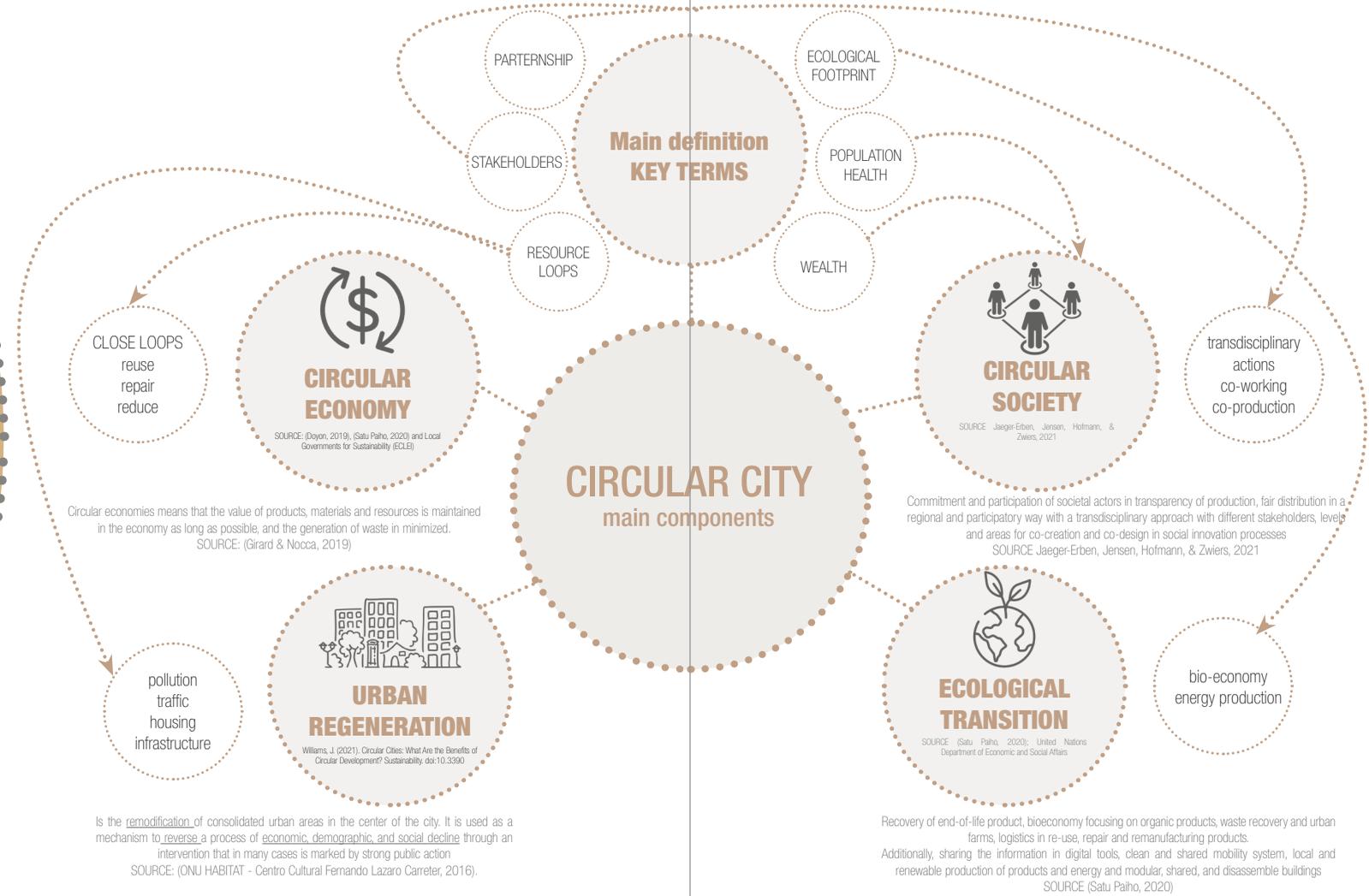
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**GUIDELINES AND RECOMMENDATIONS**



# WHAT ARE CIRCULAR CITIES?

“ A city that practices circular economy principles to close resource loops, in partnership with city's stakeholders (citizens, community, business and knowledge stakeholders) to realize its vision of a future-proof city”  
 Source: (Predeville et al., 2018)



“A circular city conserves and reuses resources and products, shares and increases use and utility of all assets, and minimizes resource consumption and wastage in all forms”  
 Source: European Investment Bank, 2018

**ACTIONS NEEDED**

1

**NEW BUSINESS MODELS**

Close material loops, reduce resources and keep materials as long as possible



2

**NEW COLLABORATION PARTNERS**

Reconsider value offered to stakeholders and establish more participation



**IN THE CITY CONTEXT**

City planning and governance, buildings and construction, public procurement, industrial symbiosis and waste, water, food, and energy management. All of them are needed to work together in order to fulfill the aims of circularity in cities in an ecological, social, and economic way.

SOURCE: (Doyon, 2019), (Satu Pailho, 2020) and Local Governments for Sustainability (ICLEI)

Maximizing resource efficiency using less than in past production processes.



**NARROW**

Take advantage of the residual resources and have an industrial symbiosis.



**CLOSE**

**CIRCULAR ECONOMY**



**SLOW**

Design long-life products by reusing, repairing, and recycling

**CIRCULAR CITY**

Relocation of activities and businesses



Updating and modernization of urban infrastructure



Land use and property structure modification



**IN CIRCULAR CITIES**

Circular development is a new normative model for adaptation of long-term changes and immediate changes by reducing urban resource consumption, waste and greenhouse gas emissions, regenerates urban ecosystems and builds urban resilience.

SOURCE: (Williams, 2021)

**BENEFITS**

It increases in urban productivity, job creation, investment attraction, increase accessibility to housing, existing infrastructures capitalization, crime reduction, revitalization of obsolete facilities, the preservation of historic buildings and the reduction of air pollution and of traffic.

SOURCE: (ONU HABITAT - Centro Cultural Fernando Lazaro Carreter, 2016)

Cooperation of different stakeholders in different levels and areas of the society system in a co-creation and co-design of products, services, and social innovation processes.

SOURCE: Jaeger-Erben, Jensen, Hofmann, & Zwiers, 2021



**TRANSDISCIPLINARY APPROACH**



**PARTICIPATION OF SOCIETAL ACTORS**



**SOCIAL TRANSFORMATION**



**TACKLE THE NON-EFFICIENT USE OF NATURAL RESOURCES**



**RECYCLING FOR MATERIALS AND GOODS**



**MINIMIZATION OF FOOD WASTE**

**ACTIONS FOR ECONOMIC REORGANIZATION**

- ▶ Transparency of production processes
- ▶ Accessibility to products.
- ▶ More fairly distributed and circulated production in a regional and participatory way.

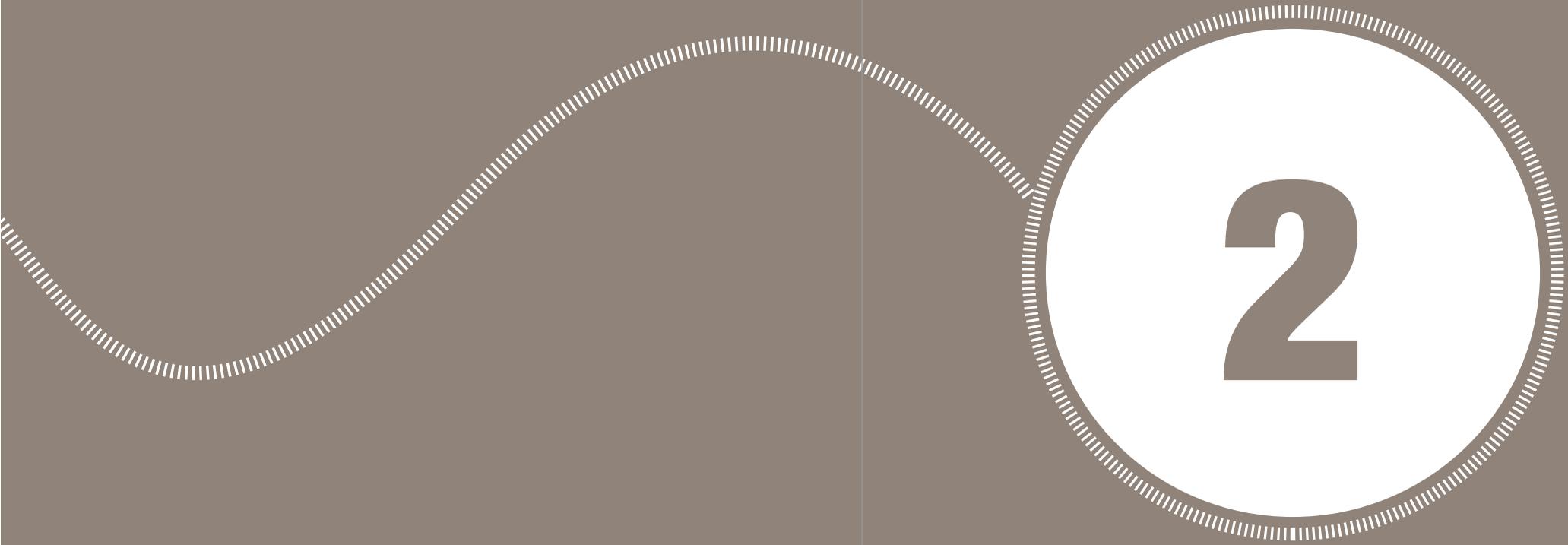
SOURCE: Jaeger-Erben, Jensen, Hofmann, & Zwiers, 2021

**CORE ASPECTS OF A CIRCULAR CITY WITH AN ECOLOGICAL TRANSITION**

- Recovery of end-of-life product ---
- Bioeconomy focusing on organic products ---
- Waste recovery and urban farms ---
- Logistics in re-use repair and remanufacturing products ---
- Sharing the information in digital tools ---
- Clean and shared mobility system ---
- Local and renewable production of products and energy ---
- Modular, shared, and disassemble buildings ---

SOURCE: (Satu Pailho, 2020)

Urbanization processes need to implement the Sustainable Development Goals for 2030. The European Union Cities are in process of transition for sustainable and low carbon societies facing urbanization challenges every day.  
SOURCE: United Nations Department of Economic and Social Affairs



**IMPORTANCE OF PARTICIPATION**

# HOW IS URBAN PLANNING INVOLVED?

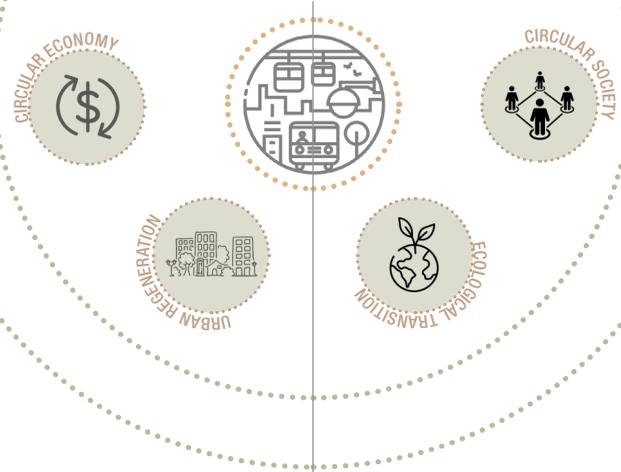
## WHAT IS URBAN PLANNING?

Urban planning encompasses the preparation of plans for and the regulation and management of towns, cities, and metropolitan regions. It is a science concerned in social, economic, and environmental aspects. Planning has a practical and theoretical framework focusing on normative processes that gives the possibility for a participatory democracy.  
SOURCE: (Margo Huxley, 2020).

## WHAT IS PARTICIPATION IN URBAN PLANNING?

The literature around the participation approach in urban planning is in working to ensure that everyone's voice concern is attended. In this scenario it is necessary the creation of platforms and spaces for this collaborative process.  
SOURCE: (Margo Huxley, 2020)

Participation in urban planning gives an opportunity for a more democratic, political, and social life based on equality.



## THE PROBLEMATIC IS



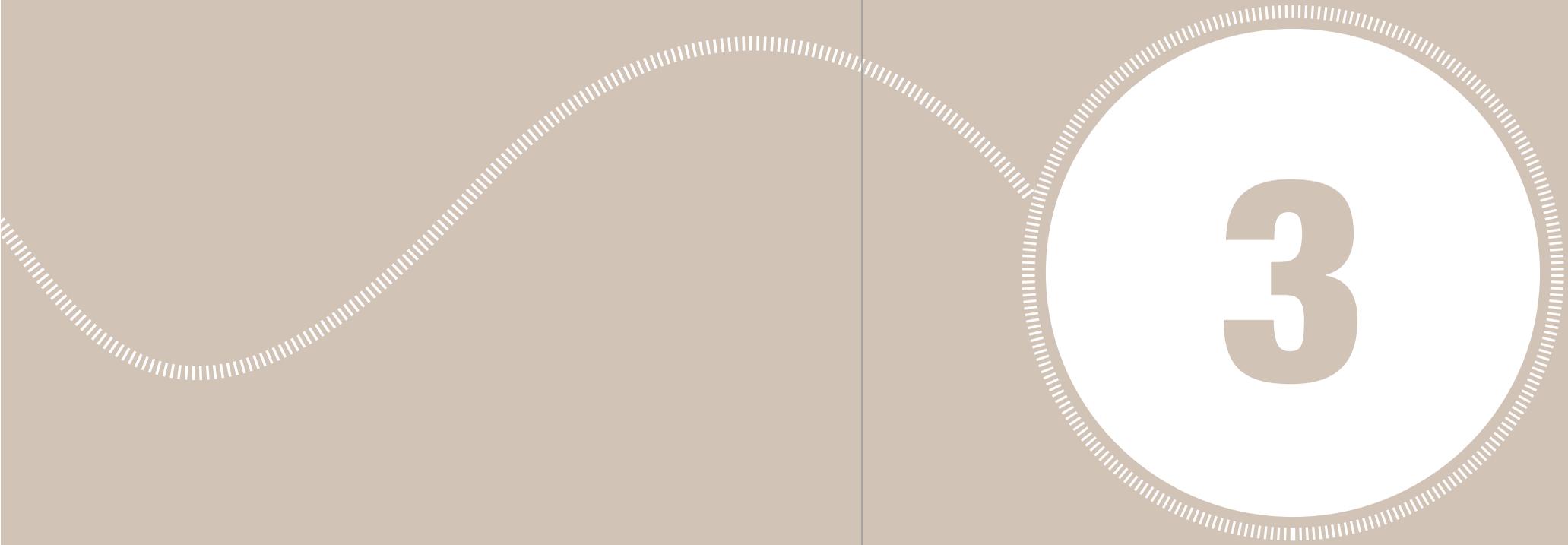
## PARTICIPATION IN URBAN PLANNING

The traditional policy development and decision-making processes are close just for experts and not for the inhabitants. The gap between urban planning and citizens relies in the misunderstanding of the planning system, its technical vocabulary, and mechanisms.  
Only a small portion of the inhabitants stay active in the processes  
SOURCE: (Tewdwr-Jones, 2017)



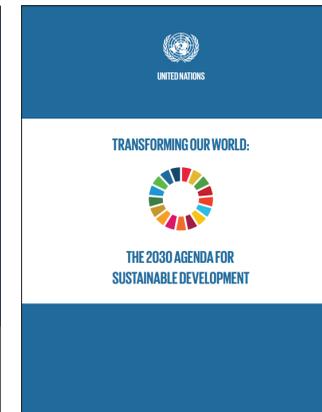
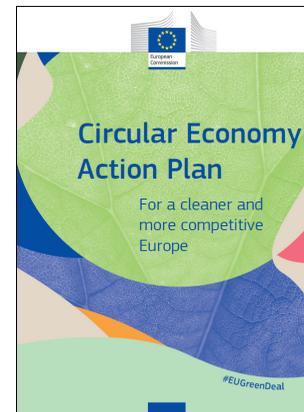
## PARTICIPATION ISSUES

Covid-19 health emergency has closed many opportunities to merge the planning processes with the stakeholders. Digital platforms has many options to know about current processes and ideas as Digital Twin Cities, Virtual Reality approaches, Urban Living Labs, etc. However, they are not completely implemented and have a limited range of people that are able to participate.



**THE TRANSITION PROCESS**

# THE TRANSITION INTO CIRCULARITY



## OFFICIAL DOCUMENTS

# CITIES IN TRANSITION PROCESS



## AMSTERDAM



**AREA**  
219,3 km<sup>2</sup>



**POPULATION**  
1,165,898

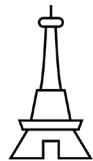


**YEAR**  
2015



**DOCUMENT**

"The Amsterdam City Doughnut – A tool for transformative action"  
"Amsterdam Circular Strategy for 2020-2025"



## PARIS



**AREA**  
105,4 km<sup>2</sup>



**POPULATION**  
11,142,202



**YEAR**  
2016



**DOCUMENT**

The White Paper on the Circular Economy of Greater Paris by Paris City Hall



## BRUSSELS



**AREA**  
162 km<sup>2</sup>



**POPULATION**  
2,109,631



**YEAR**  
2016



**DOCUMENT**

Programme régionale en économie circulaire



## PORTO



**AREA**  
41,42 km<sup>2</sup>



**POPULATION**  
1,320,347



**YEAR**  
2017



**DOCUMENT**

"Porto Circular Economy Roadmap"



## SWEDEN



**AREA**  
528,447 km<sup>2</sup>



**POPULATION**  
10,218,971



**YEAR**  
2018



**DOCUMENT**

Circular Economy Delegation and the Circular economy – Strategy for the transition in Sweden.

# THE MAIN STRATEGIES



## AMSTERDAM



4 main pillars:  
social foundation and ecological ceiling,  
in a local and global level.

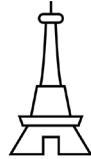
Work in the localization of resource  
flows

Minimize the importation of basic  
materials

Consumption of local goods, food and  
organic waste

SOURCE:

Doughnut Economics Action Lab (DEAL), (2020), The Amsterdam City  
Doughnut - A transformative tool - Amsterdam, Netherlands: Doughnut  
Economics Action Lab (DEAL).



## PARIS



The 7 main strategies for a  
Greater Paris Document

- 1 Encourage and support economic players
- 2 Innovate and experiment
- 3 Scale up and establish regional momentum
- 4 Change attitudes and practices
- 5 Involve local authorities, business, and citizens
- 6 Create network linking players
- 7 Change legislation

SOURCE:

Lica, I. M. (2019), CITIES OF THE FUTURE: CIRCULAR PARIS: VISIONS,  
STRATEGIES AND PARADIGMS. Romanian Economic and Business Review,  
14(2), 55-62.



## BRUSSELS



Identify and understand flows, effects  
and hotspots:

- primary material footprint
- carbon footprint
- household consumption

Focus actions  
regeneration, sharing, optimization,  
closing loops, virtualization, and  
exchange.

SOURCE:

Maarten Christis, A. A. (2019), Implementation at a city level of circular  
economy strategies and climate change mitigation: the case of Brussels.  
Journal of Cleaner Production, 218, 511-520. doi:https://doi.org/10.1016/j.jclepro.2019.01.180



## PORTO



Capture circularity in the  
"Circular City Diagram" in  
2 main strategies.

Focus on local resources, energy, food,  
material, and culture.

Focus on renewable energy, CE  
innovation, etc.

SOURCE:

Ferreira, A. C., & Fuso Nerini, F. (2019), A Framework for Implementing and  
Tracking Circular Economy in Cities: The Case of Porto. Sustainability, 11(6),  
1813. doi:https://doi.org/10.3390/su11061813



## SWEDEN



Improvement of conditions of productive  
growth

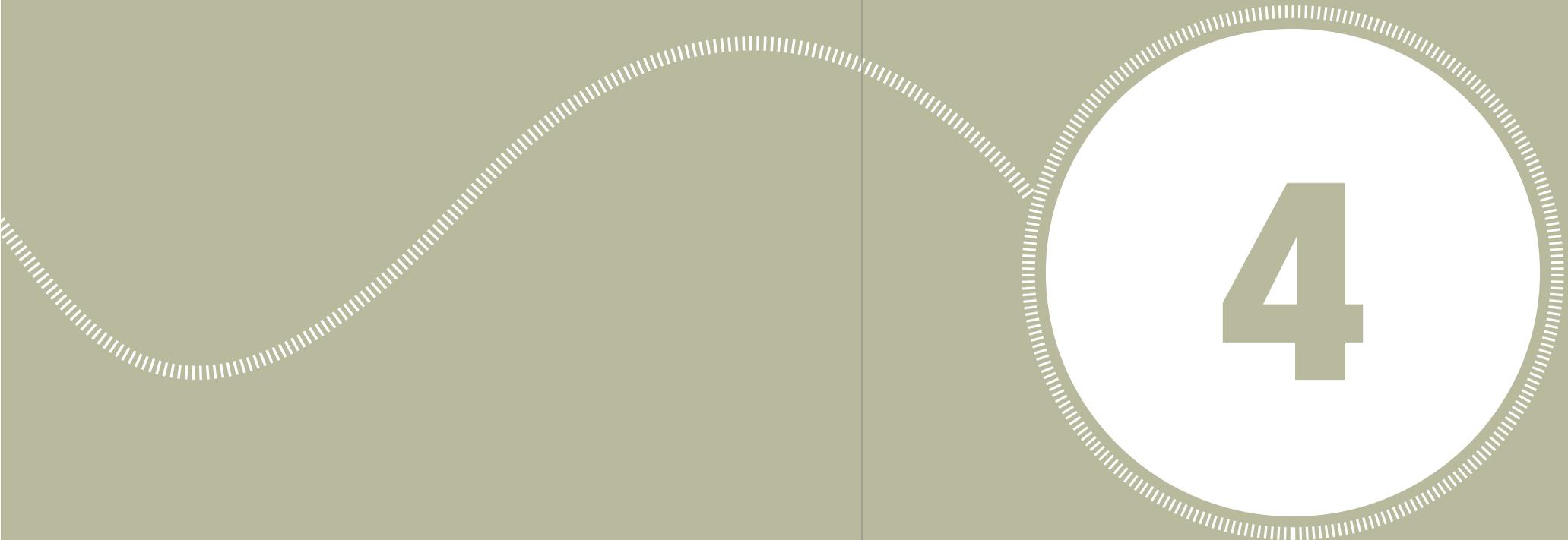
Have a CE standard in a  
multidimensional way

Estimate a composite index

Use it for evaluation of CE practices in  
order to get indicators

SOURCE:

Heshmati, A., & Rashidghalam, M. (2022), Assessment of the urban circular  
economy in Sweden. Cleaner Production, 310. doi:https://doi.org/10.1016/j.jclepro.2021.127475.



**ANALYSIS OF PARTICIPATION  
APPROACH IN CIRCULAR CITIES**

ANALYSIS OF THE PARTICIPATION APPROACH IN THE OFFICIAL DOCUMENTS



AMSTERDAM PARIS

## OFFICIAL DOCUMENT

TOOLS

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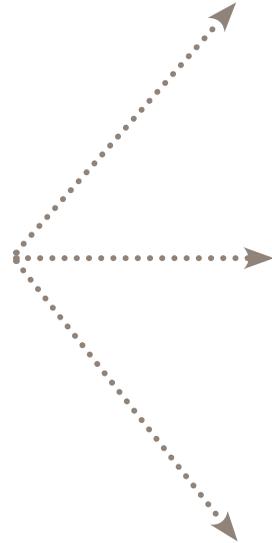
ACTIONS

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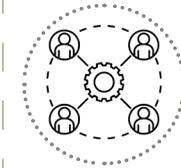
### STAKEHOLDERS

Identify how many stakeholders are involved in each tool and action to have a balance analysis



### CHANNELS OF INVOLVEMENT

Identify which are the ways to connect and involve the community in the transition process.



Examples of Communication Channels						
Physical			Virtual			
2-way	<b>Workshops</b> e.g. charette, living lab, pop-up stall, meeting.	<b>Booths</b> e.g. info booth, pop-up store, info truck.	<b>Interactive Installations</b> e.g. message board, street interface.	<b>(Mobile) websites</b> e.g. platform, wiki, forum.	<b>Apps</b> e.g. Trip Advisor, Pinterest.	<b>Social Media</b> e.g. Twitter, Facebook, Instagram.
	<b>Remote Attendance</b> e.g. tele-conference, Skype.					
1-way	<b>Advertising</b> e.g. billboard, promotional gift sticker.	<b>Media</b> e.g. press release, newspaper.	<b>Mailings</b> e.g. direct mail, brochures.	<b>Advertising</b> e.g. viridian commercials, online ads.	<b>Media</b> e.g. podcast, vlog, online newspaper.	<b>Mailings</b> e.g. e-mail, newsletters.

Overview of communication channels: physical, virtual, 1-way and 2-way (Munster, y otros, 2017)

### MAIN COMPONENTS

Identify how many tools and actions are developed for each component of the circular city





# ANALYSIS OF AMSTERDAM

OFFICIAL DOCUMENTS



42  
tools and  
actions  
analyzed

29  
participatory  
approach



STAKEHOLDERS



CHANNELS OF INVOLVEMENT



MAIN COMPONENTS

## EXAMPLES

1

Set up a cluster of processing companies to find good applications to ensure high quality of production

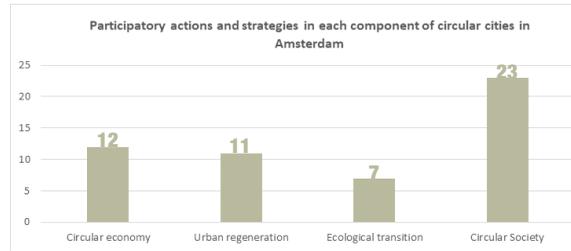


2

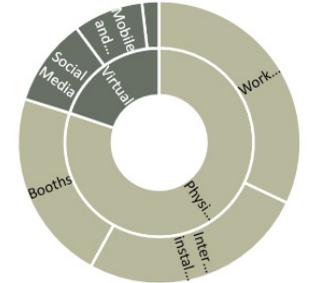
Have a sustainable food chain in urban agriculture by having networks such as "Food Connects" based in research



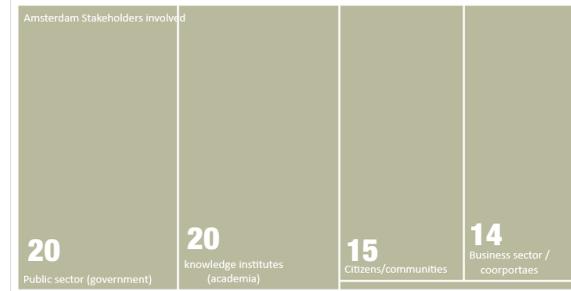
MAIN COMPONENTS LEVEL



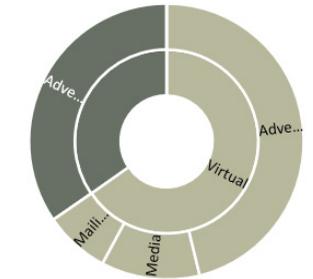
CHANNELS OF INVOLVEMENT  
2-WAY CHANNEL



STAKEHOLDERS

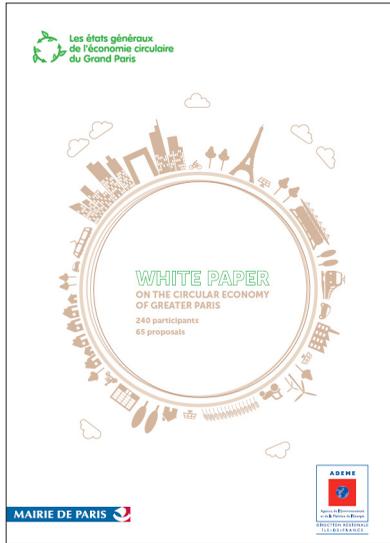


CHANNELS OF INVOLVEMENT  
1-WAY CHANNEL





# ANALYSIS OF PARIS



65 tools and actions analyzed

56 participatory approach



STAKEHOLDERS



CHANNELS OF INVOLVEMENT

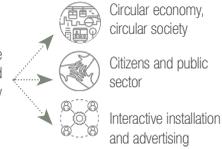


MAIN COMPONENTS

## EXAMPLES

1

Repair cafes as cooperative workshops to give objects a second life, its free, open and runned by volunteers



2

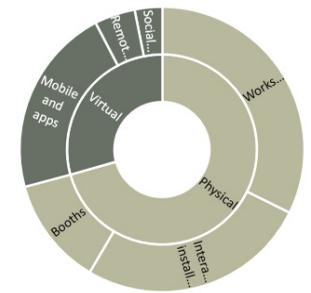
Promote renovation of buildings rather than demolish by a communication strategy with prime contractors and imposing a renovation scenario analysis before demolishing



MAIN COMPONENTS LEVEL



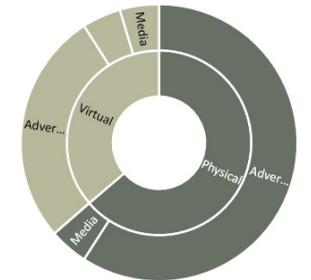
CHANNELS OF INVOLVEMENT  
2-WAY CHANNEL



STAKEHOLDERS



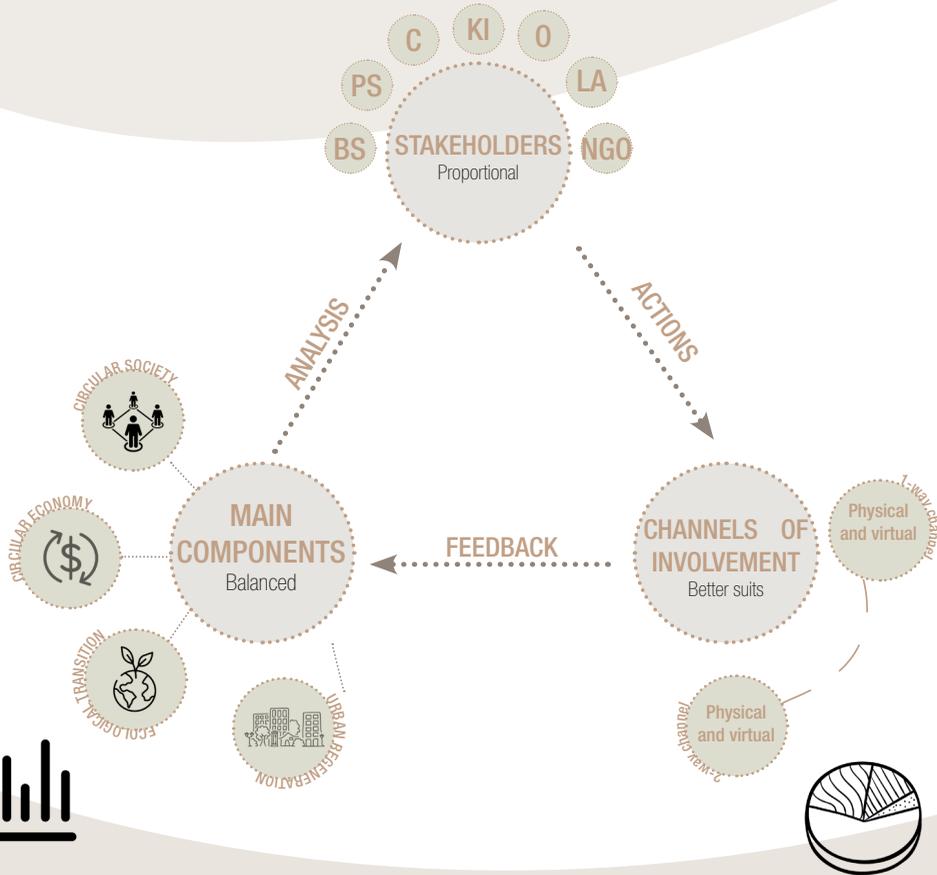
CHANNELS OF INVOLVEMENT  
1-WAY CHANNEL





**5**

**GUIDELINES AND  
RECOMMENDATIONS**



## MAIN COMPONENTS

The first section aims to tackle all kinds of problematic and actions that are not being sustainable in all aspects of the city. The main components as mentioned before are "Circular Economy", "Ecological Transition", "Urban Regeneration" and "Circular Society. It is ideal for all the main components to be included in the strategies and tools in order to find a balance and the whole city transforms in an equitable way.

## STAKEHOLDERS

Moving forward, the second section is about the involvement of stakeholders, as we can see from the case studies there are six general types of stakeholders, the public sector (local authorities, government, city hall, etc.), business sector (companies), knowledge institutions (schools, universities, research centers), citizens, NGOs, and legal actors (lawyers). It is important to include all of them because they all give different perspectives of the city and how the economy works.

## CHANNELS OF INVOLVEMENT

The last section is the channels of involvement in which many of them were identified in the case studies. The way all entities approach to the stakeholders is crucial since the communication part is the starting point of action and therefore, progress of transition. Since there are many methods to approach it is necessary to analyze each stakeholder and community in order to pick the channel that best suits them.

GUIDELINES

THE

# MAIN COMPONENTS

## BALANCED



1. Create awareness campaigns in order to inform the community of the new processes of circular economy in the city, country or neighborhood
2. Connect different initiatives with knowledge institutions to stimulate research and innovation
3. Have experimental areas for stakeholders and citizens to be completely involved
4. Teach to recycle and other circular processes to the community in schools, companies and neighborhoods e.g. educational kits implemented in Paris
5. Create sharing and repairing centers to create community based on solidarity and sustainability
6. Have donation programs of food, clothes, furniture, etc.,
7. Open office spaces to share and incentivize the communication of ideas.
8. Include circular economy in school and university programs.



1. Create clusters for companies to share good practices
2. Create networks to incentivize a sustainable food chain
3. Innovate and experiment on sustainable food production
4. Enable platforms and spaces to share, repair and recycle
5. Create simulation areas for production innovative ideas
6. Encourage eco-design companies
7. Have a test software for economic analysis
8. Develop a supply system in between companies
9. Have business incubators to support sustainable processes in companies
10. Have an accompany team for economic, legal and technical advice
11. Facilitate web pages and apps for recycling a donation.



1. Have experimental areas for food production, biomass, fertilization, etc.
2. Create awareness campaigns for upcycling materials
3. Create a communication tool to solve doubts and share good practices between companies of food production
4. Create a volunteer network to develop all kinds of sustainable projects
5. Create platforms (websites, apps) to exchange services and resources between stakeholders
6. Encourage local composting



1. Share information and ideas in sustainable construction to develop new instruments
2. Formulate circular ambitions for infrastructure
3. Develop a center for practical advice about circular construction practices and urban development
4. Incentive research and innovation in sustainable construction and urban development
5. Create a "circular toolbox" for renovation infrastructure to share technical, financial, social, organizational and legal implementation issues
6. Have experimental areas and buildings
7. Enable areas of the city for recycling centers
8. Enable composting areas in neighborhoods
9. Promote renovation of buildings rather than demolish
10. Create a BIM database for resource availability in local storages.

# STAKEHOLDERS

## PROPORTIONAL

STAKEHOLDERS	ROLE IN THE TRANSITION PROCESS
PUBLIC SECTOR	Sets up the rules and is the decision-maker actor. Also gives incentives to citizens a company for good sustainable practices
BUSINESS SECTOR	Start the circular economy process by being the actors that use the natural resources, they are responsible for most of the transition processes
KNOWLEDGE INSTITUTIONS	Are involved in research and innovative ideas in order to create actions and tools for better sustainable practices
CITIZENS	Are in charge of a community and culture change into a more sustainable lifestyle
NGOs	Leaders and supporters of innovative and sustainable initiatives
LEGAL ACTORS	Create the normative path for the changes in the transition processes.

# CHANNELS OF INVOLVEMENT

## BEST FITS

CHANNELS OF INVOLVEMENT	2-WAY		1-WAY	
	PHYSICAL	Workshops and booths for the involvement of all stakeholders to build networks and support each other in ideas and processes. Interactive installations such as experimental areas to test initiatives	PHYSICAL	Advertising by labeling products to inform people about sustainable products, educational kits with instructions, bins installation,
VIRTUAL	Website platforms, mobile apps to connect stakeholders, have support information and create feedback. Also, the remote attendance meetings for the discussion of different ideas	VIRTUAL	Commercial, online advertising, radio, and podcasts to inform, newsletters.	

# CONCLUSIONS

1

Cities such as Amsterdam, Paris, Brussels, Porto and countries as Sweden, are a reference point in the European and the global level as circular cities models. Also they set standards to be followed and are a source of inspiration for other places in the world.

2

Amsterdam and Paris, focus the work in building a new society toward sustainability and ways to involve all kinds of stakeholders

Organize workshops for gathering people's opinions, have interactive installations creating hubs and experimental neighborhoods and developing virtual advertising is websites and mobile apps to involve more people.

3

The guidelines for future developments aim to work as background information to follow a path of recommendations.

First, analyze the city, the potentials of it (also in each component of circular city), second, to set goals of specific objectives to develop the main strategies, third to propose tools and actions that involve different stakeholders and fourth, to spread those tools and actions in many channels as possible catching all the population.

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# GUIDELINE HANDBOOK

FOR THE ANALYSIS OF  
PARTICIPATION APPROACH IN  
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