European Commission

Circular Cities & Regions Initiative

# 1st CCRI WEBINAR:

## CCRI Methodology for the implementation of a circular economy at the local and regional scale

*October 27th, online*

# Welcoming remarks

*CCRI office, Tugce Tugran*

Circular Cities & Regions Initiative

# Housekeeping rules

## Virtual attendees

Please keep your camera on.

Please stay muted until you are invited to take the floor.

Please interact with us on the chat.

## Sli.do

You can join on your pone by using the QR code that you will see on the screen or on your browser at Slido.com with the token #CCRI

All answers will be visible and displayed on the screen

Identify yourself (name + organisation) as follows:

- X before your name if you are a Pilot/Fellow
- O before your name for other CCRI stakeholders

**Please note that this session is being recorded for note-taking purposes.**

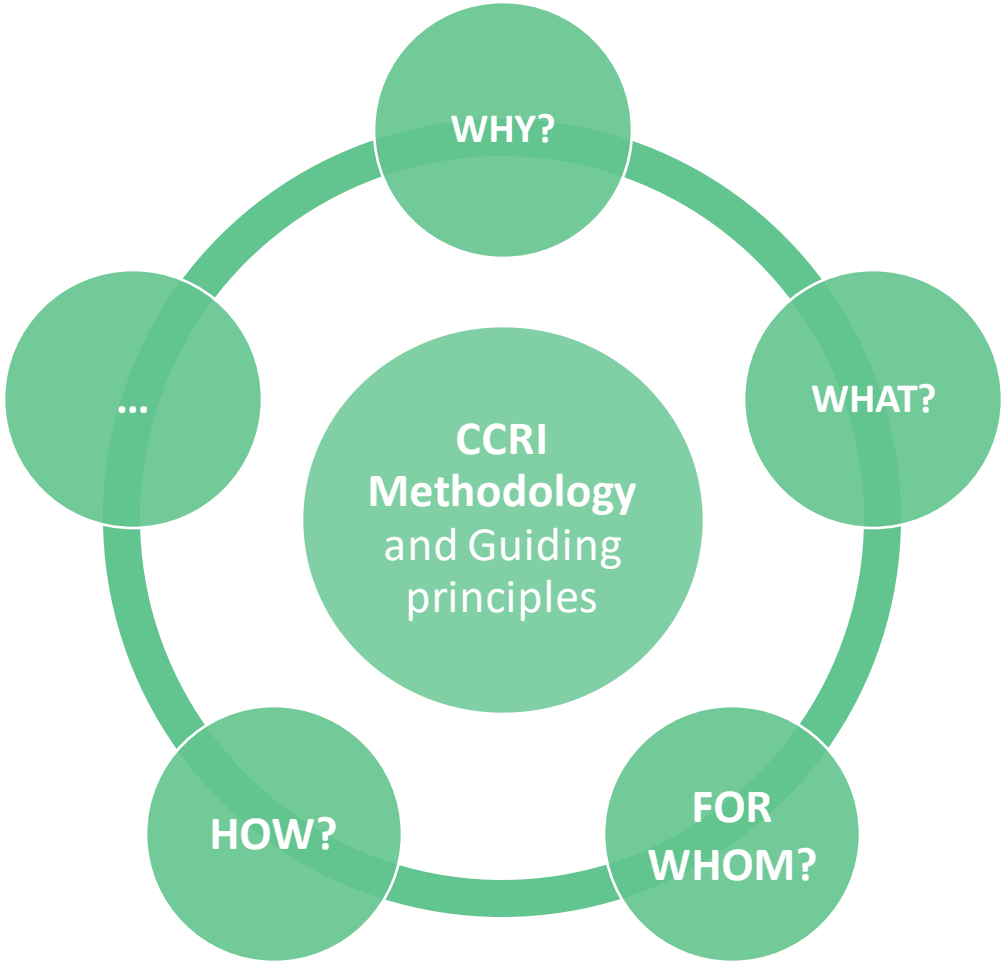
# AGENDA

- **10:30-10:35** | Welcoming remarks *(CCRI-CSO, Tugce Tugran)*
- **10:35-10:45** | Introduction to the CCRI Methodology *(CCRI-CSO, Pierre Menger)*
  - The need behind this guidance document and its added value
  - Uses, target audience and objectives of the tool
- **10:45-11:30** | The CCRI Methodology *(CCRI-CSO, Marco Bianchi)*
  - Structure and contents
  - Presentation of one real-life example for each stage of the CCRIM *(CCRI-CSO, Andrea Accorigi, Ernest Kovács, Alina Margolina)*
  - Short introduction to the Self Assessment Tool *(CCRI-CSO, Jannis Lambert)*
- **11:30-11:35** | Q&A with the audience
- **11:35-11:45** | Circular Systemic Solutions factsheets *(CCRI-CSO, Elba Fuster Figuerola)*
- **11:45-11:50** | *Short break*
- **11:50-12:20** | 30 Mins Discussion with Pilots and Fellows:
  - First impressions and feedback on the CCRI Methodology and the CSS factsheets
  - Past experiences from the ground: what tools have you used in the past and lessons learned
- **12:20-12:25** | Closing remarks and end of session


# Introduction to the CCRI Methodology

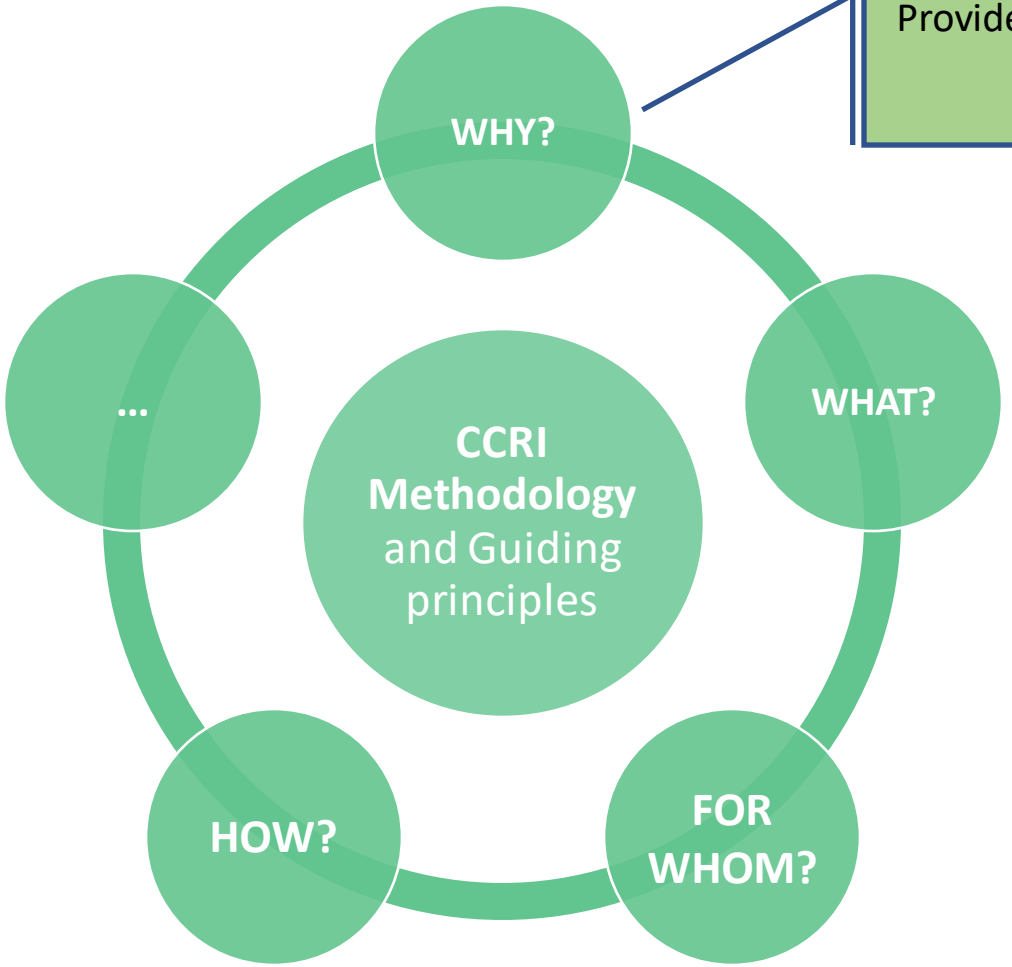
*CCRI office, Pierre Menger*

# Introduction to CCRI Methodology



# Introduction to CCRI Methodology

Momentum CCRI and CCRI-CSO activities
Need to define a framework (**lingua franca**)
Provide in one place a series of key principles, methods and practices



*Wikipedia*

A lingua franca is **any language used for communication between people who do not share a native language**

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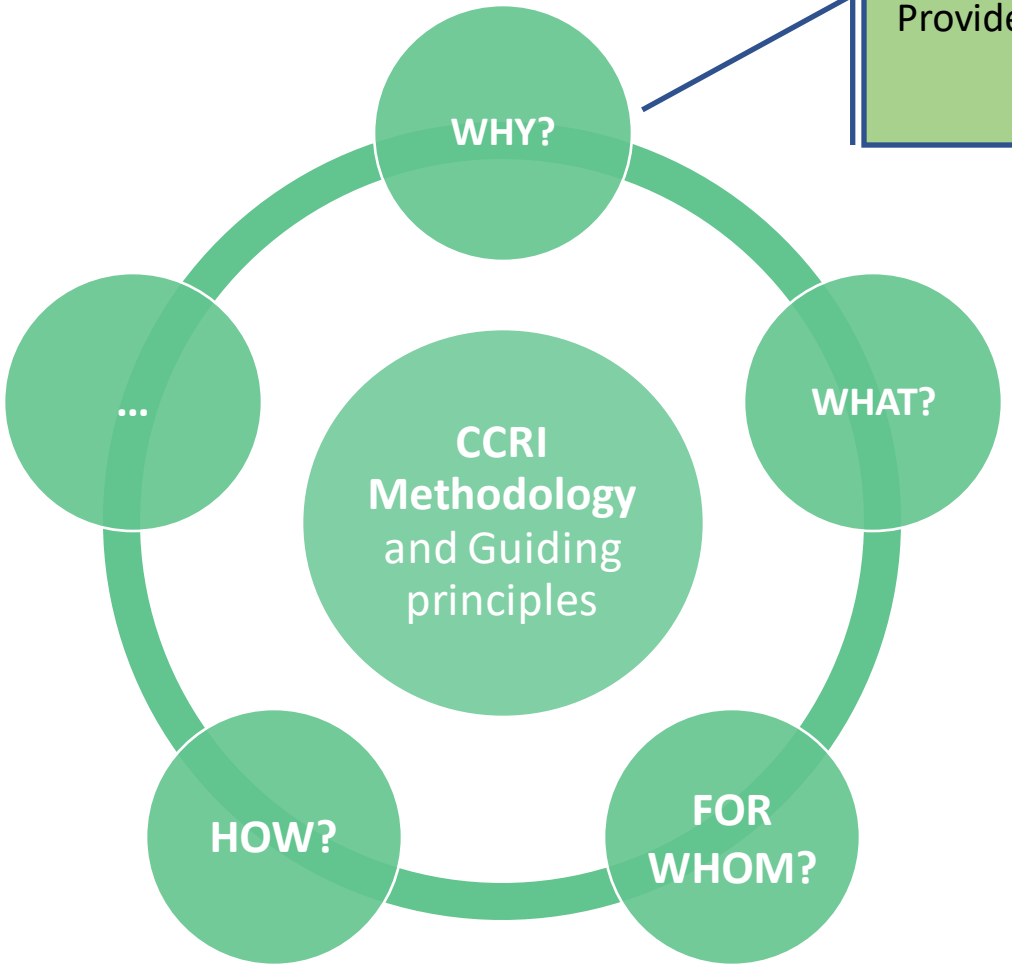

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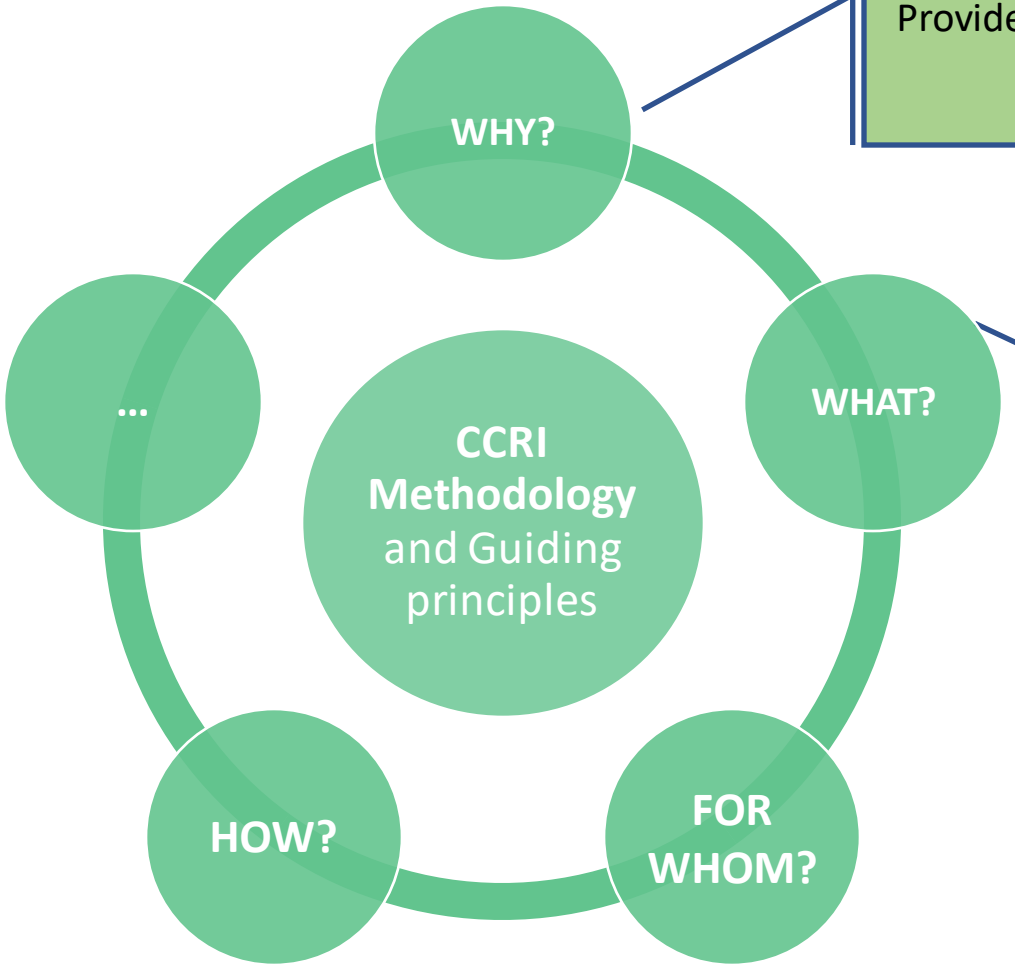


Guidance on the implementation of **CSS**
Step-wise approach
Non prescriptive
Insights on praxis (tools, CSS)

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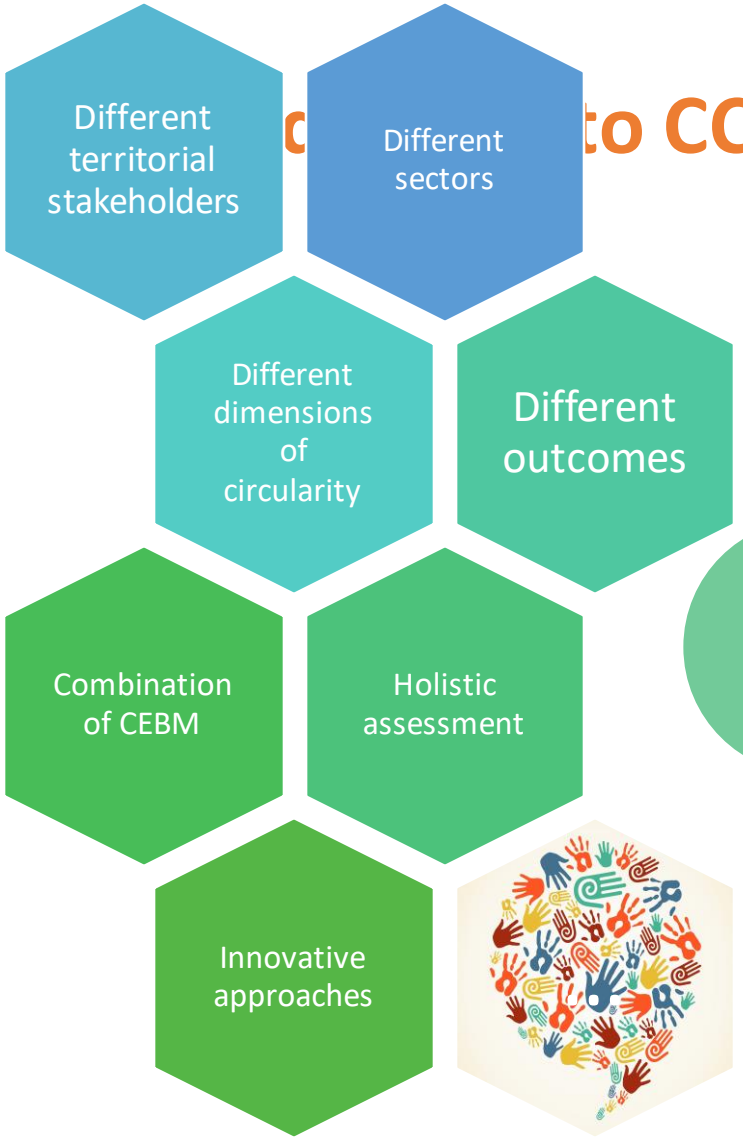


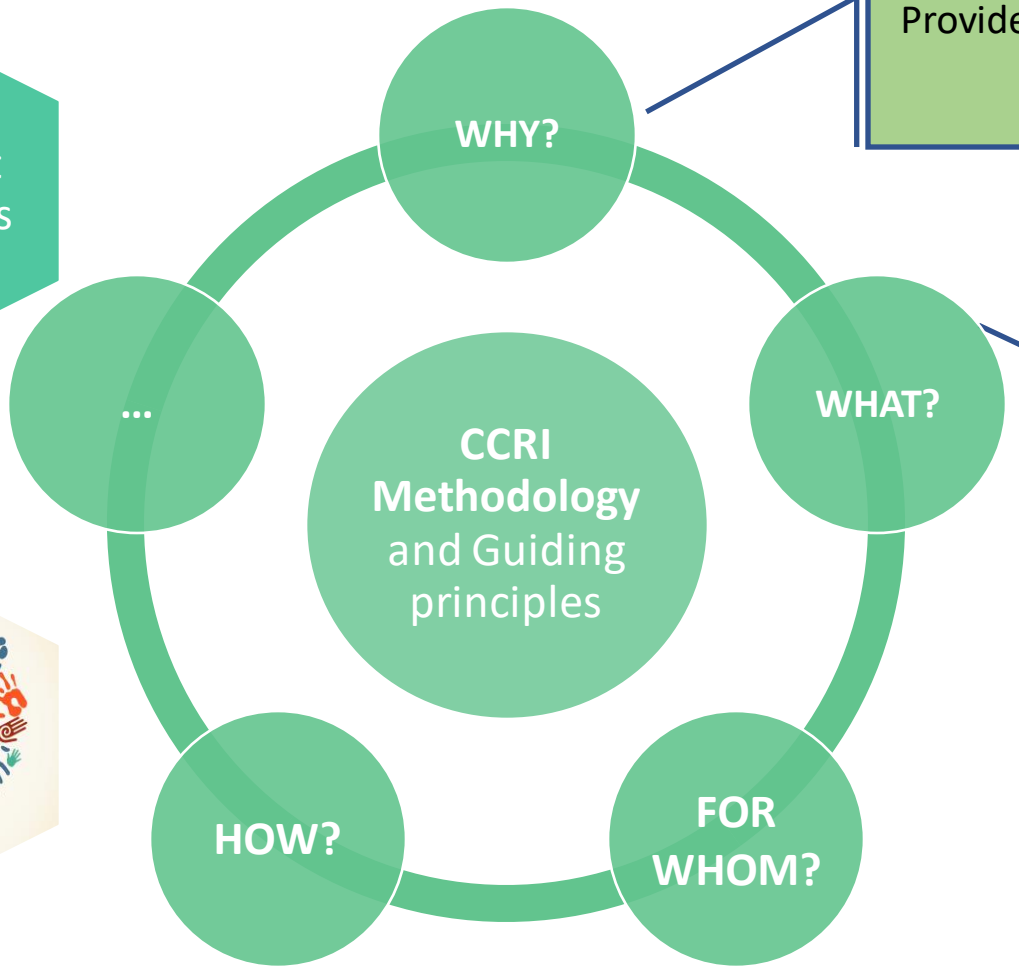


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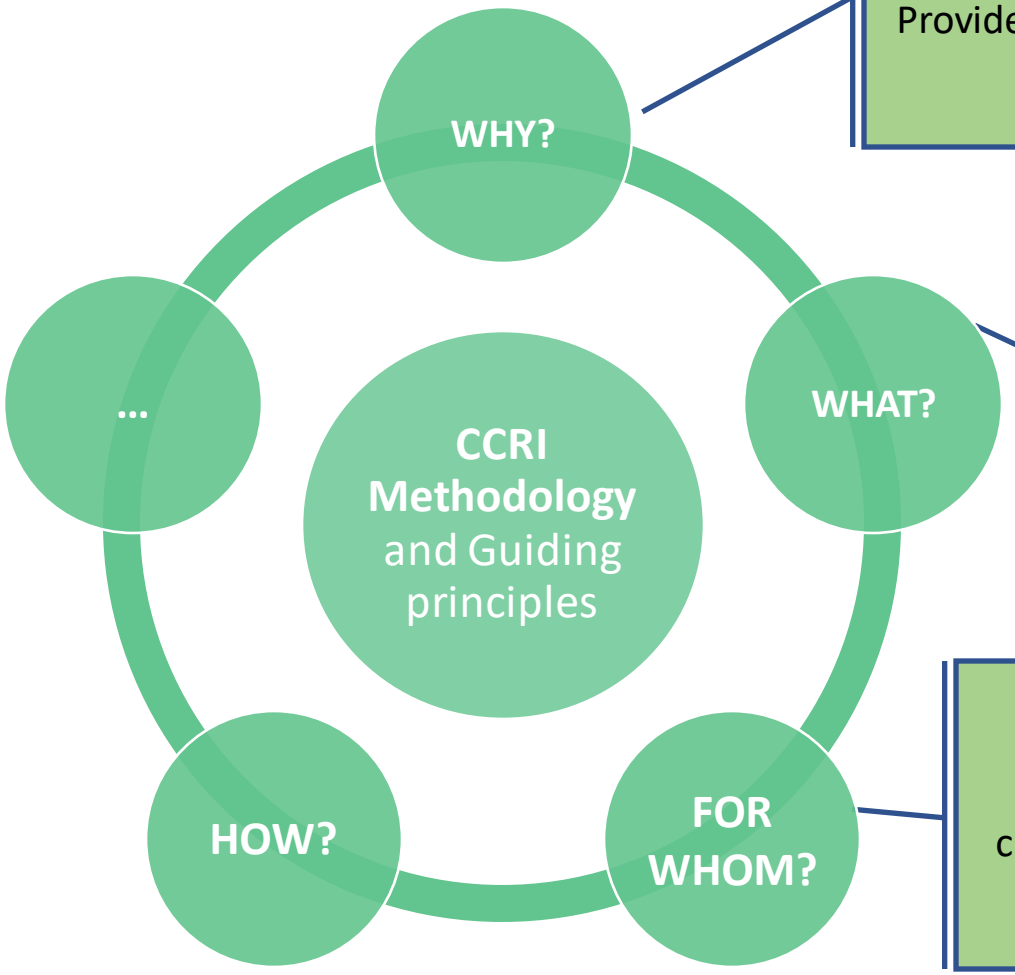


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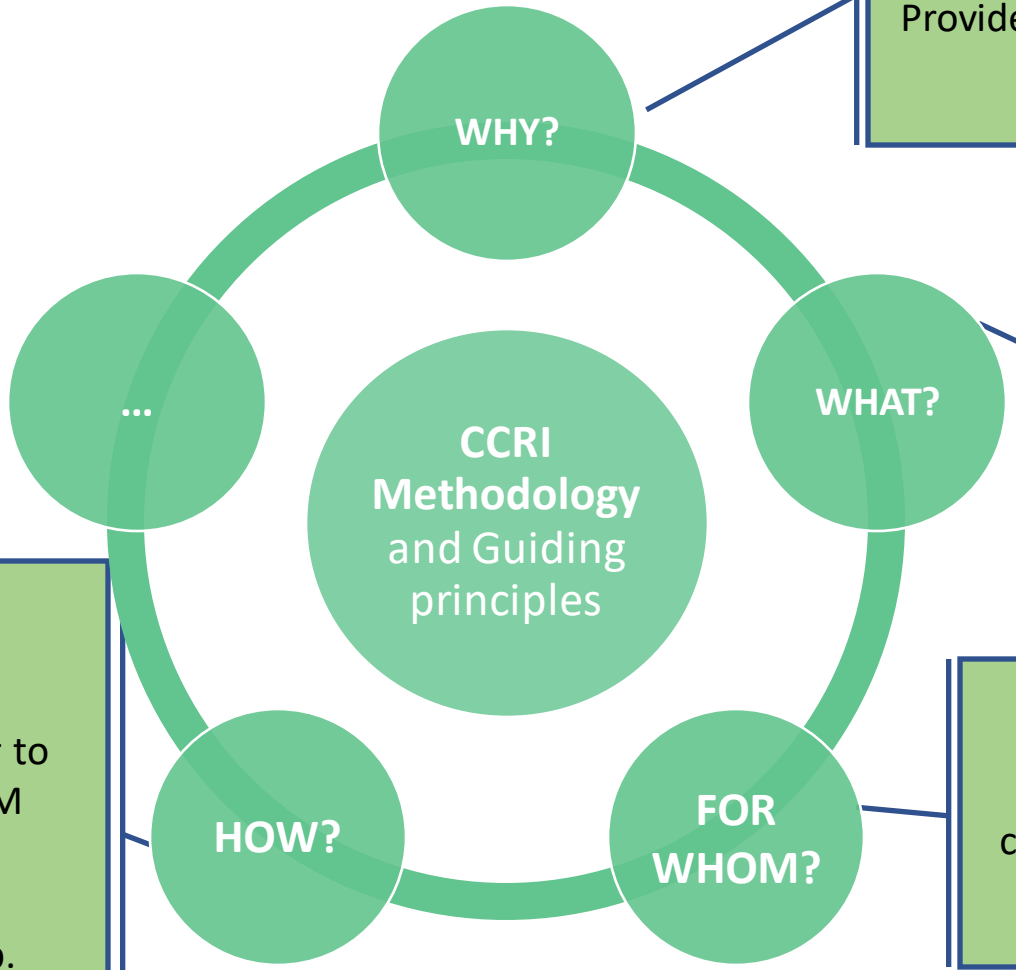


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"Not a book on the shelf" –
Support within the PILOTING activities

Exchanges and feedback loops in order to upgrade, enhance and make the CCRI-M operational

The CCRI-M available on CCRI-CSO web. (future
web-based, more interactive version)

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# Introduction to CCRI Methodology

**IMPORTANT → VALUE FOR YOU!**
**NAVIGATE THROUGH IT AND GET INSPIRED**
**INSPIRE OTHERS – GET VISIBLE**

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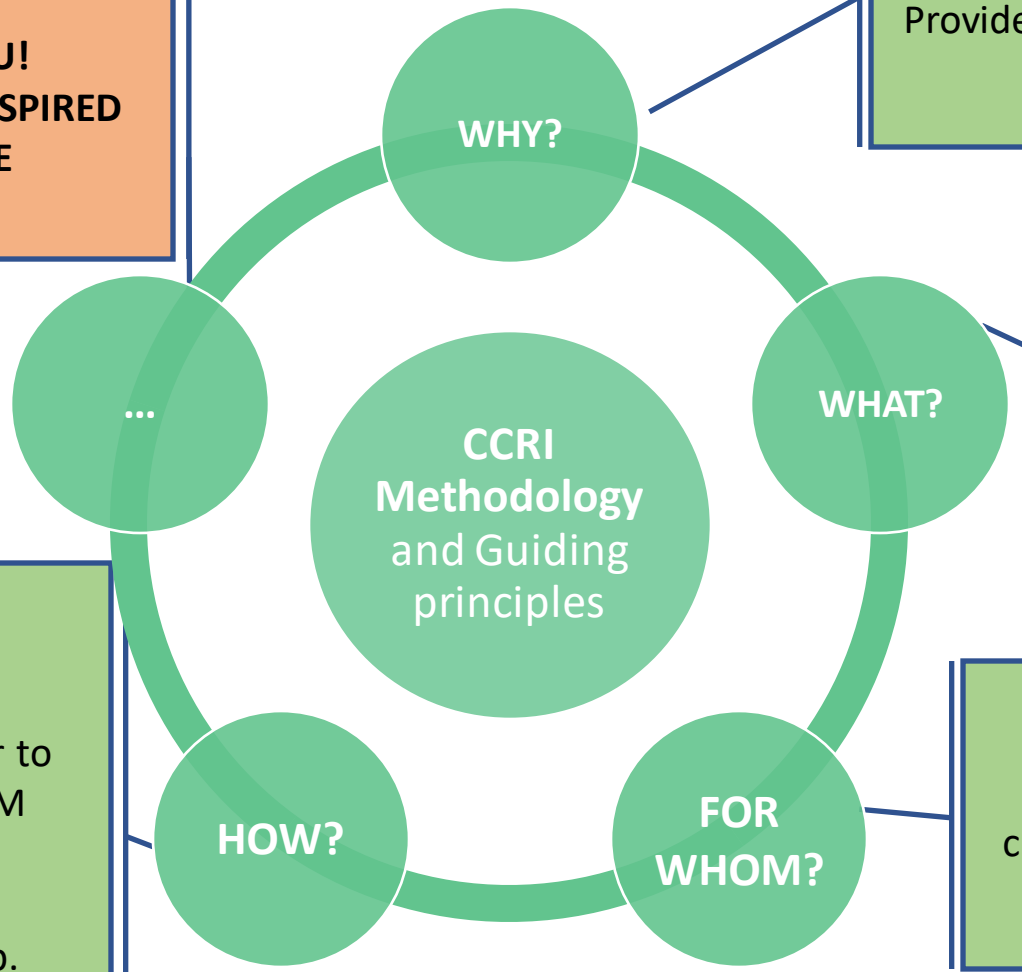


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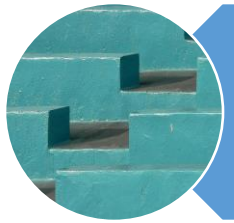

Progressive – tiered approach

Modular


Informative

Dynamic

# CCRI Methodology

*"Providing decision-makers with operational guidance to accelerate the development and implementation of Circular Systemic Solutions at the local or regional level"*

**The document is organised in three parts:**

1. **Part I** introduces the framework of the CCRI-CSO along with basic concepts of circular economy

2. **Part II** presents the CCRI Methodology to support cities and regions in implementing CSSs

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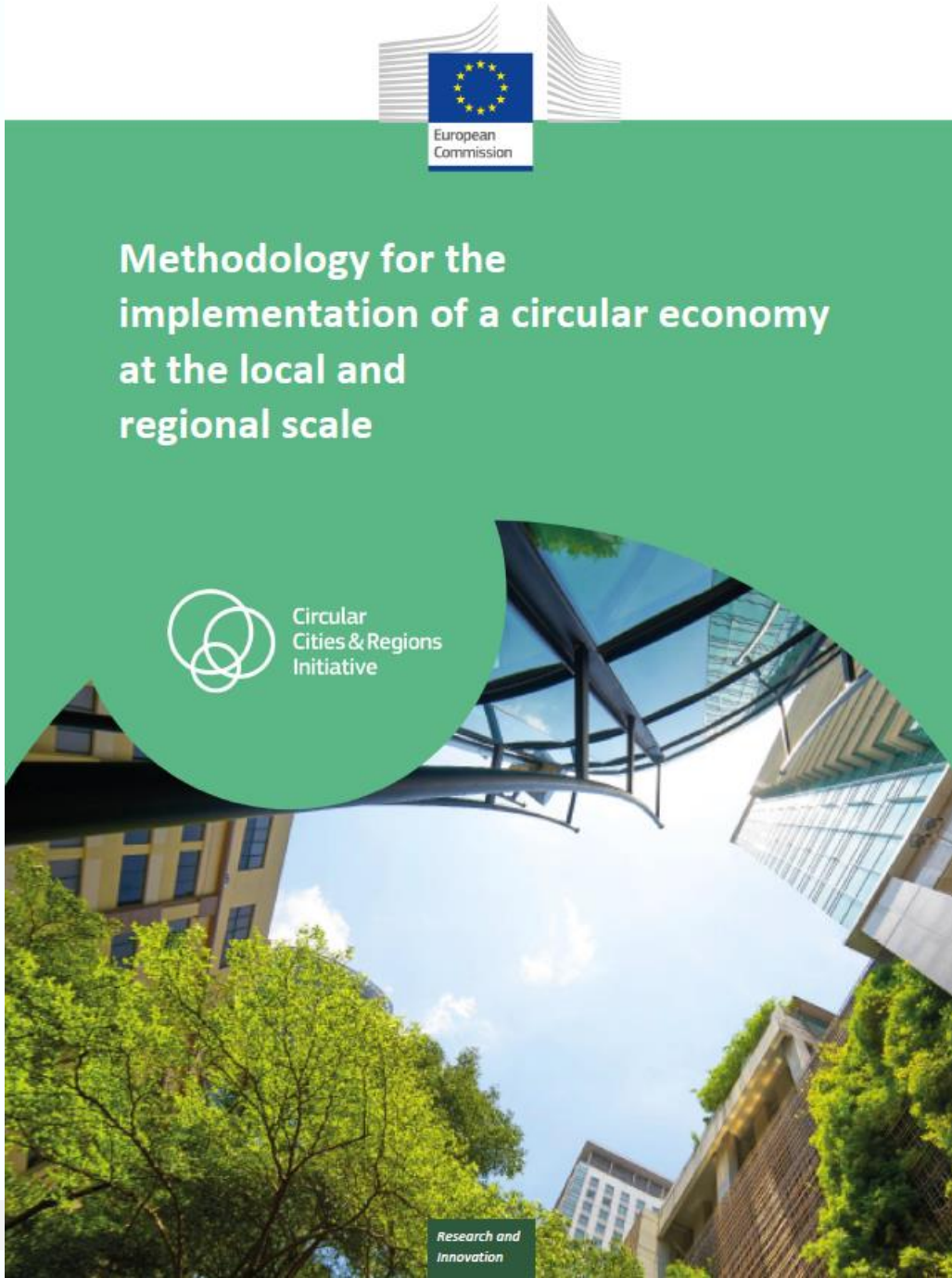

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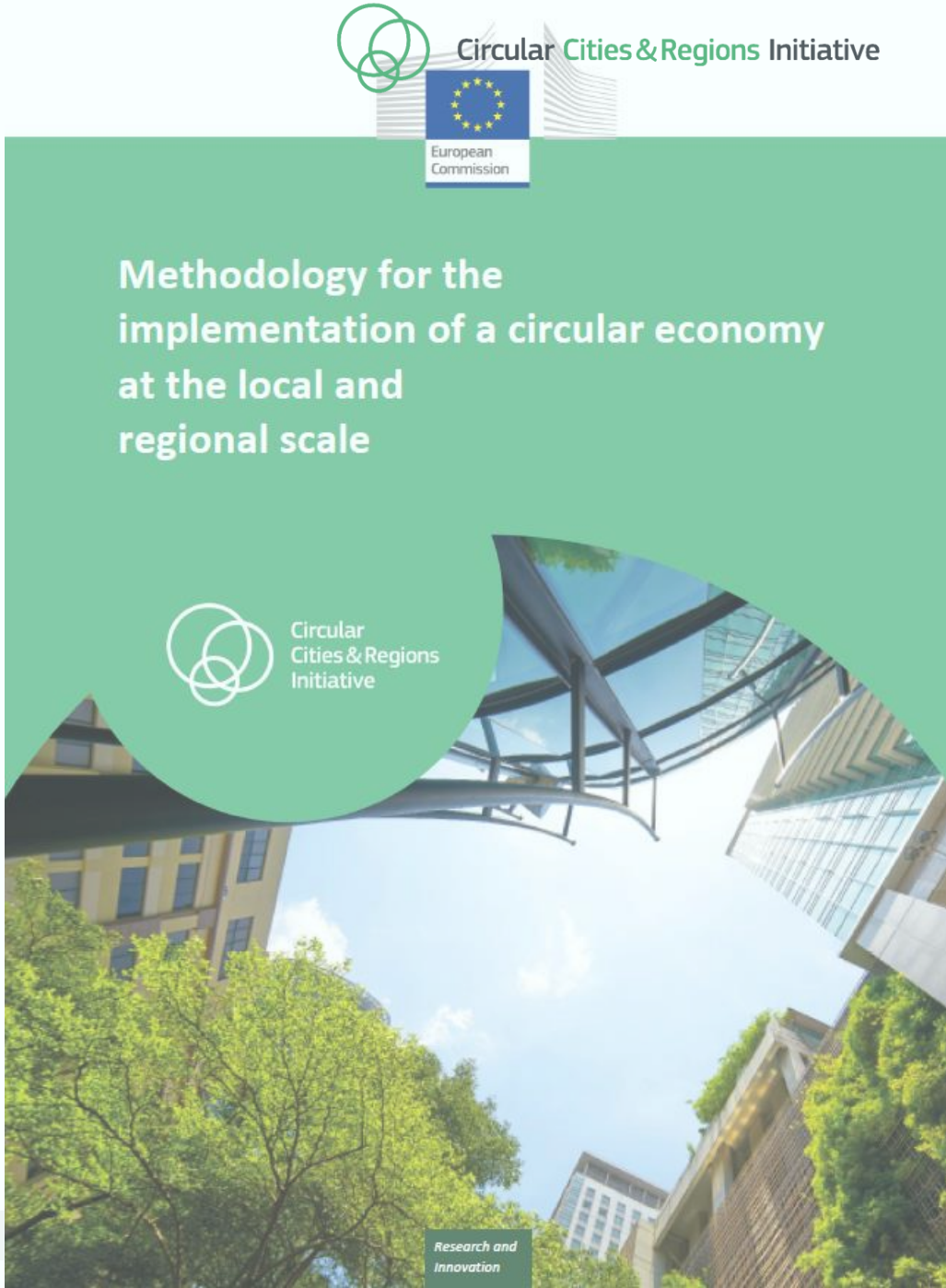

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## About CCRI-M

- Target group
- Reading guide

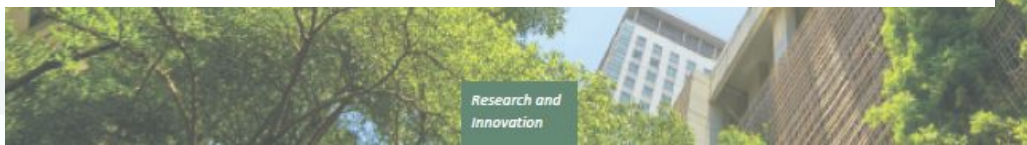
## Circular Economy in EU

- Drivers and needs
- EU policy framework and financing programmes
- Digitalization

## Key stakeholders in CE transitions at local level

## CCRI-CSO and the CCRI Methodology

- Approach and principles
- Methodology building process



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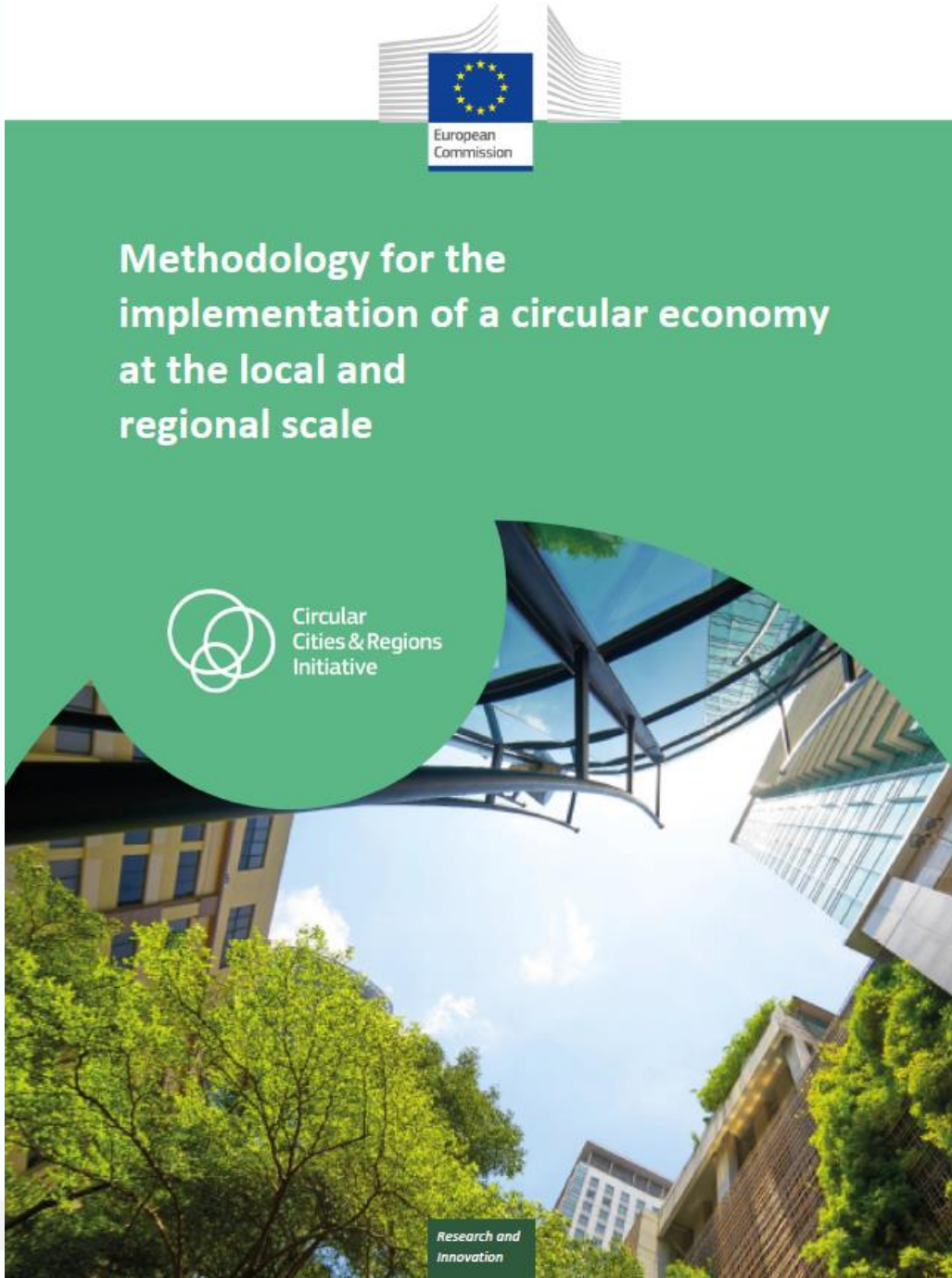

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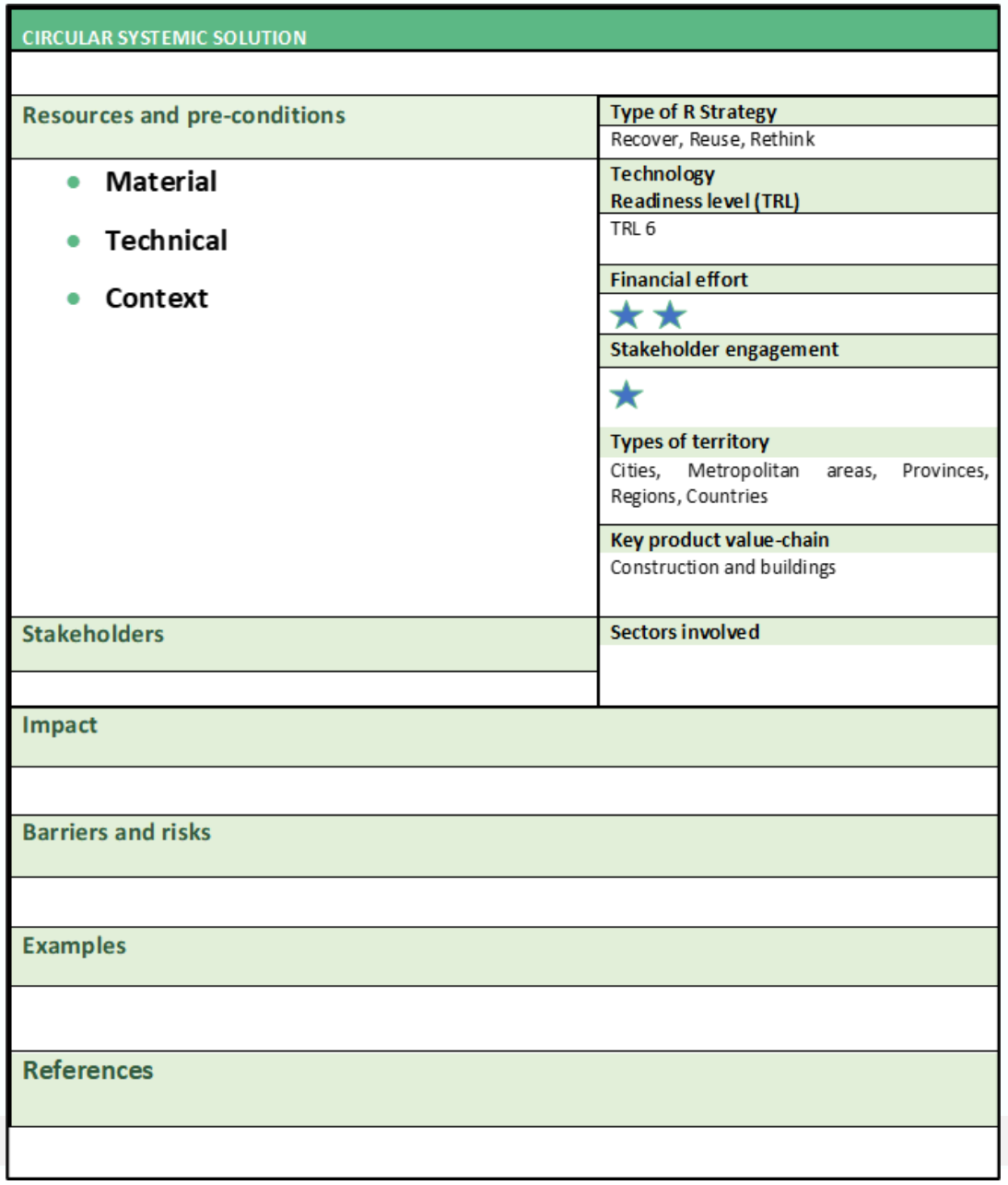

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**PESTEL analysis**

**Description:**

PESTEL stands for Political, Economic, Social, Technological, Environmental and Legal and it is a framework generally used to gain a better understanding of the external environment related to a business position and to provide direction for future operations. The PESTEL framework has been applied to the concept of a circular economy to assess the factors having an impact (positive or negative) on the development of such economy.

PESTEL analysis has two basic functions for a CSS. The first is that it allows identification of the environment within which a CSS operates. The second basic function is that it provides data and information that will enable cities and regions to predict situations and circumstances that it might encounter in the future.

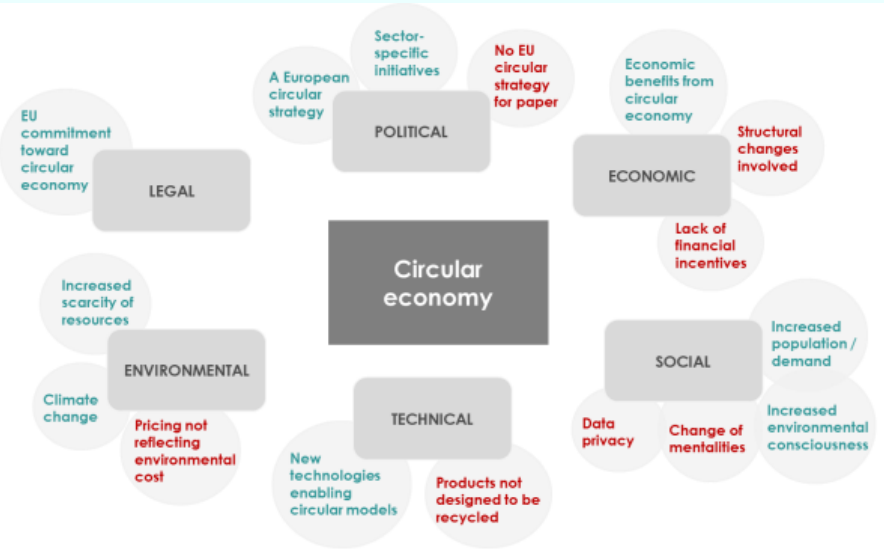
The PESTEL framework is generally implemented during the initial phases of CE/CSS strategy design to identify main barriers and drivers of the local territory. A first PESTEL analysis can be performed on desk-based research. This would later provide the starting point for discussion in the stakeholder seminar. Alternatively, PESTEL can also be implemented directly in a workshop by asking stakeholders to express their views on the different PESTEL factors. The framework is very intuitive and does not require experts to use it, but its simplicity also limits a more systemic understanding of territorial dynamics.

| CCRI Methodology phase |
| --- |
| Design |
| **Thematic area** |
| Understanding CSS barriers and drivers |
| **Complexity** |
| ★ |
| **Time** |
| ★ |
| **Financial effort** |
| ★ |

**Reference**

Obsterg et a., (2019). Urban Regions Shifting to Circular Economy: Understanding Challenges for New Ways of Governance. *Urban planning, Volume 4*, 19-31. https://doi.org/10.17645/up.v4i3.2158

**Visual identity**




ource: H2020 Project Paper Chain, D3.1 Comprehensive analysis of the existing and emerging approaches of circular conomy models in pulp and paper industry https://cordis.europa.eu/project/id/730305

References

Initiative

as, Provinces,

# CCRI Methodology

## And now?


# Methodology for the implementation of a circular economy at the local and regional scale

*CCRI office, Marco Bianchi*

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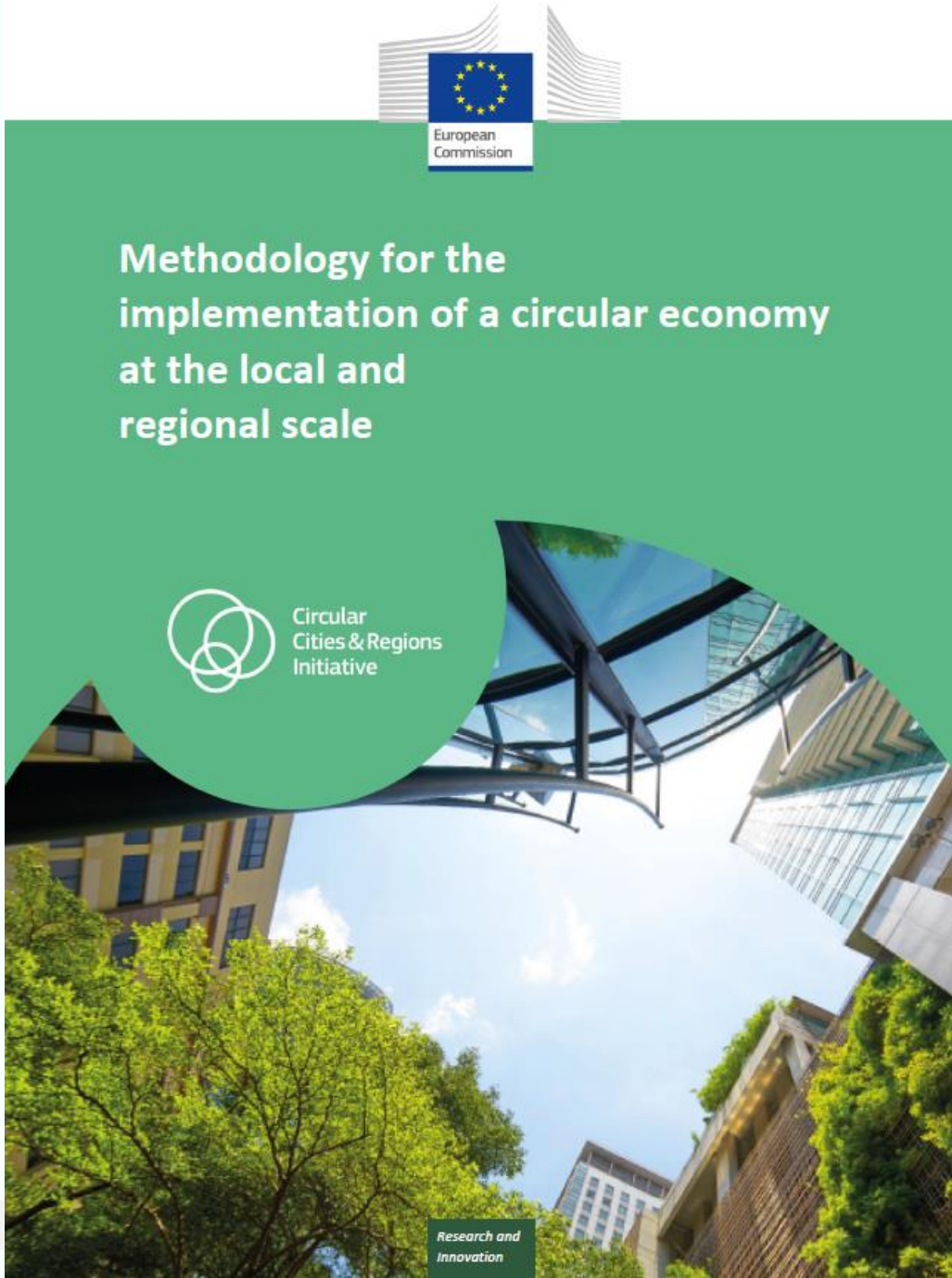

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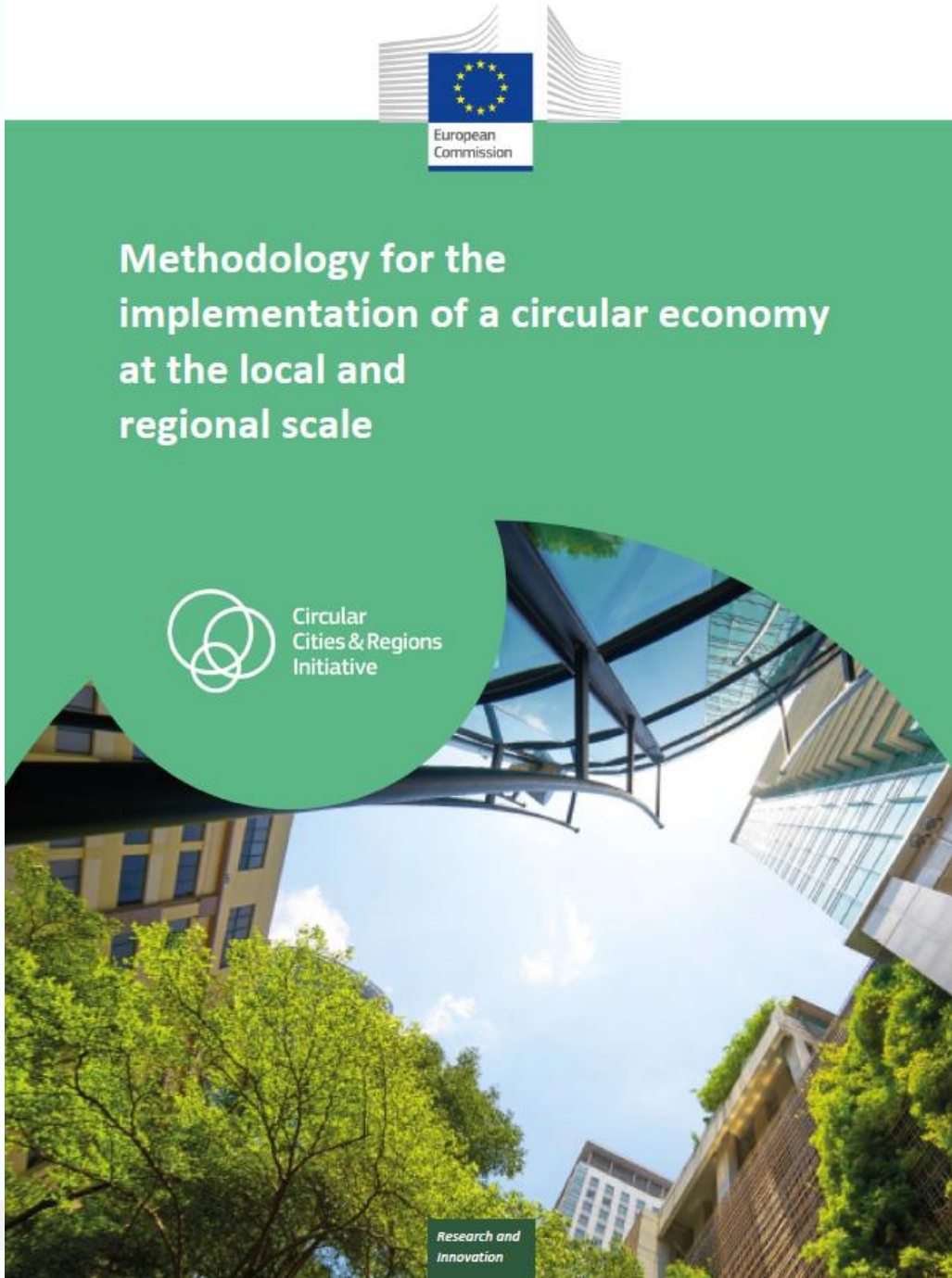
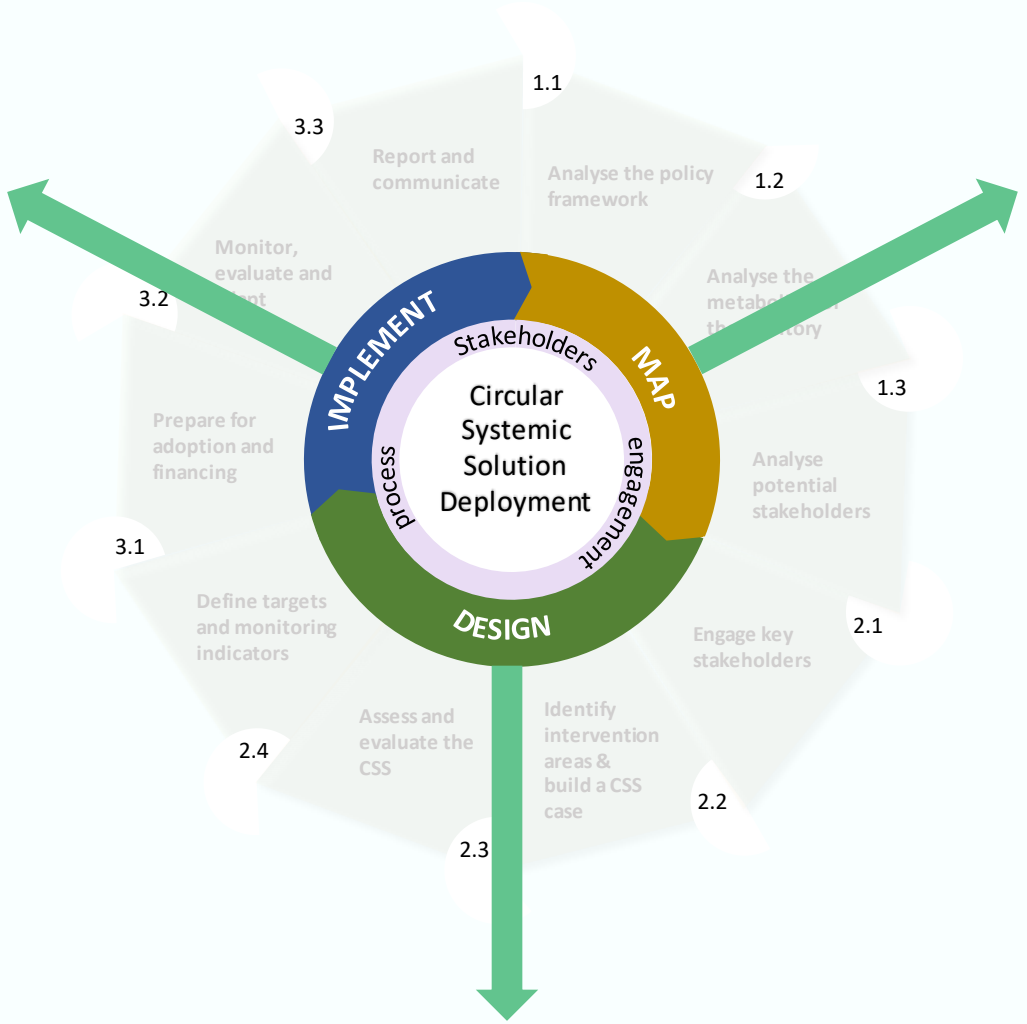


# Three main strategic phases

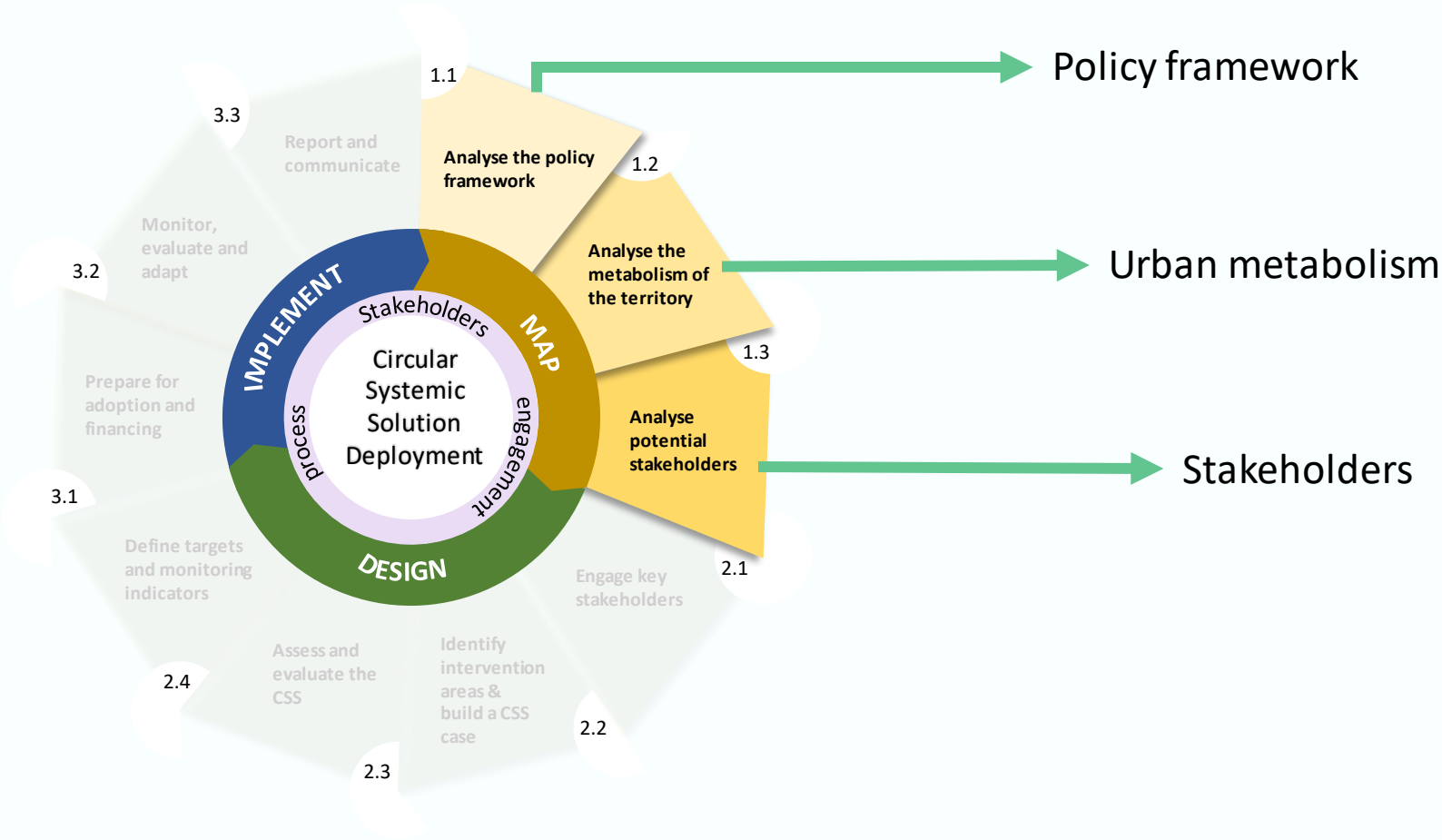
**IMPLEMENT**
the circular systemic solution

**MAP**
the territory and understand its potential




**DESIGN**
the circular systemic solution

# Several thematic/action areas to be addressed for each phase



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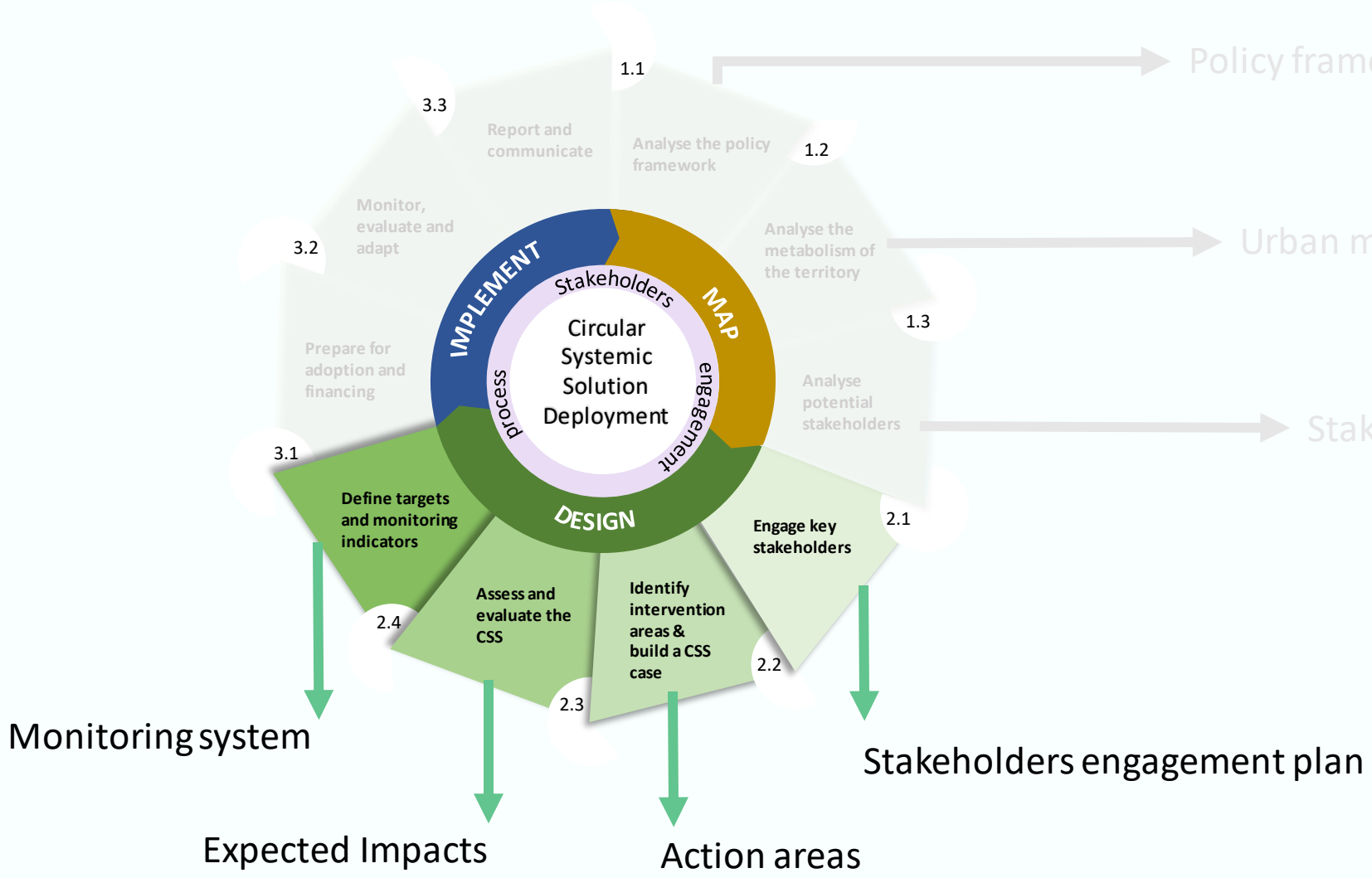

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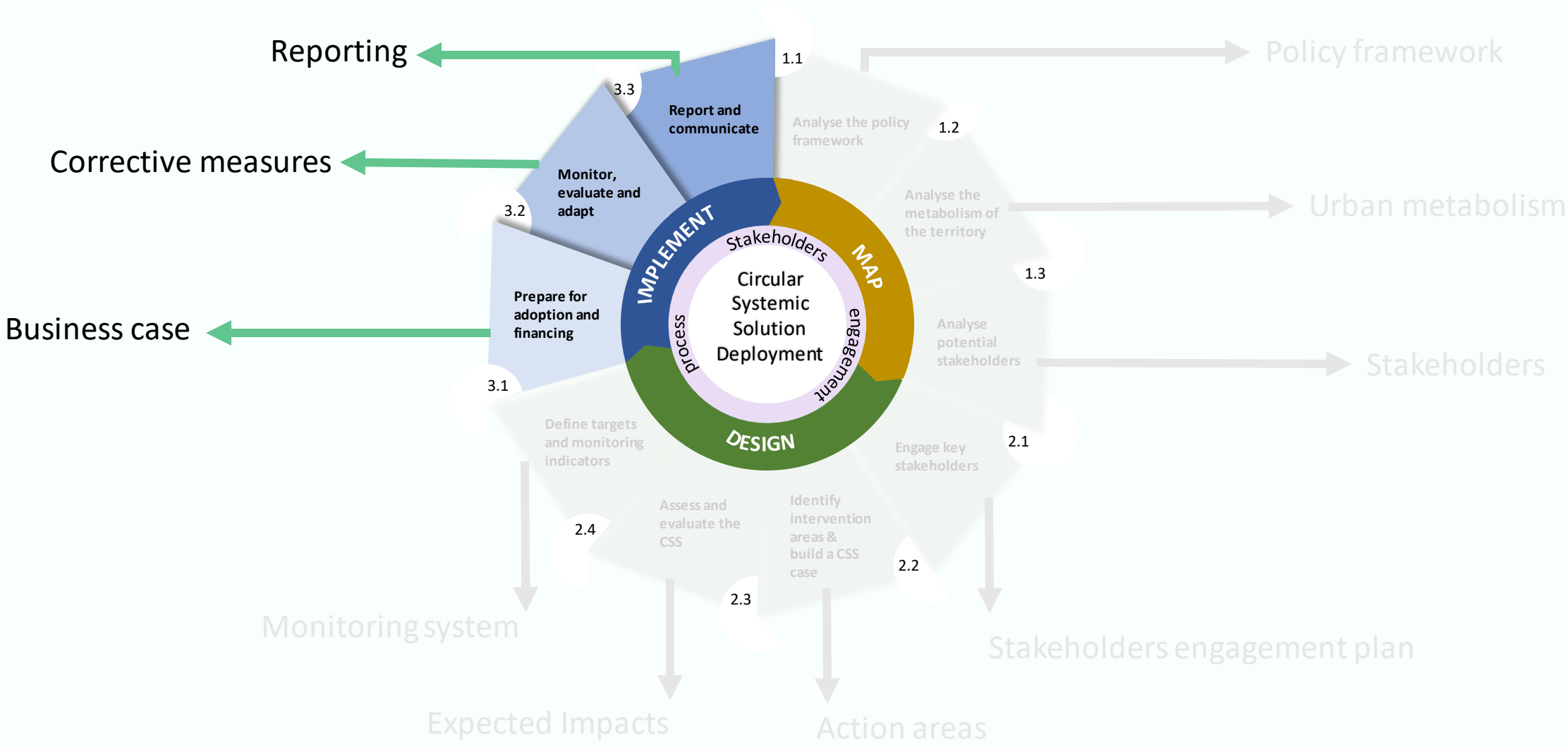
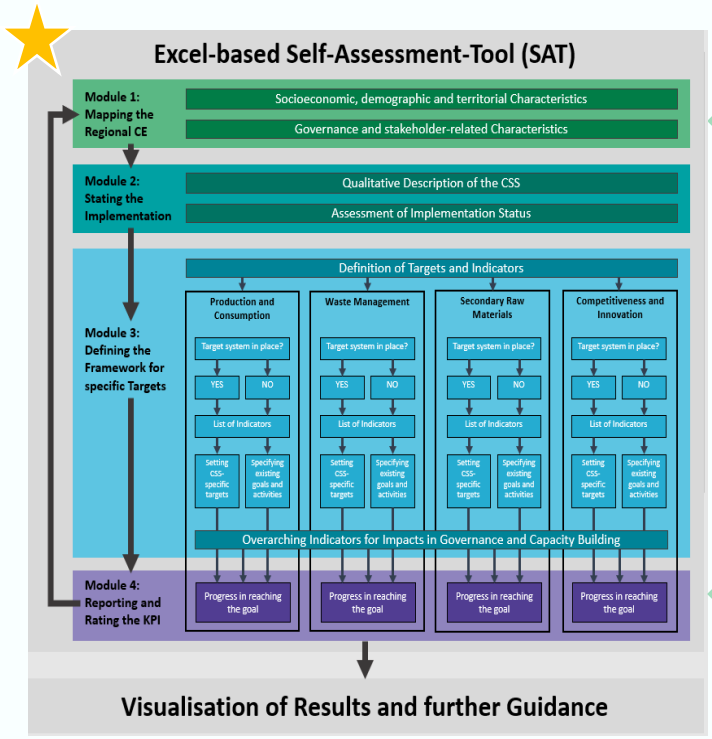


# A guidance document with operational features





Integrated with
the Self-Assessment tool

**Ambition: This phase aims to:**

- Generate a broad understanding of the landscape of existing CE related policies and financing opportunities
- Assess the baseline circularity of the territory (resource consumption and waste generation flows).
- Gain a systemic understanding of circularity perspectives at the local level
- Map key stakeholders, including civil society, and start defining a regional stakeholder group

**Ambitions' checklist**

| | | |
|---|---|---|
| **Policy framework analysis** | ✓ | Have existing (local, national and supranational) policies supporting the CE transition been identified? |
| | ✓ | Have potential policy or regulations gaps that could inhibit CE transition been identified? |
| | ✓ | What are the policy areas that allows for more targeted policy interventions in the local territory? |
| **Territorial framework analysis** | ✓ | Have the main flows of materials and waste in the territory been quantified, mapped, and benchmarked with other peers? |
| | ✓ | What the broader sectoral area with the greatest potential to retain value (for civil society, business and environment) are? |
| **Stakeholder analysis** | ✓ | Have key stakeholders been identified across all relevant groups? (industries, business including SMEs, academy, civil society and institutional bodies) |
| | ✓ | Have synergies, barriers and enablers for key stakeholder engagement been evaluated? |

Circular Cities & Regions Initiative

# A guidance document with operational features

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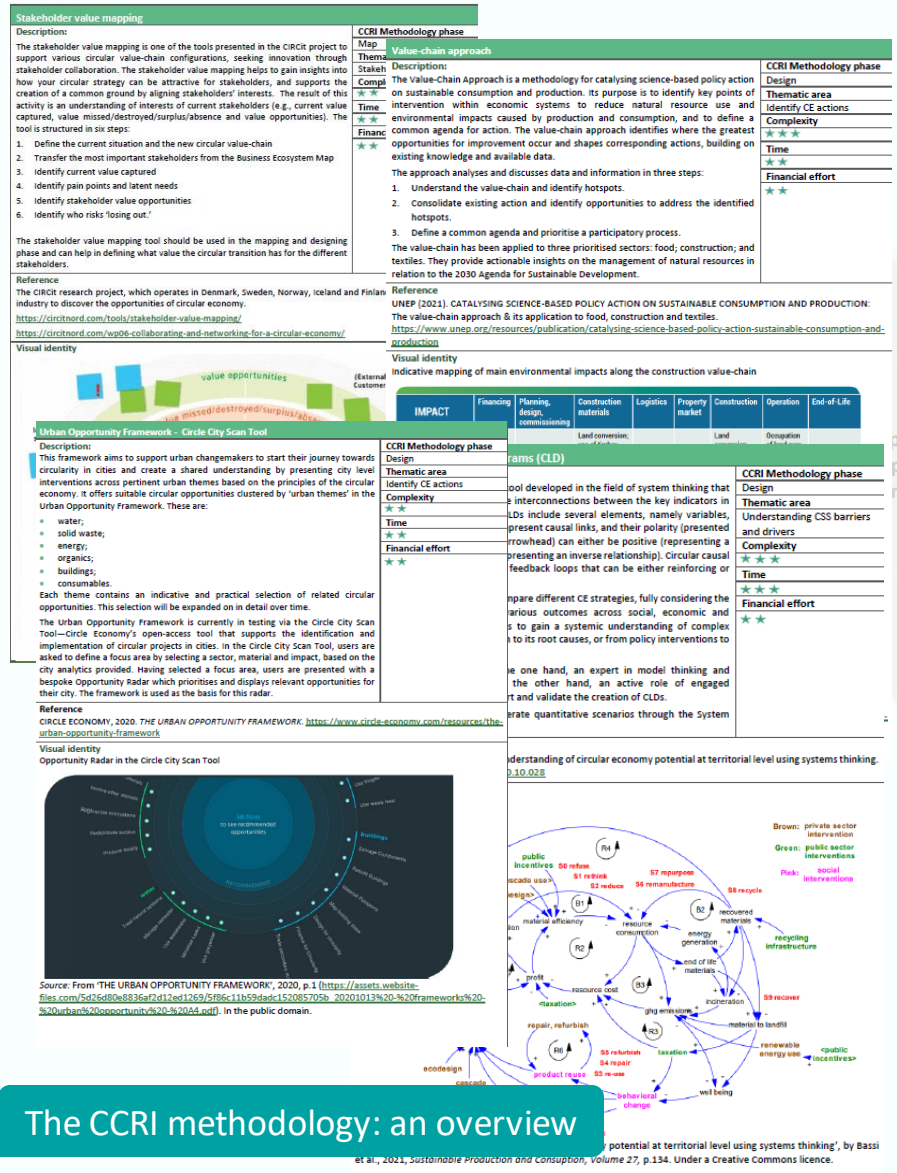
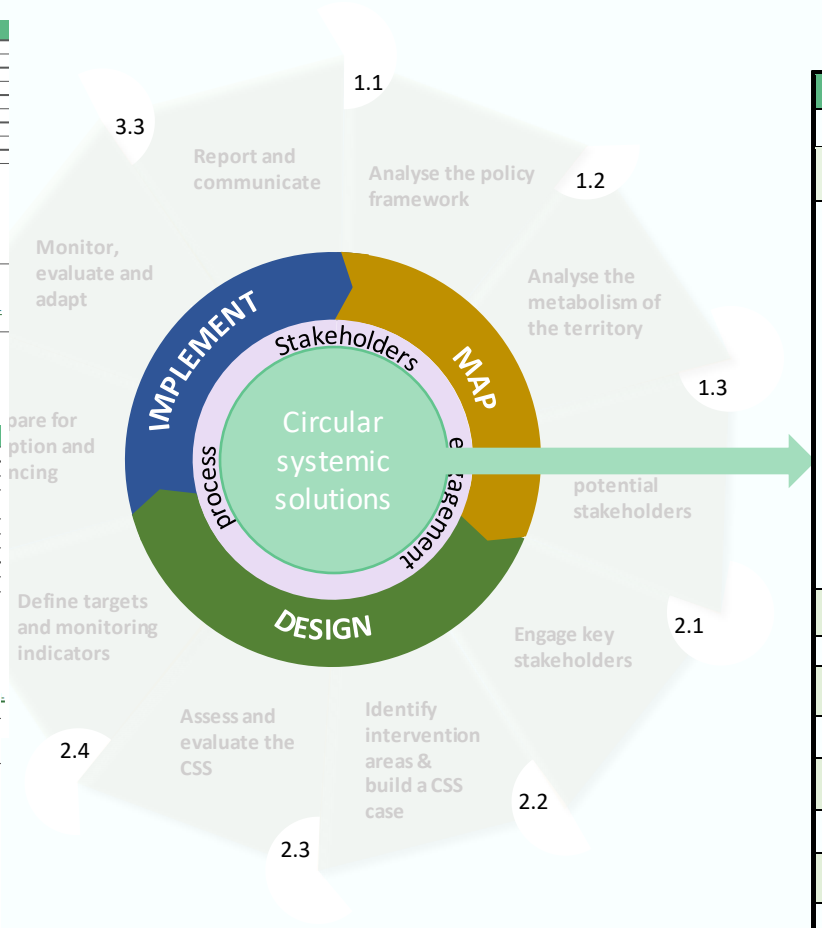


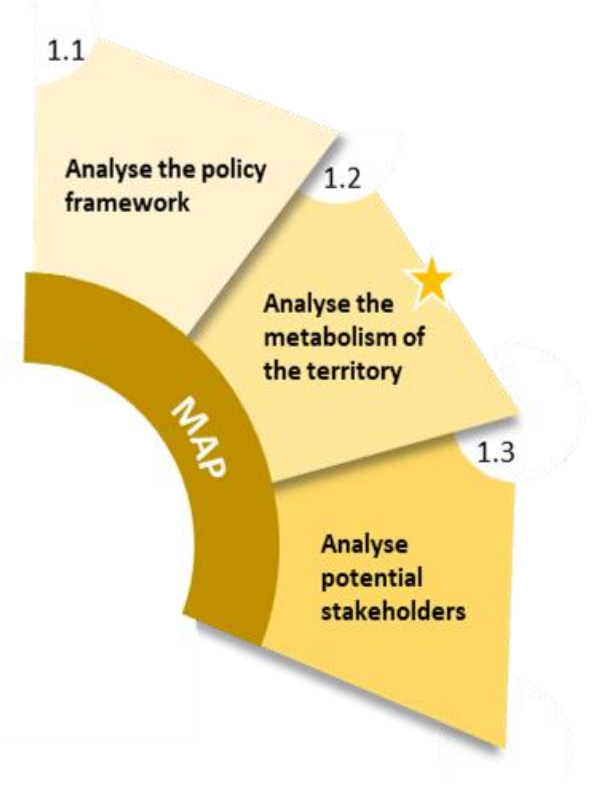

Tools factsheets

| CIRCULAR SYSTEMIC SOLUTION | |
|---|---|
| **Resources and pre-conditions**<br>• **Material**<br>• **Technical**<br>• **Context** | **Type of R Strategy**<br>Recover, Reuse, Rethink<br>**Technology Readiness level (TRL)**<br>TRL 6<br>**Financial effort**<br>★★<br>**Stakeholder engagement**<br>★<br>**Types of territory**<br>Cities, Metropolitan areas, Provinces, Regions, Countries<br>**Key product value-chain**<br>Construction and buildings |
| **Stakeholders** | **Sectors involved** |
| **Impact** | |
| **Barriers and risks** | |
| **Examples** | |
| **References** | |

Circular systemic solutions portfolio

The CCRI methodology: an overview

# 1. Map phase




A **deep understanding of the local territory** is the key for the creation of effective, evidence-based, circular solutions.

Investing time and resources to get a complete picture of the **local metabolism** will facilitate both the definition of a CSS and its successful implementation.

It is important not to overlook an accurate review of **local development policies** to ensure the alignment of a CSS with overall local strategies

# 1.1 Analyse the policy framework

- **Local authorities** play a crucial role in the transition towards a circular economy as they have a wide range of actions. They are also responsible for ensuring the enabling conditions to unlock circular potential.
- A review of the existing policy framework (i.e., policy sectors, intervention areas, regional strategies) is important to identify **goals and actions from public administrations** that could be taken into consideration to support circular economy initiatives.
- The analysis of the policy framework can also help **identify policy objectives that may inhibit or hinder potential circular economy** activities that need to be taken into account.
- The **alignment of CSSs to regional and/or local strategies** would also foster policy support. In this sense, CSSs should be understood as part of a broader local or regional territorial action plan, while at the same time effectively applying the circular economy concept.

Built environment and spatial planning

Public procurement and infrastructures…

Regulatory frameworks, awareness campaigns…

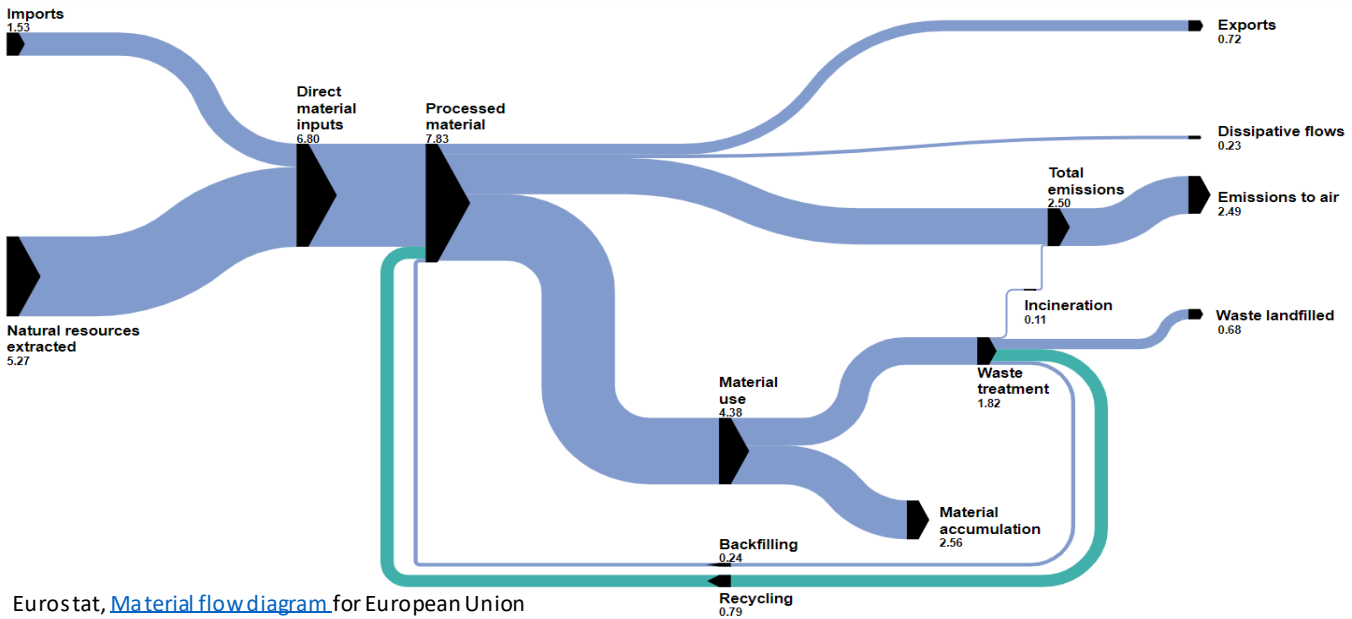
Waste & water management

Local development

Business schemes, Collaboration platforms…

# 1.2 Analyse the metabolism of the territory

- **Urban metabolism** is a conceptual framework to facilitate the description and analysis of material and energy flows within cities.
- **Assessing the current level of circularity provides the basis to identify priority areas for intervention.** The circularity baselining gives a first indication of the areas in which a city or region is more or less advanced compared to their peers. It provides useful input for defining targets and leverage for changes.




Eurostat, Material flow diagram for European Union

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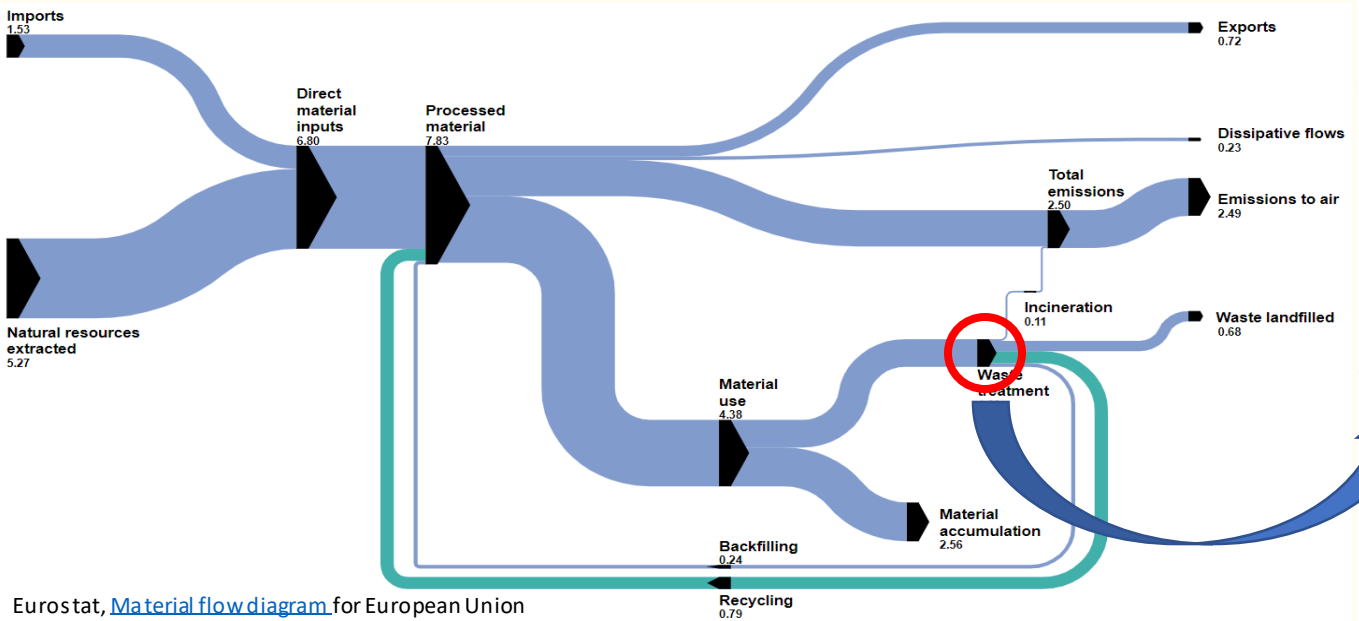
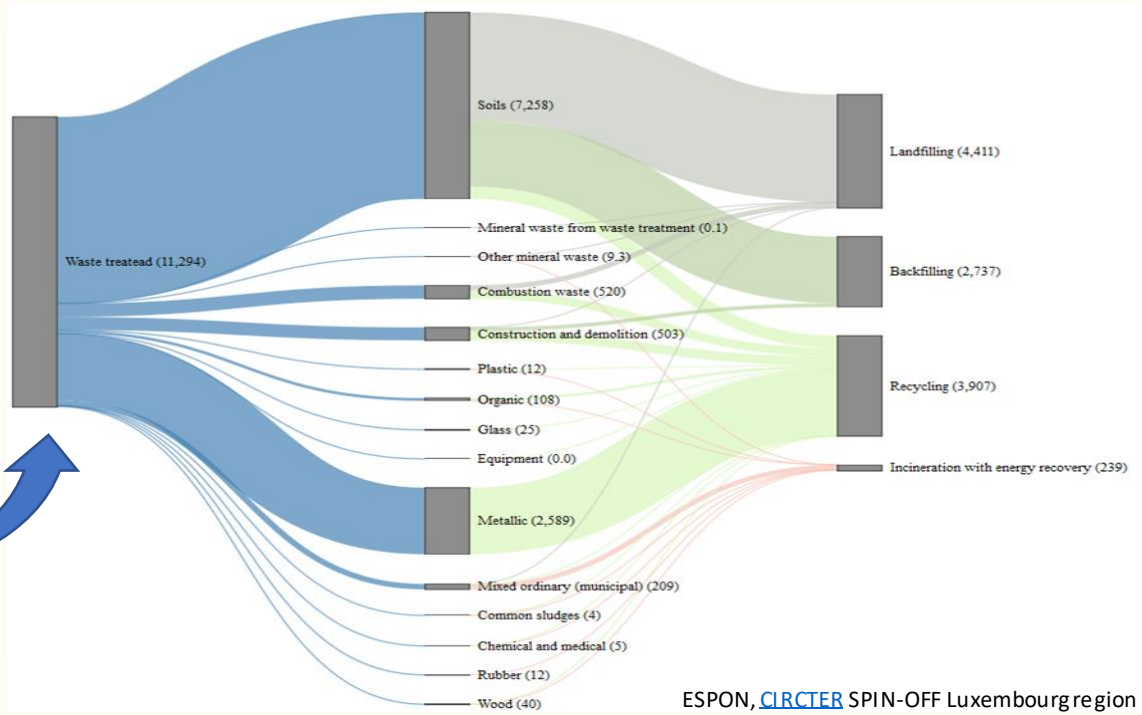


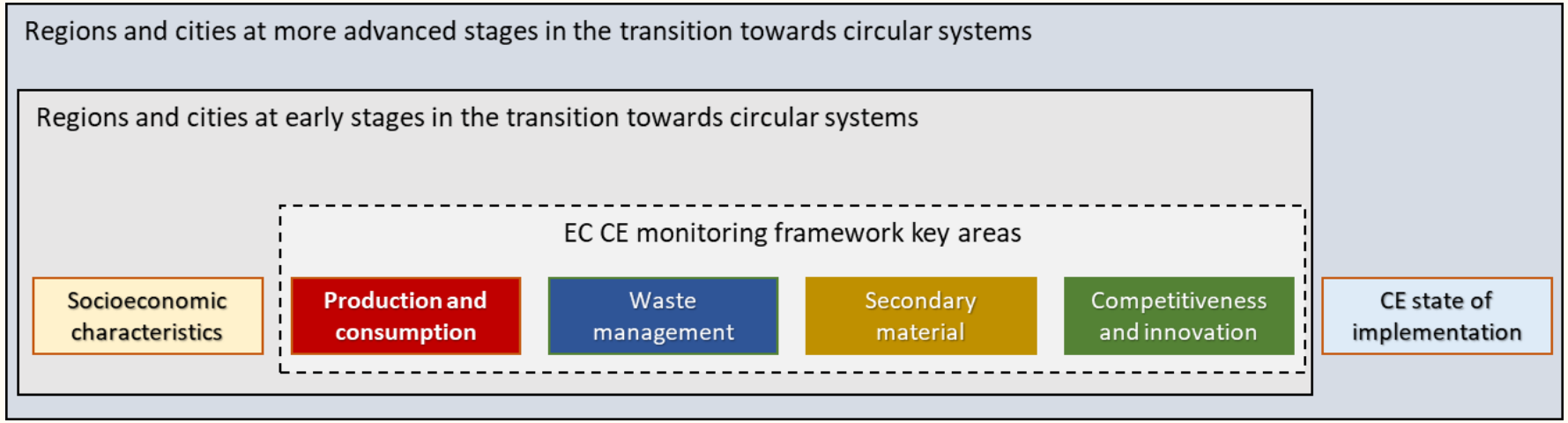

Eurostat, Material flow diagram for European Union




ESPON, CIRCTER SPIN-OFF Luxembourg region

# 1.2 Analyse the metabolism of the territory

- The **CCRI Methodology promotes a baseline monitoring framework for cities and regions in line with the EC CE monitoring framework** in which indicators are classified into four key circularity areas




For each key circularity area, the CCRI methodology provides a list of indicators generally applied at city/regional level differentiating between ***basic*** and ***advanced*** indicators.

This step is also operationalised in the CCRI **self-assessment tool**

# Material flow analysis – Amsterdam case study

https://journey.circle-economy.com/circularamsterdam#157653

- Material flow analysis of **key sectors** (consuming most resources and produce the most waste).
- Material flow analysis used to identify where the **most pressing environment issues** are within the city.
- Identified how **resource inputs** (e.g. water, energy, metals and minerals) are **used** by various sectors of the city and how waste **outputs** produced by these sectors are processed.

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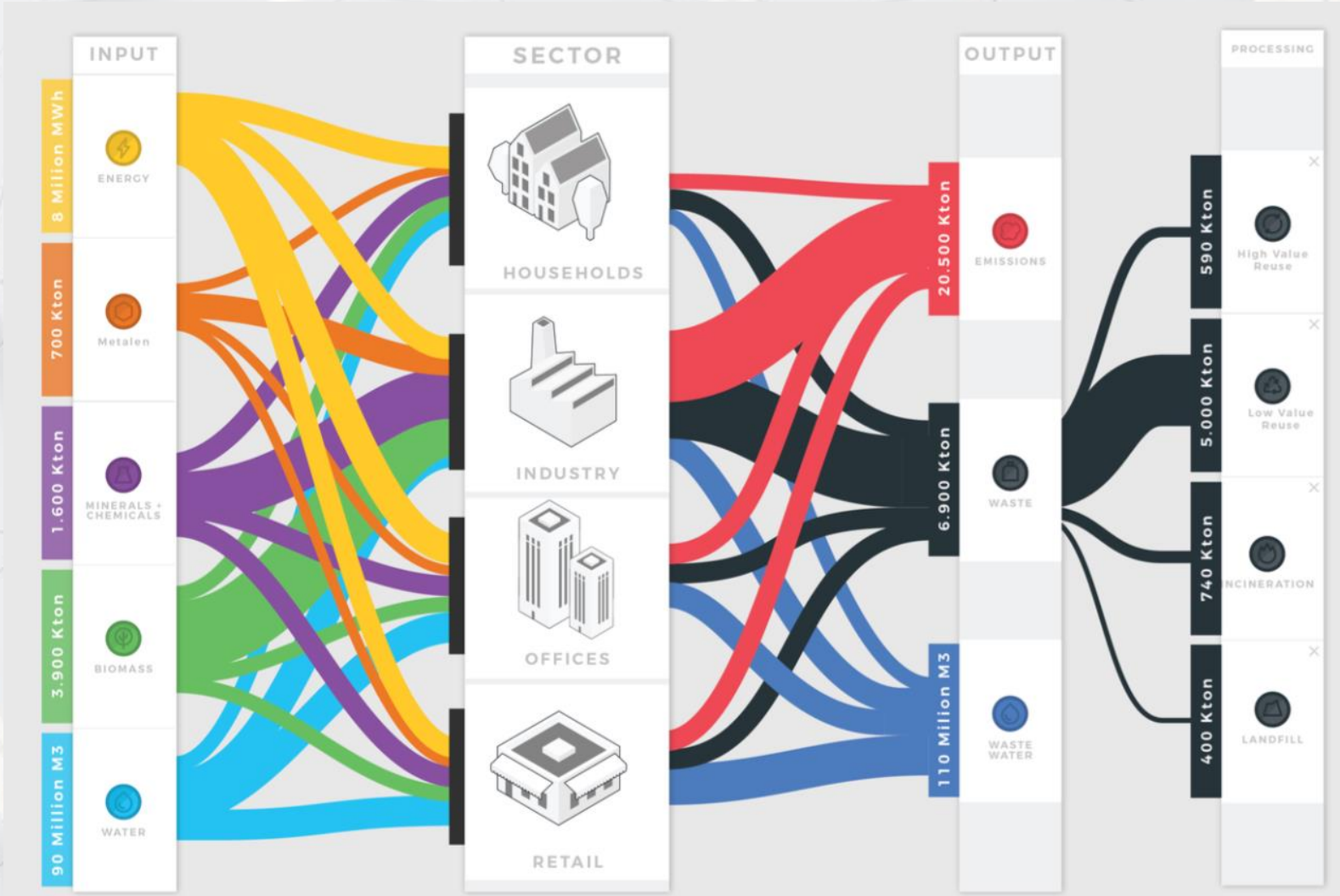
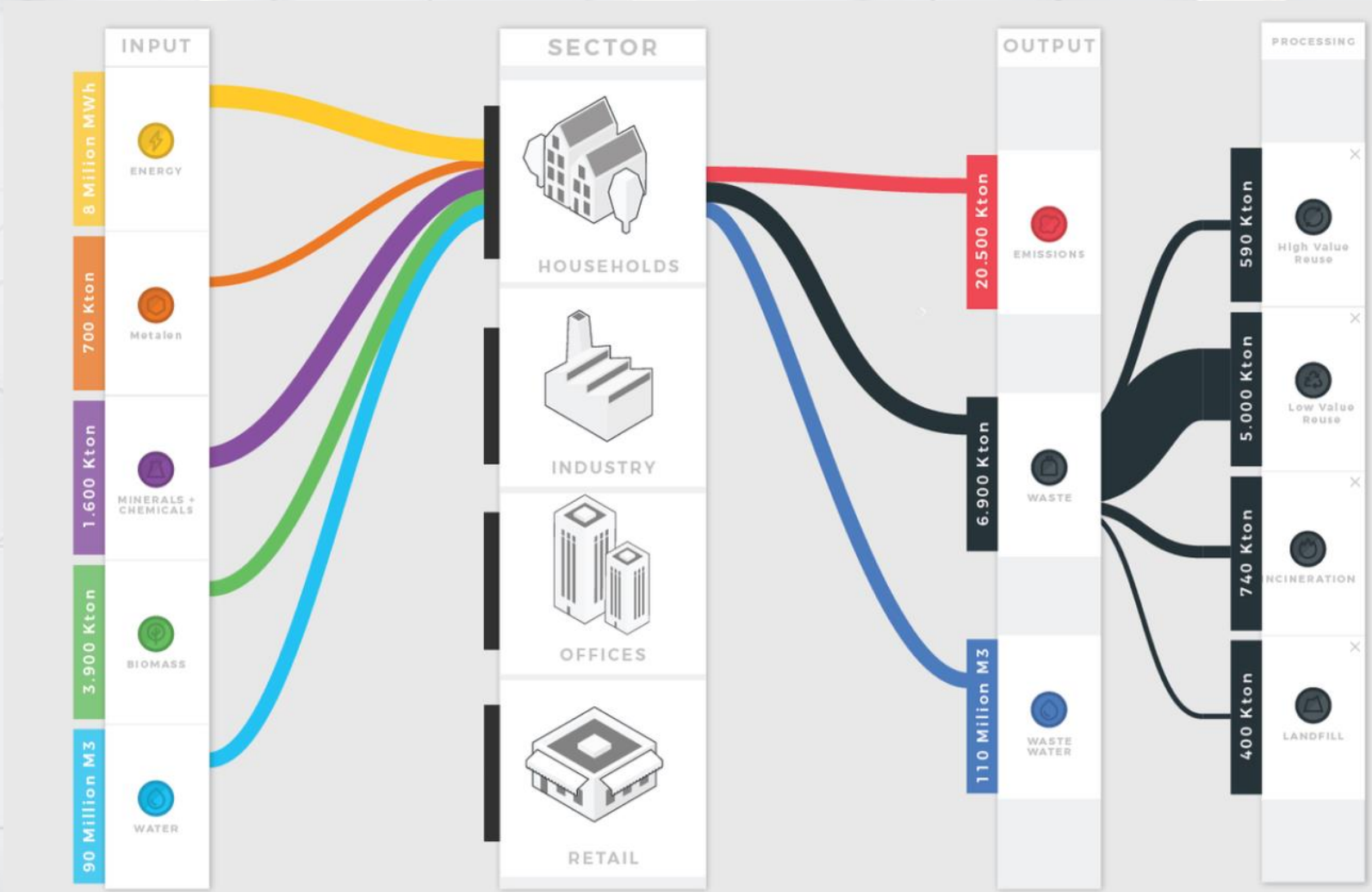



Real-life example: Amsterdam case study

# e.g. **households**



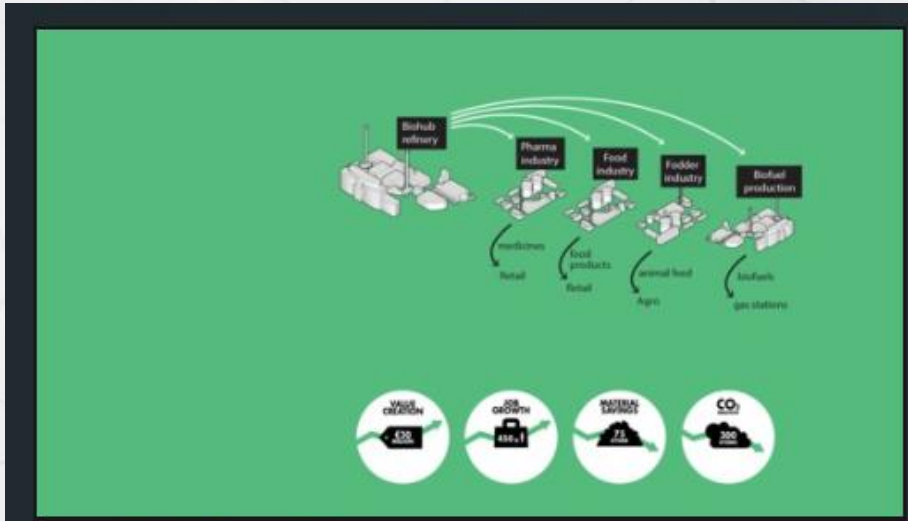

Real-life example: Amsterdam case study

# Circular strategies

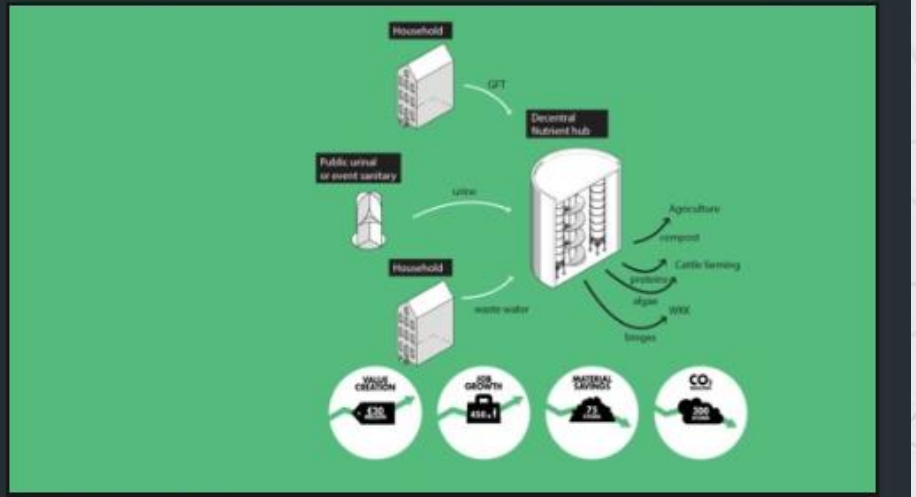
- Starting points: **construction** and **biomass** (including food).

- Detailed circular strategies for the city highlighting:
  - Impact on **job** creation
  - Carbon **emissions**
  - **Material consumption**
  - Economic **value**

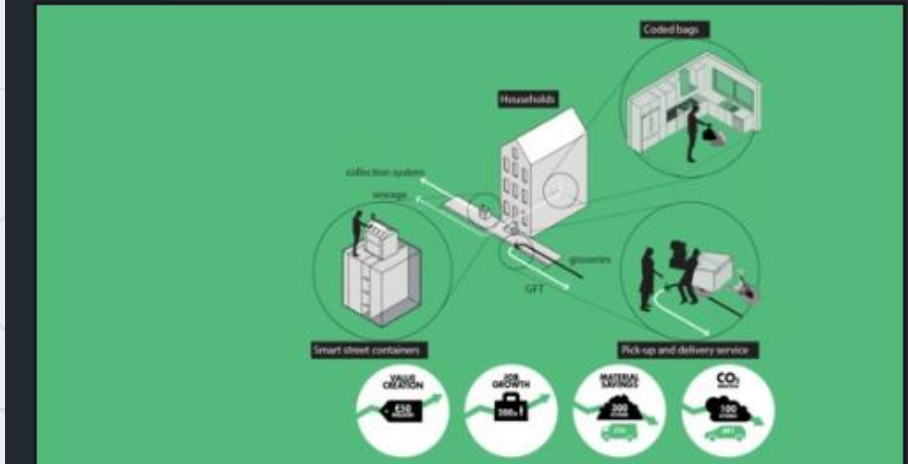
# Circular strategies on biomass and food sector



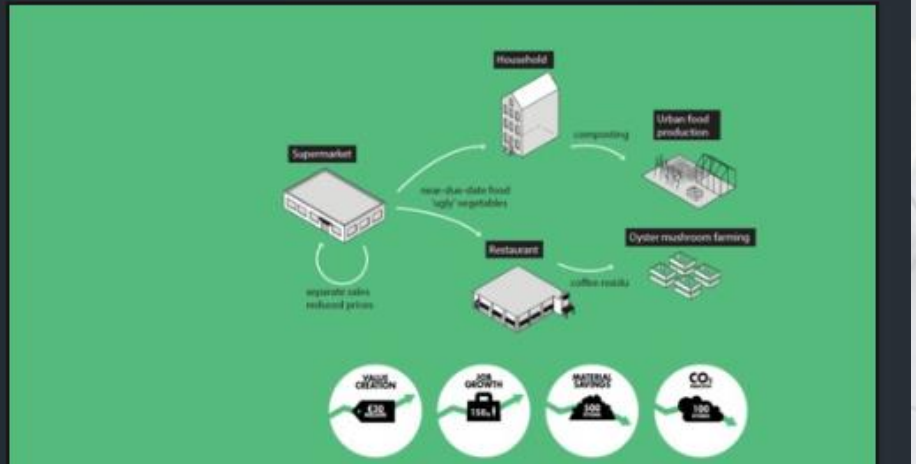

Cascading of organic flows




Bio-refinery hub



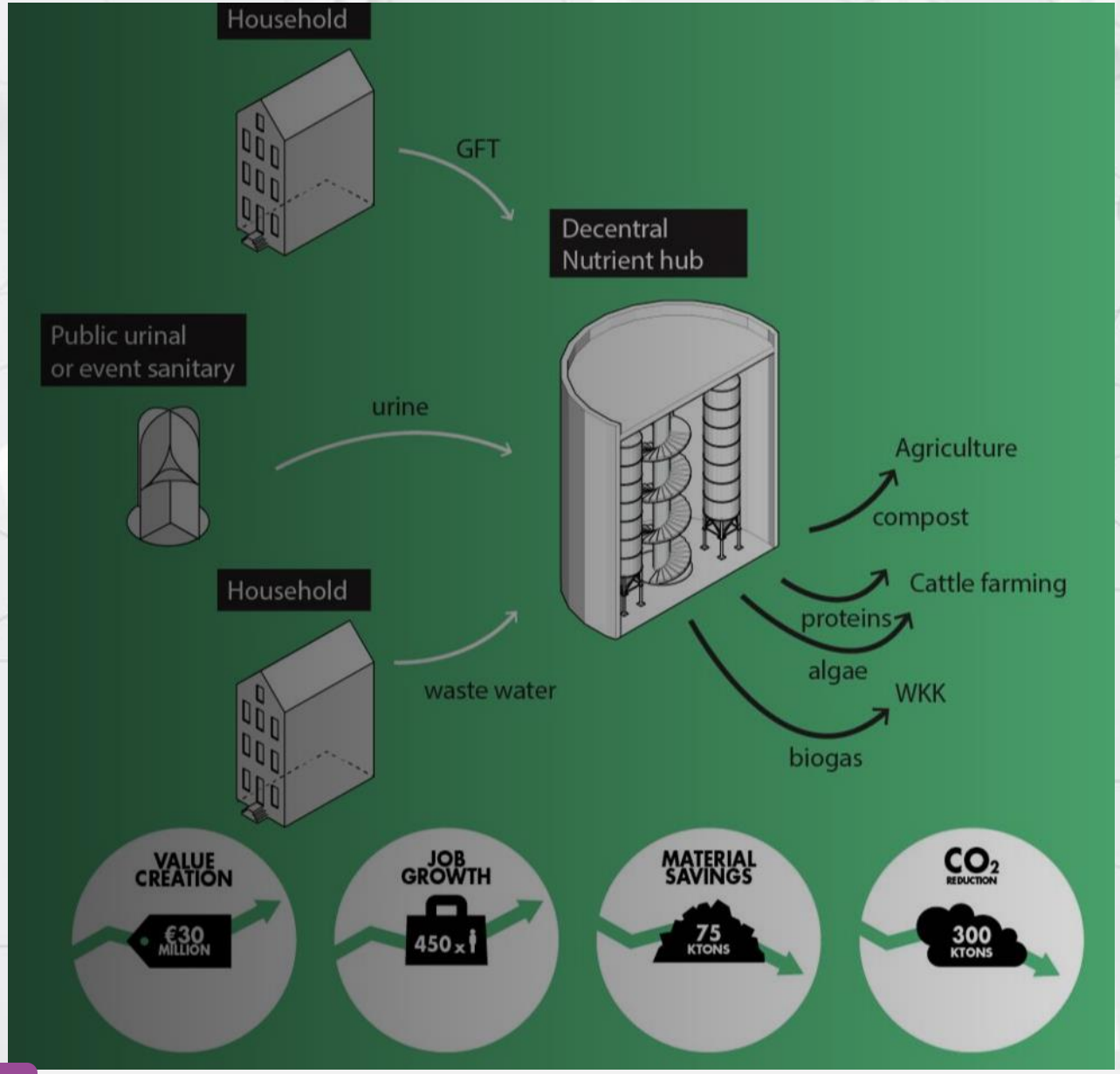

Waste separation and logistics




Recovering nutrients

Real-life example: Amsterdam case study

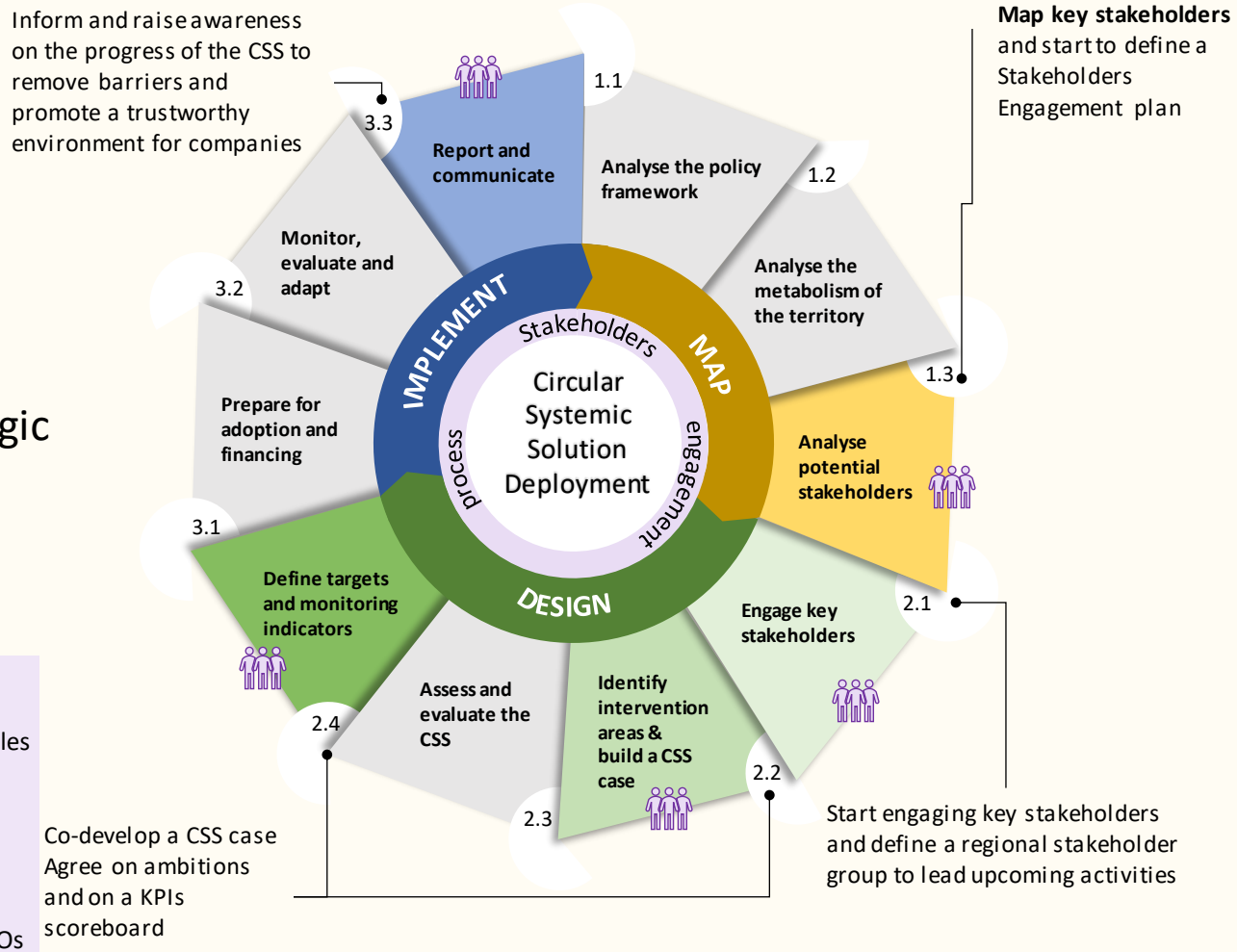
# Bio-refinery hub




Real-life example: Amsterdam case study

# 1.3 Analyse potential stakeholders

- **Stakeholders** refer to people and organisations having a direct or indirect interest in CSSs and participating in activities making these possible.
- Key stakeholders should be identified by answering strategic **'who', 'what', 'how' and 'when'** political questions.

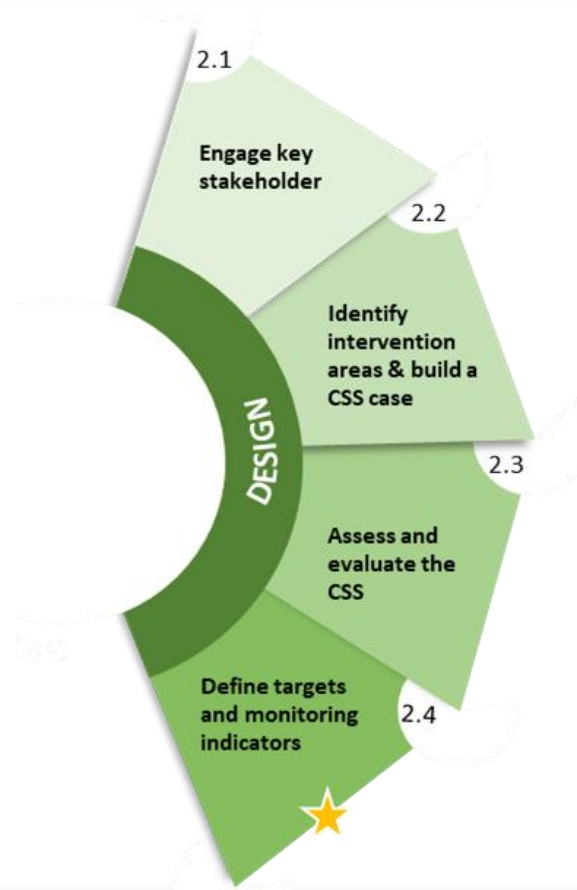



**STAKEHOLDER IMPLICATIONS AND EXPECTED MAIN ROLES**

Purple boxes are introduced in the document to further detail the involvement of key stakeholders, their roles and their activities across the different phases of the methodology according to their typology.

Public administration | Industry and business | Civil society | Academia, RTO and NGOs

# 2. Design phase




Circular economy initiatives comprise a huge range of actions.

This variety allows **any territory to tailor its circular transition to its own needs.**

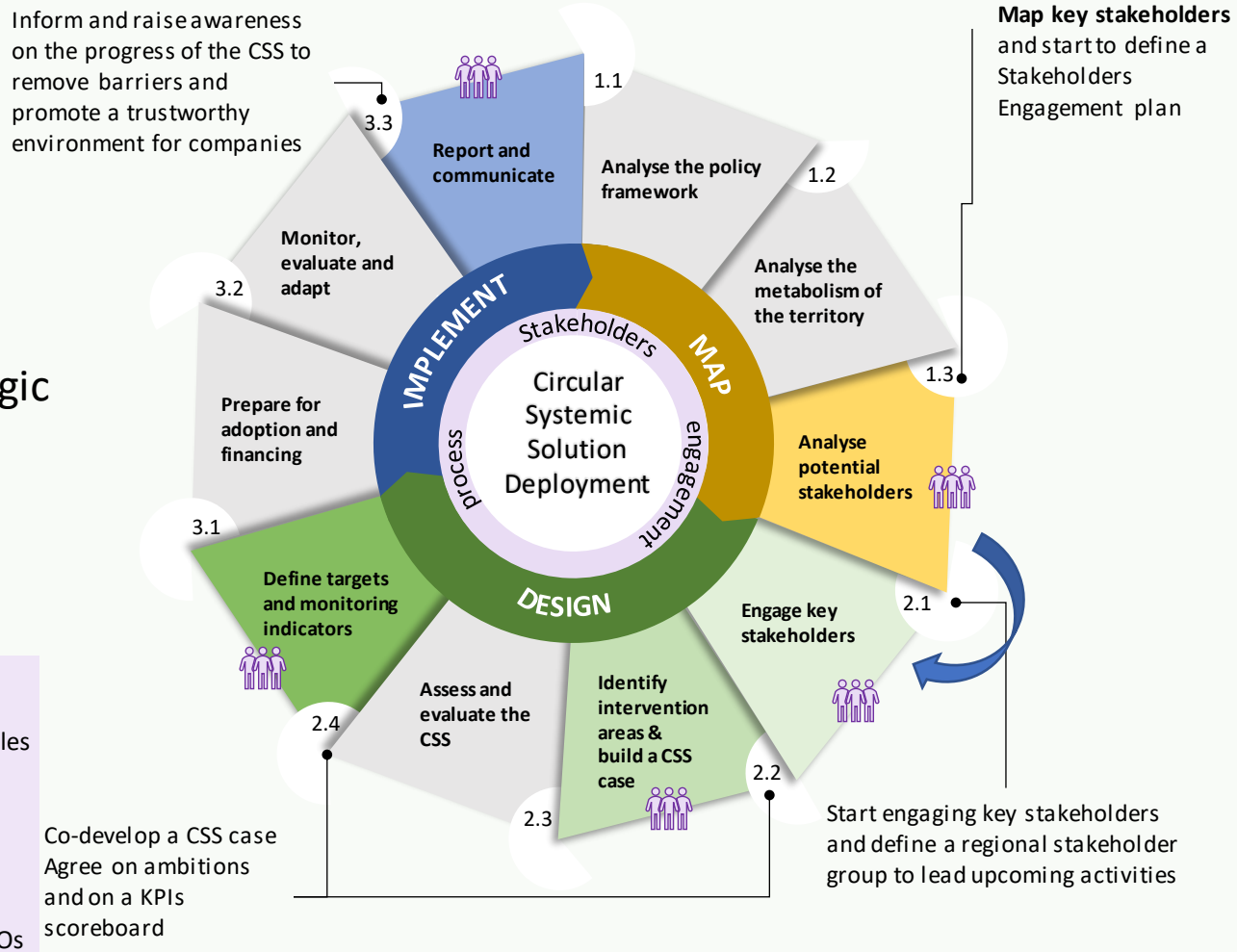
But it can also bring regions and cities designating rather **general CEAPs that do not materialise into concrete CSS**.

To translate potential actions into workable and executable CSS, it is important to determine their **feasibility and potential impacts**.

**Prioritising areas** of action that produce the **greatest local impact** is key to ensuring stakeholder consensus and ultimately the effective deployment of CSS.

# 2.1 Engage key stakeholders

- **Stakeholders** refer to people and organisations having a direct or indirect interest in CSSs and participating in activities making these possible.
- Key stakeholders should be identified by answering strategic **'who', 'what', 'how' and 'when'** political questions.




**STAKEHOLDER IMPLICATIONS AND EXPECTED MAIN ROLES**

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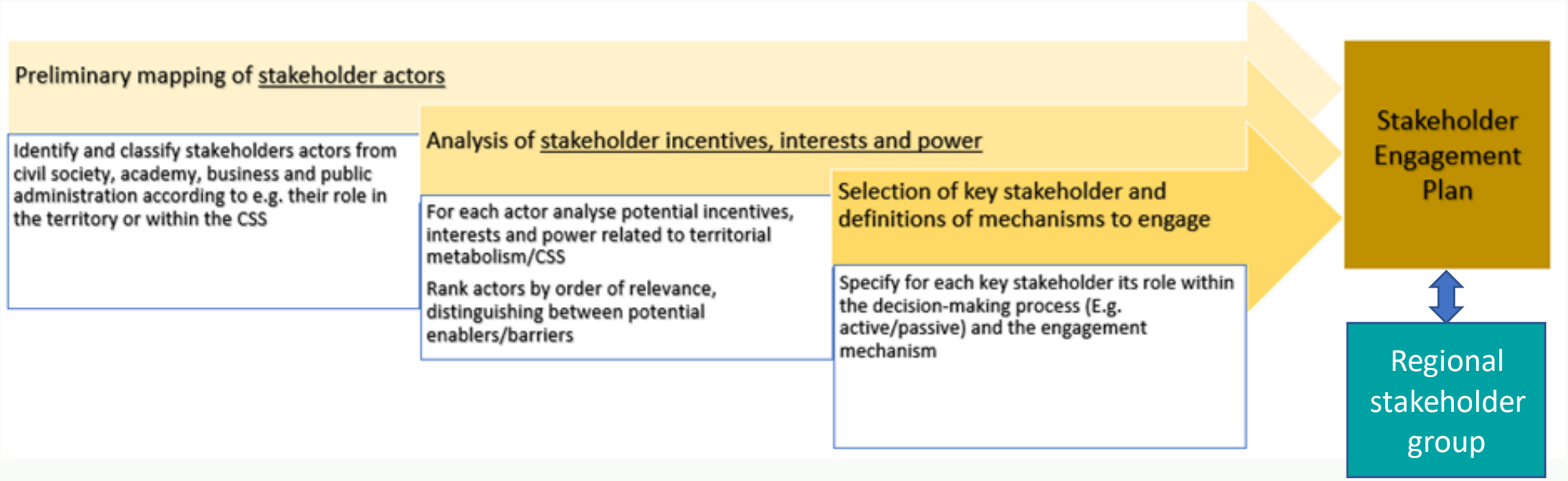
Public administration | Industry and business | Civil society | Academia, RTO and NGOs

# 2.1 Engage key stakeholders

Building on the stakeholder mapping analysis, it is critical to **determine** the level of **influence** and level of **interest** of selected stakeholders, and accordingly, the most appropriate engagement approach.

Due to the systemic nature and complexity of circular solutions, the decision-making process that will guide the creation and implementation of a CSS will not only involve a large number of stakeholders but will also last several years. For these reasons, it is recommended to plan and keep track of stakeholder engagement activities in a systematic way though the definition of a **stakeholders' engagement plan (SEP).**

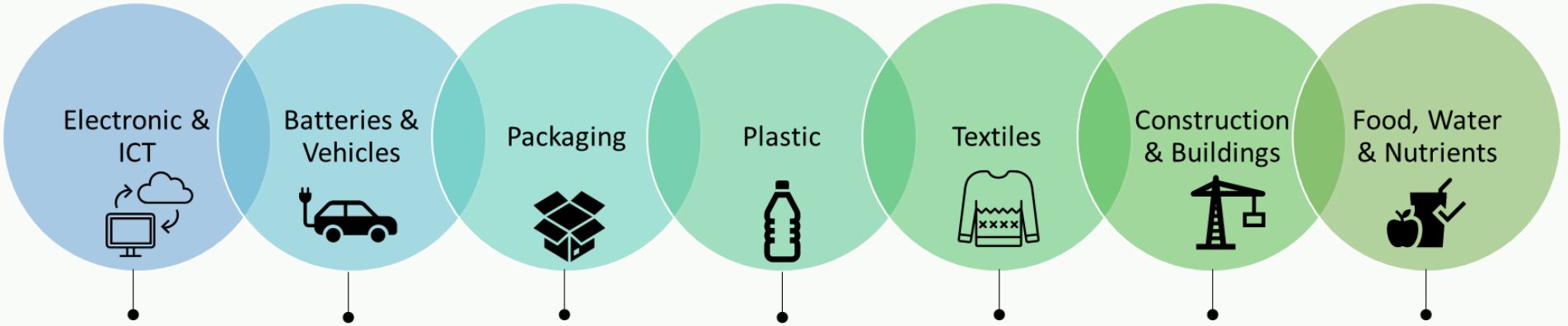
The **SEP defines the governance of the stakeholders' engagement process** (who does what, roles and responsibilities)



# 2.2 Identify intervention areas & CE actions

➢ Which **product value-chain or sector** should be prioritised?

✓ Systemic-approach
✓ Clear regulation frameworks and supporting financing schemes




- Circular Electronics Initiative
- Ecodesign directive
- Directive 2012/19/EU on Waste from Electrical and Electronic Equipment (WEEE)
- Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment

- Directives on end-of-life vehicles (ELV Directive) (e.g., 2000/53/EC, 2018/849)
- Directive 2006/66/EC on Batteries and Accumulators

- Directive (EU) 2018/852 on Packaging and packaging waste

- EU Strategy for Plastics in the Circular Economy
- Directive (EU) 2019/904 on single use plastic products

- EU Strategy for sustainable and circular textiles
- Ecodesign Directive

- Strategy for a Sustainable Built Environment
- Regulation (EU) 305/2011 Construction Product
- Directive 2008/98/EC on construction and demolition (C&D) waste

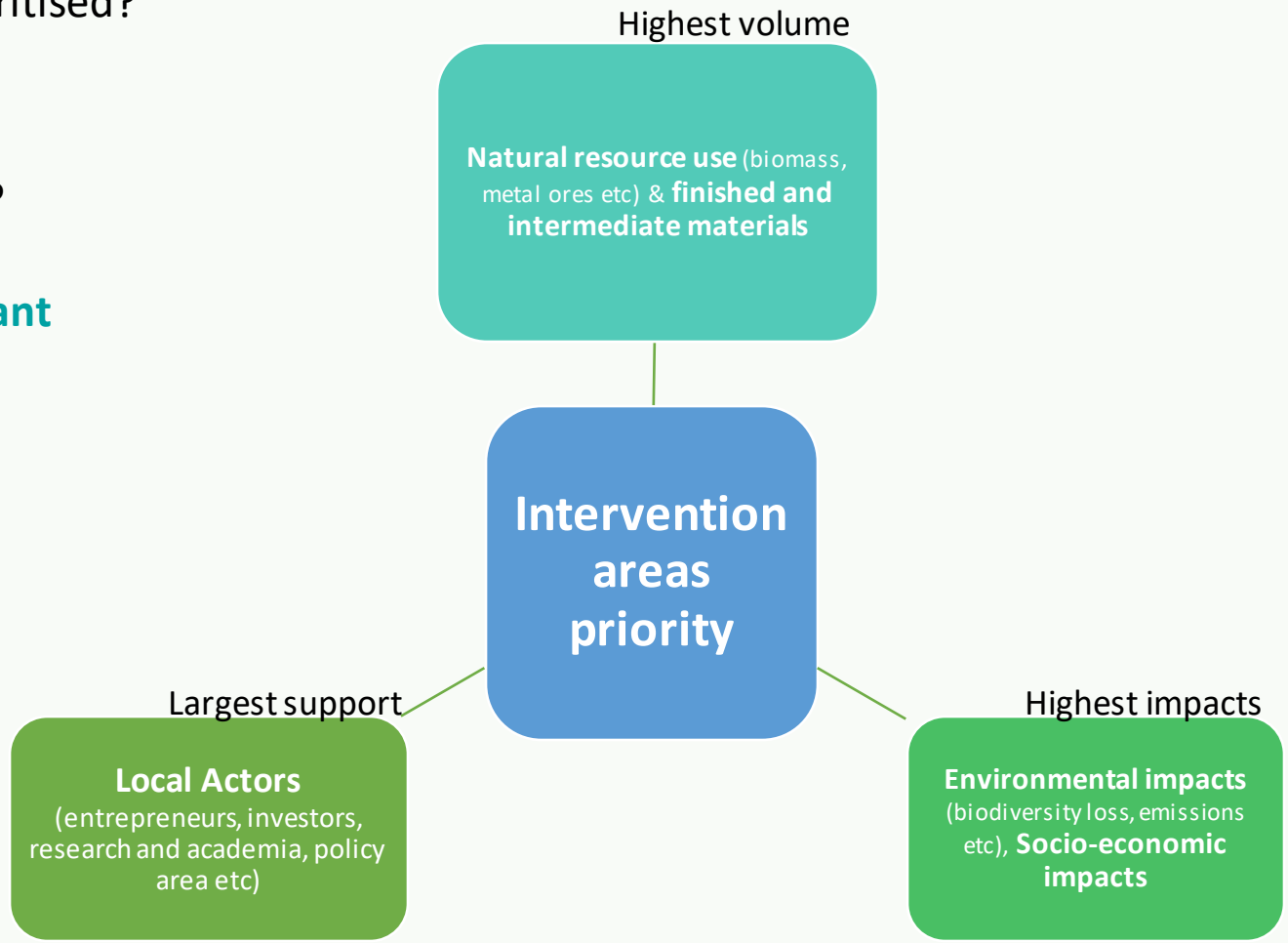
- Bioeconomy Strategy and Action Plan
- EU Farm to Fork Strategy
- Directive (EU) 2018/851 on Food waste reduction
- Regulation (EU) 2020/741 on water reuse
- Regulation (EU) 2019/1009 on fertilising products

# 2.2 Identify intervention areas & CE actions

➢ Which **product value-chain or sector** should be prioritised?

Building on the baseline circularity assessed in the MAP phase, regions and cities should be able at this stage to select (or define) a **product value-chain(s) highly relevant for the territory** depending on:

1. natural resource and material use
2. environmental impacts
3. socio-economic impacts
4. actors present (or available) in the territory



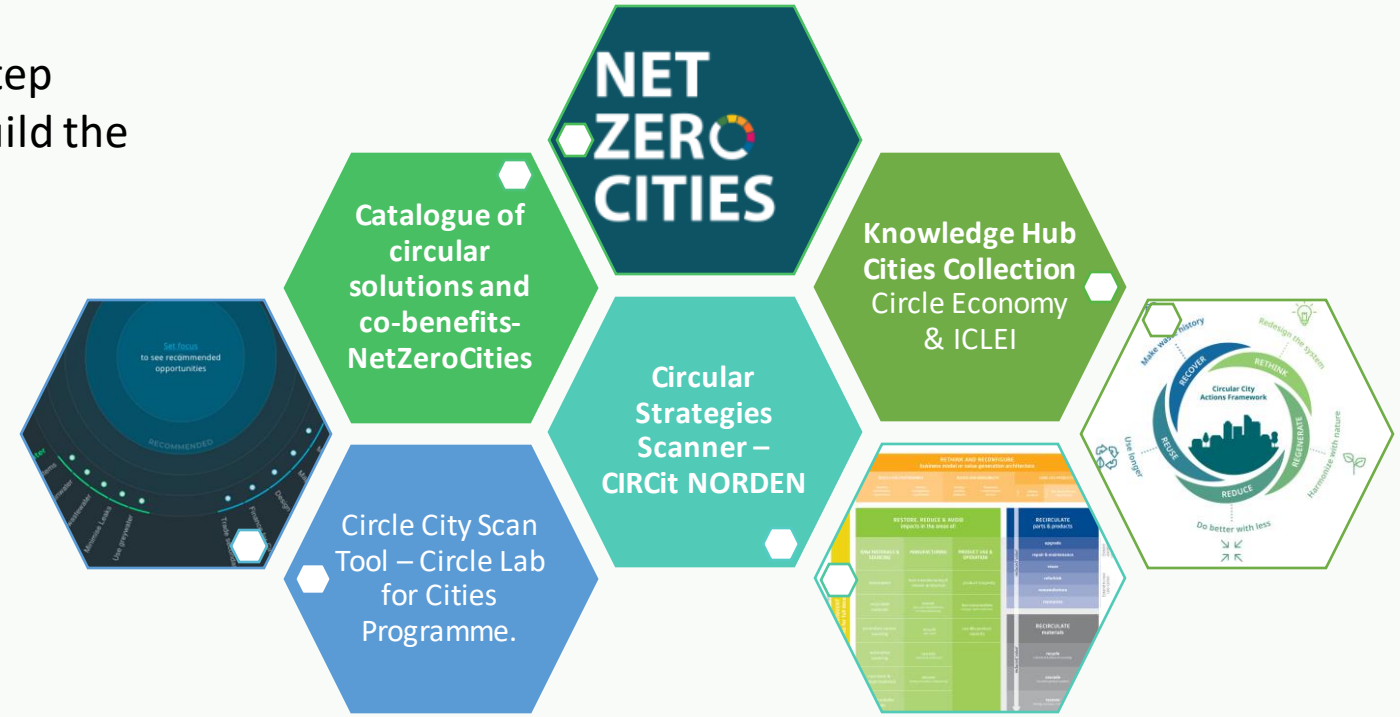
# 2.2 Identify intervention areas

- ✓ Key product value chain identified.
- ➢ Which **CE action or circular system solution** is best suited to my territory?

Once focus areas have been identified, the following step consists in identifying possible CE actions which will build the future circular systemic solution.

**A wide range of CE actions and circular solutions is available** by consulting the latest circular economy initiatives

The CCRI methodology provides a **portfolio of circular systemic solutions** by key product value chain



# 2.3 Assess & evaluate CSSs

- ✓ Key product value chain identified
- ✓ CE action or circular system solution defined
- ➢ What are the **expected outcome and impacts**?

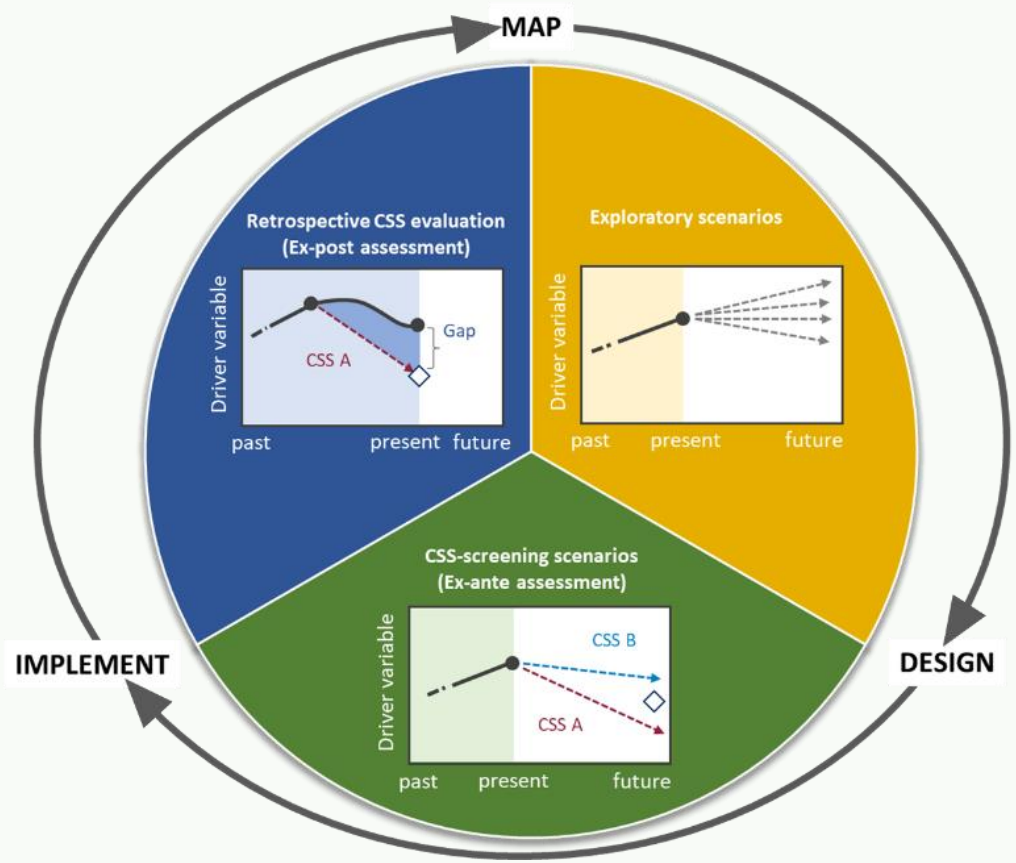
Urban metabolism analysis generally focus on mass-based indicators (e.g., stock and flows of materials and wastes) and make use of Sankey diagrams to visualise the magnitude of materials moving within the territory.

However, the ultimate purpose of improving circularity is to **reduce negative environmental, social and economic impacts** associated with resource extraction and material consumption while increasing benefits for society.

Hence, CSS assessments focusing on the weight of materials, either for flows or for stocks, do not tell the full story.

→ reveal the impacts associated to material use

→ **need to combine life cycle impact assessment (LCIA) methodologies with material flow data**.



# 2.4 Define targets and monitoring indicators


**Output**

- inform on the implementation of the **planned actions**

**Outcome**

- inform on the expected **direct –measurable–** impacts generated by the implementation of a CSS

**Impact**

- inform on the expected **indirect – measurable through ancillary approaches**, e.g., LCA – impacts generated by the outcome or output of the CSS

## SMART indicators

| Specific | Measurable | Achievable | Relevant | Timely |
|---|---|---|---|---|
| • Narrow and accurately describe what needs to be measured; easily understood | • Measurable and replicable over time | • Measurement should be straightforward and cost-effective | • Closely linked to the relevant outcome | • A timeframe should be linked to the indicator |

A list of potential KPIs is provided in the CCRI methodology and operationalised in the self-assessment tool

# Communities of Practice as improvement enablers in LIFE TACKLE project

Depending on the size of the stadium, football games can result in attendances of as much as 20.000 to 50.000+ people.

Given the current trends in attending football games, with the pre-match, match and post-match periods, these visitors can spend as much as 4-5 hours within or just outside the stadium's perimeter. Adding to this the arrival of the teams, warm-ups, press conferences etc. It can account to a full day of operations, logistics, movements and more in and around the stadium.

This nearly equals to a daily rhythm and functioning of a mid-size town, with all the environmental aspects included – mobility, waste management, energy consumption, food production etc.

Tournaments, cups and similar events over a longer period can only result in higher environmental pressure.

Real-life example: LIFE TACKLE

# Communities of Practice as improvement enablers in LIFE TACKLE project

*"a group of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly"*


**By working together, this community:**

- Shares and learns from existing knowledge
- Identifies knowledge gaps, priorities and common challenges
- Develops a strategic voice and vision for unlocking a challenge
- Drives the transformation in environmental management by putting together Each stakeholders' knowledge base, skills, expertise and tools and continuously curated this knowledge base
- Generating and sharing new knowledge and new ways of working; better tools and processes; and innovative solutions to common challenges

Real-life example: LIFE TACKLE

# Communities of Practice as improvement enablers in LIFE TACKLE project

Prosport; a city owned company managing all non-sporting events
+ expanding the new practices to concerts and other non-sporting events

City of Brussels
+ owns the stadium
+ GoodMove mobility plan for the city
+ ban on single-use plastics at events

Brussels Cleanliness
+ current waste collectors in the stadium
+ ban on single-use plastics at events

FostPlus
+ national recyclers of packaging and packaging waste
+ funds for improving packaging waste collection
+ experience with major entities in Belgium

Coca-Cola, AB InBev, Bevers&Bevers
+ food and beverage providers

RBFA
+ match organisers,
+ supporters database
+ CSR

Regional Mobility and Environment authorities
+ strategies
+ support
+ know-how and expertise

SUEZ
+ technology provider

Real-life example: LIFE TACKLE

# Communities of Practice as improvement enablers in LIFE TACKLE project

Separate waste collection

Fostplus

To organise a match and provide the methodology

BRUXELLES-PROPRETÉ propreté .brussels

To collect and measure

Fostplus

To anaylise and initate the pilot test

SUEZ

To conduct the pilot test

Coca-Cola BEVERS & BEVERS AB InBev

To run a communication campaign

**Result:** The new collection scheme managed to decrease the amount of residual waste in the stadium during a match by 23%, as it dropped to 1120 kg from 1375.17 kg. The capture rate of PMC from residual waste was 83.2%, The result of the sensibilisation and PMD collection pilot test outside the stadium's perimeter were 10550 cans collected which amounted up to 2.85 tonnes of empty beer cans which were redirected for recycling.

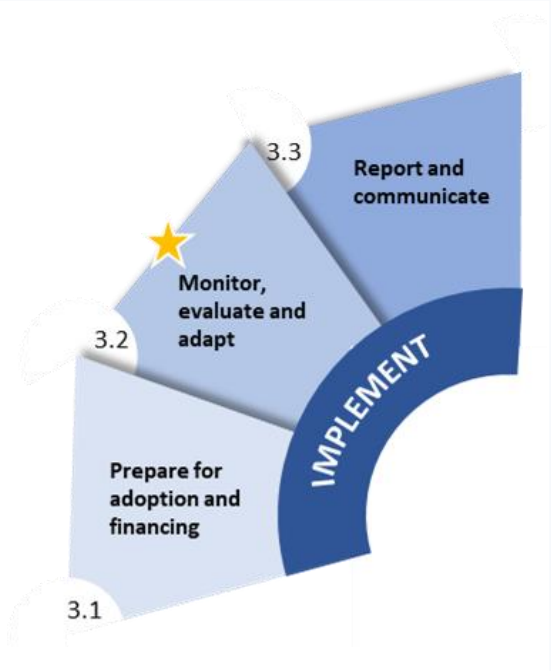
These results triggered a larger scale project of installing permanent bins within the stadium's perimeter, requested by RBFA and approved by the city of Brussels. The city covered all the costs which would result in an immense added value of the new separate collection scheme as it would cover not only football games, but also concerts and different athletic competitions held at the stadium.

In March 2022, it was confirmed that the new bins would be installed on 17 April, as a joint project by the City of Brussels, the regional waste authority, FostPlus and the regional cleanliness authority.

BXL LA VILLE DE STAD

Real-life example: LIFE TACKLE

# 3. Implement phase




Ensuring **financing and funding** is often the most critical aspect to be addressed to put the CSS in motion.

Defining a **CSS business case model** is key for obtaining funding, building partnerships, and ensuring engagement takes place throughout.

It is also important to ensure that funds are available for **CSS's start-up phase**, as it is very likely that they will not be market-competitive in the early stages.

**Evaluating** the CSS implementation and **communicating** the implementation progress to internal and external stakeholders is essential.

# 3.1 Build a business case for a CSS

The CSS business case is a document designed for the external public that explains and demonstrates the **value proposition** and the **financial viability of a CSS in the long run.**

It should be **based on the knowledge generated in the design phase**, in particular the action plan, the stakeholder engagement and the CSS evaluation.

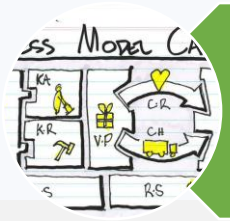
Having an appealing CSS business case will **facilitate access to financing and funding** in either private or public sectors.

To facilitate the elaboration of this document, **a template is provided in the CCRI methodology**

Key actors (service suppliers and customers)

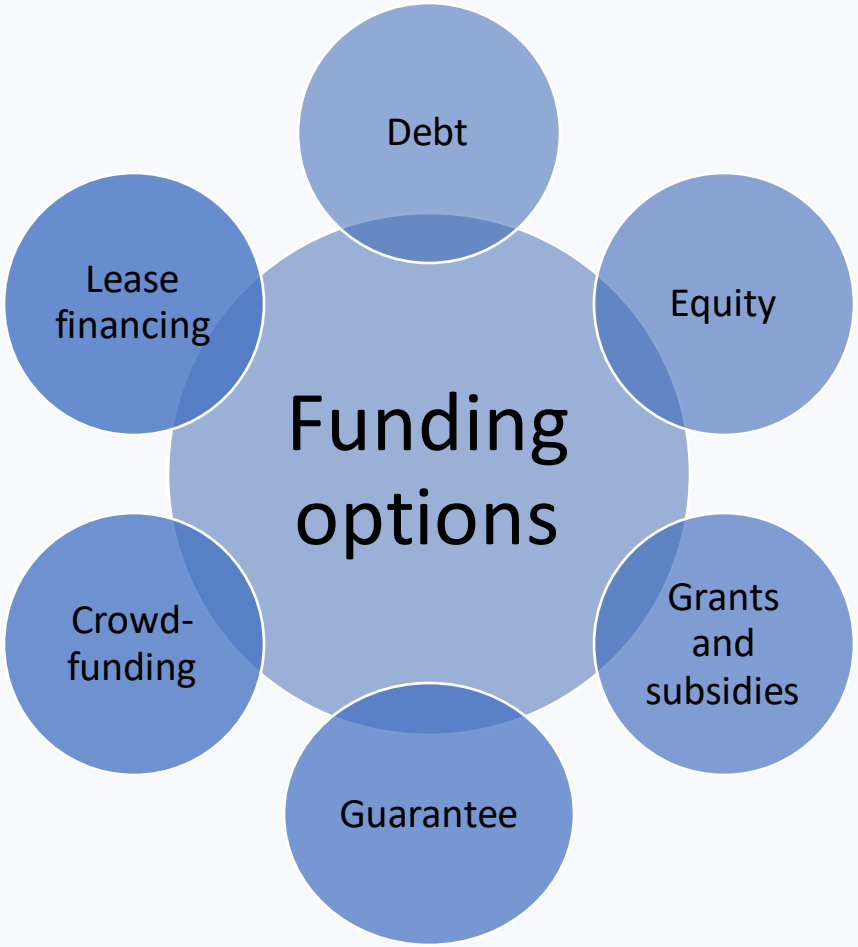
Key resources and activities

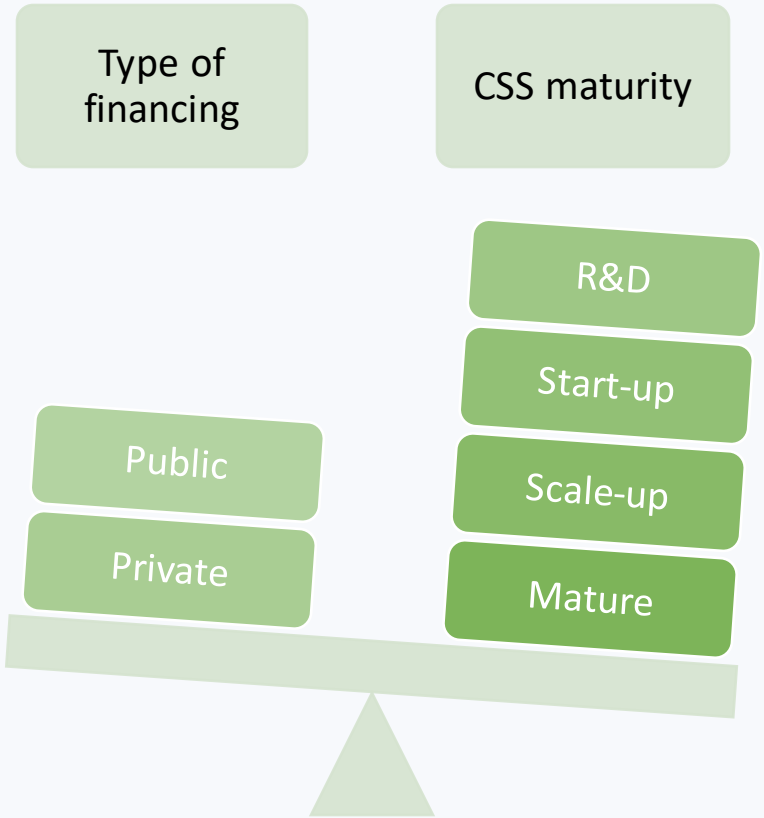

Value proposition



Expense and revenue model(s)

# 3.1 Identify suitable funding/financing instruments

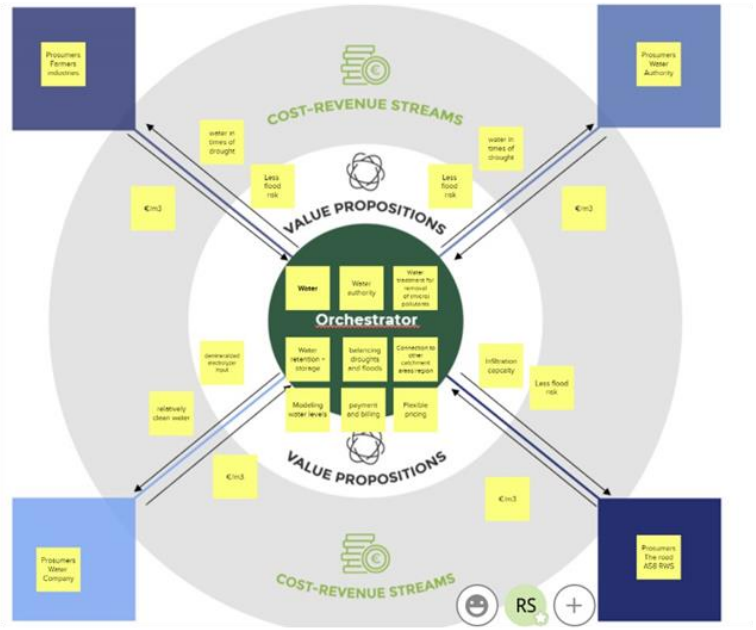


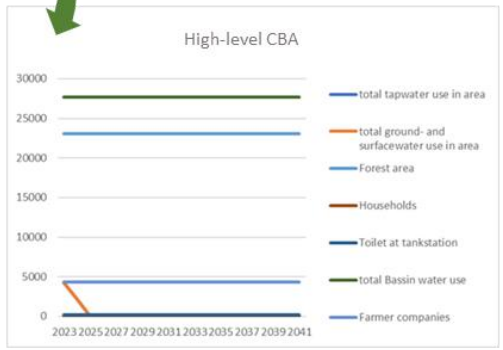



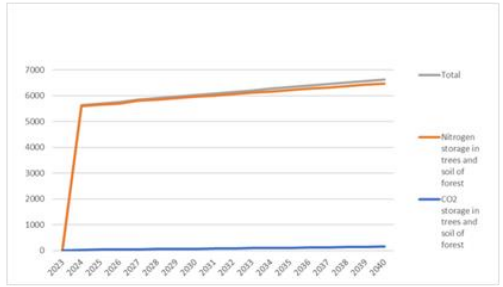

Circular City Funding Guide

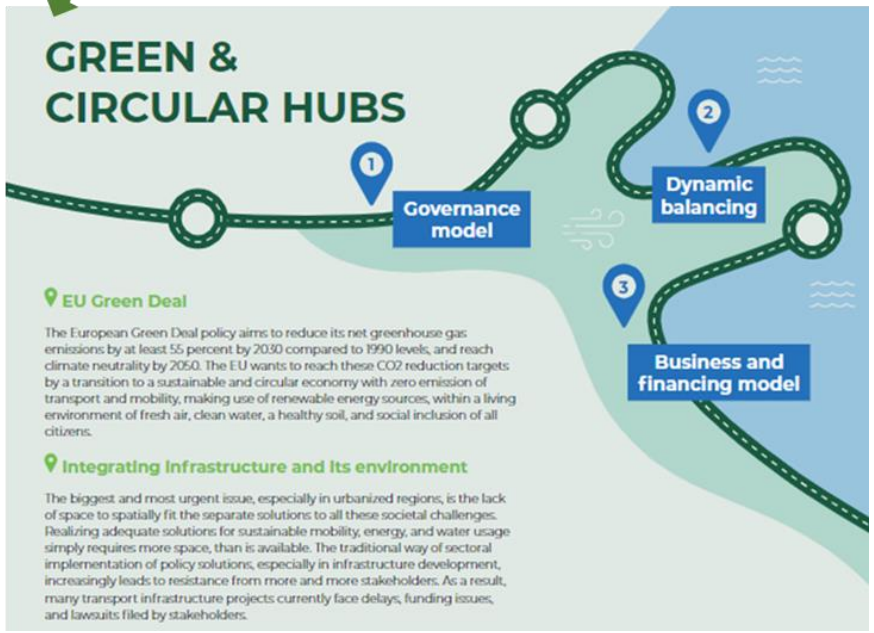
# Example: Local Green Circular Infrastructure Hubs

From a business case (incl. a business model & high level CBA) to a funding strategy:



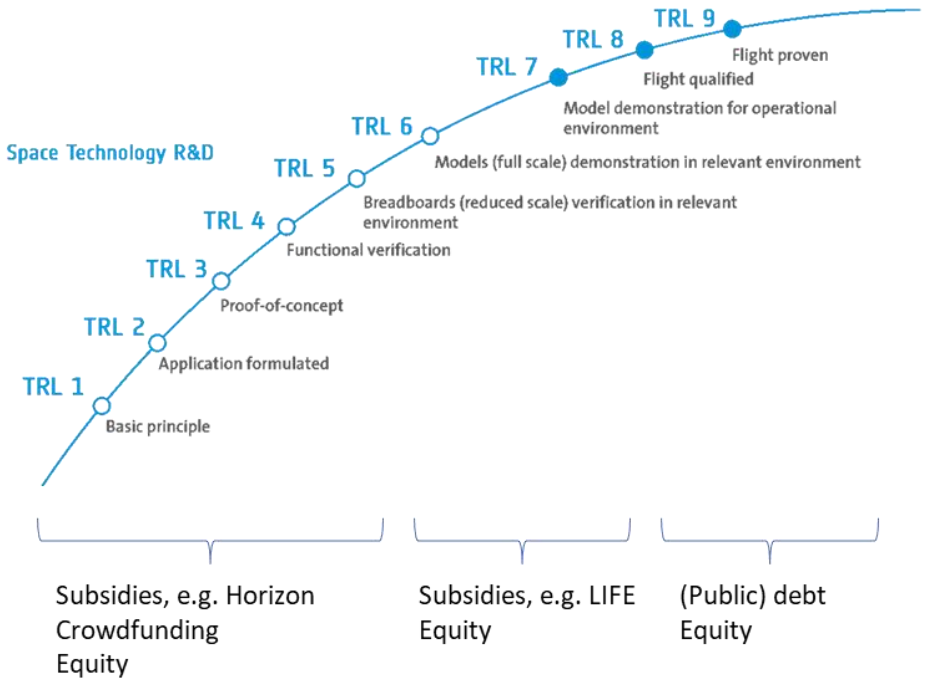



# Example: Funding strategy

## Phase/project type matters




## Type of cost plays a big role as well

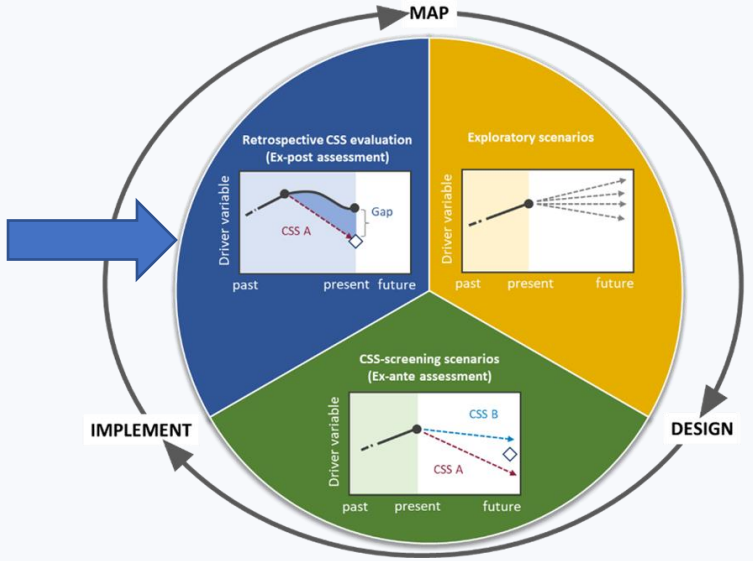
# 3.2 Monitor evaluate and adapt

**CSSs entail interventions** in an urban context and, inevitably, will lead to various changes.

An ex-post impact assessment would be highly beneficial in understanding the **social, economic and environmental changes** that have occurred in the territory and compare them to the intended ones prior to implementation.

The comparison ex-ante/ex-post impact assessments comparison will indicate **deviations in terms of intended and actual outcomes**. Such impact assessments may aid in planning more accurately in due course or **fine-tuning circularity initiatives/action** items.

**Formalising a process of evaluation** and review at this stage of the CSS planning cycle enables reflection on progress and lessons learnt in implementing the CSS.



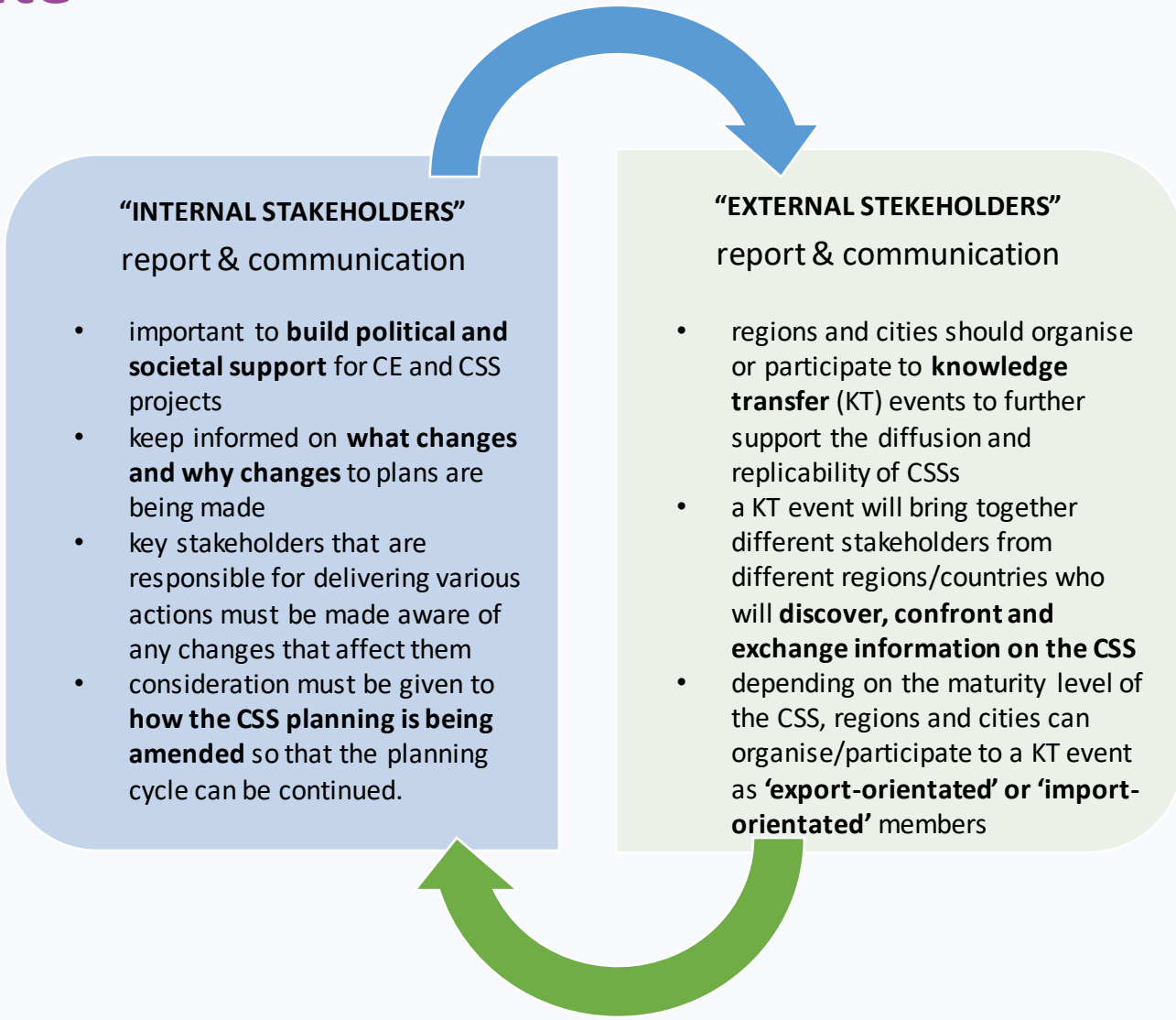

# 3.3 Report and Communicate

Stakeholder **feedback** is essential.

People or groups who have an interest in the CSS, or who are responsible for delivering various actions must be made aware of **how the CSS is progressing** and of any changes that affect them.

This is **key to build political and societal support** for CSS projects and CE initiatives.

Equally wise, the lessons learnt (positive and negative) should be shared with a broader audience to foster **knowledge transfer** and, thereby, **replicability** of CSSs.




# Self-Assessment Tool
# An overview

*CCRI Office, Jannis Lambert*

# Goal and Scope of the SAT

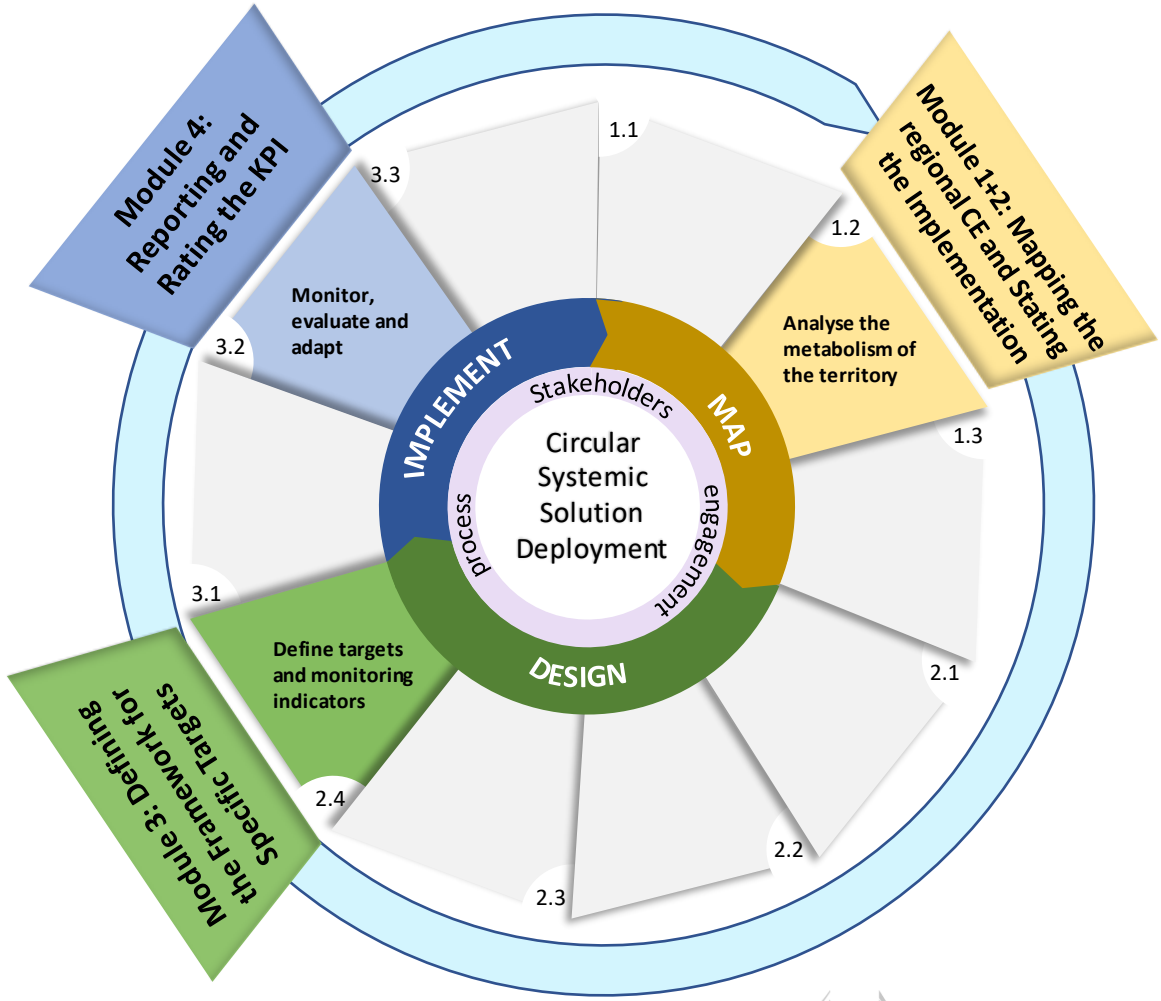
Goal: **Support the implementation of CSS in Europe by giving local project managers a tool to track and analyse the outcomes and impacts over time**

3 main objectives:

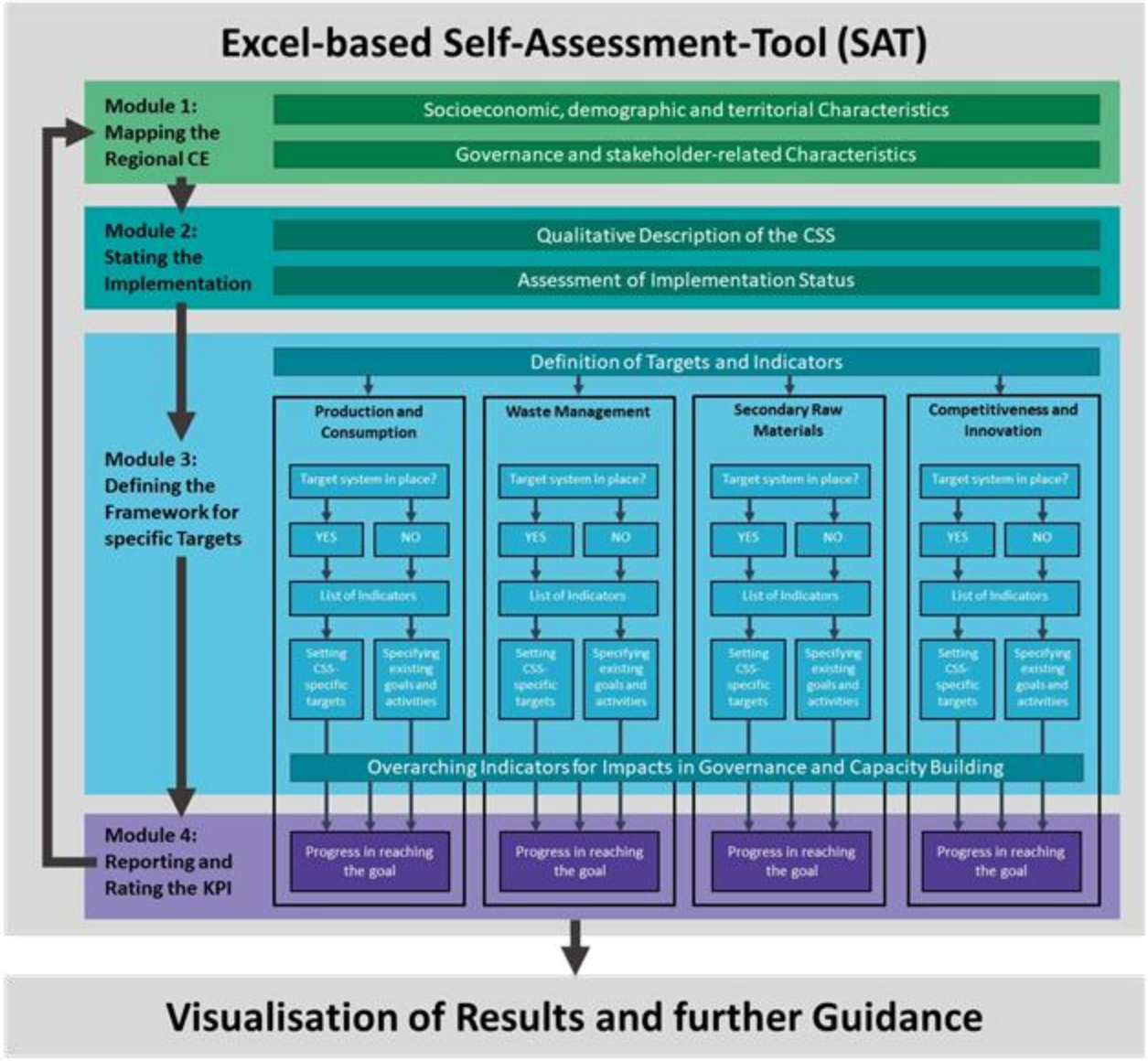
- **Providing a monitoring function for the implementation of the CSS**
- **Documenting the experiences of the CCRI pilots**
- **Supporting the transfer of knowledge**

# Key parameters

- SAT is **deeply connected to the CCRI Methodology** and the **Knowledge Repository**
- Broad spectrum of possible CSS and differing regional contexts calls for a **great degree of flexibility** as to improve user experience
- In the beta phase the tool will be realised as an **Excel-based solution**, practicability and a possible transfer to a web-only (or hybrid) solution will be tested in co-development based on the Pilots‘ and Fellows‘ feedback



# Modular Structure of the Tool

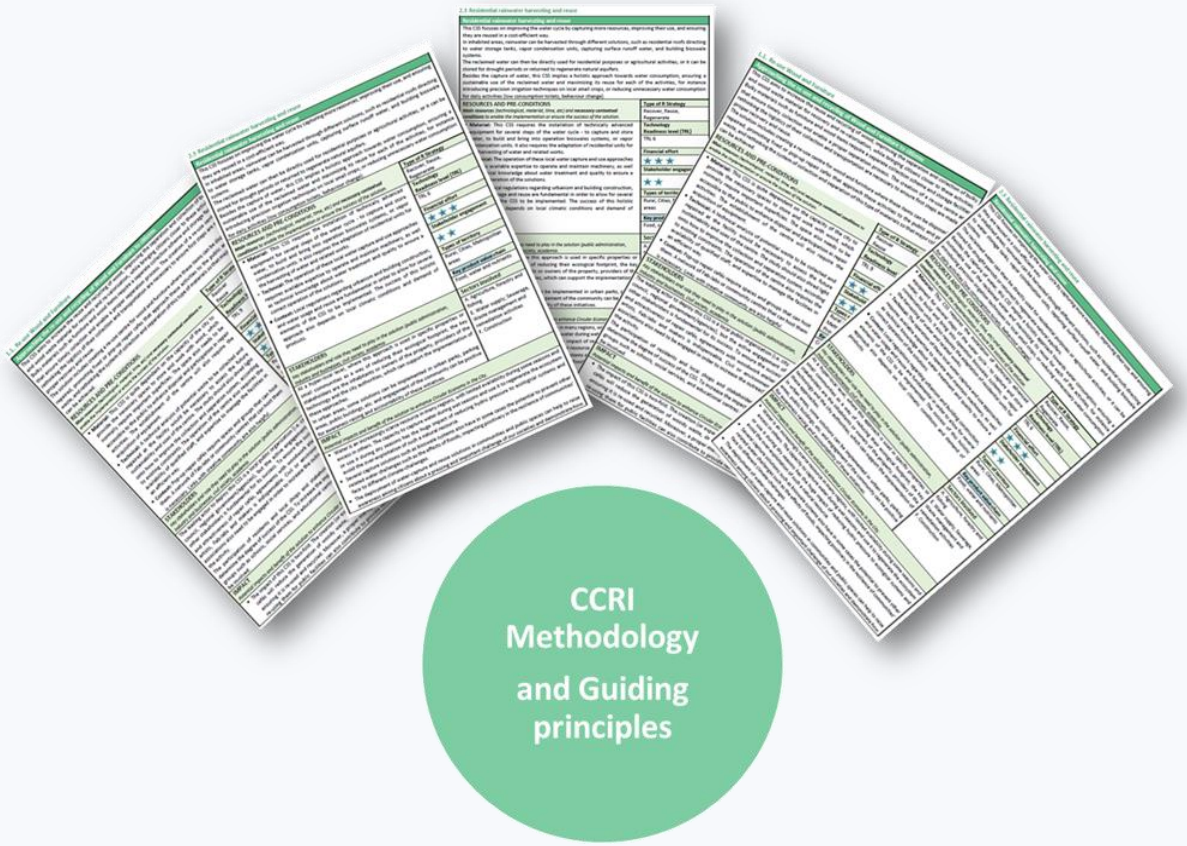



European Commission

# Presentation of Circular Systemic Solutions (CSS) factsheets

*CCRI Office, Elba Fuster, Ghazal Etminan*

# CSS Portfolio




- ✓ Portfolio of 18 CSS with detailed descriptions and references
- ✓ Showcase of concrete ideas with multiple examples
- ✓ Inspiration for users in design phase
- ✓ Identification of partners
- ✓ Visualise CSS in their implementation phase

# Structure of the factsheets

Electronics and ICT

Packaging

Plastics

EU Circular Economy Action Plan

Construction and building

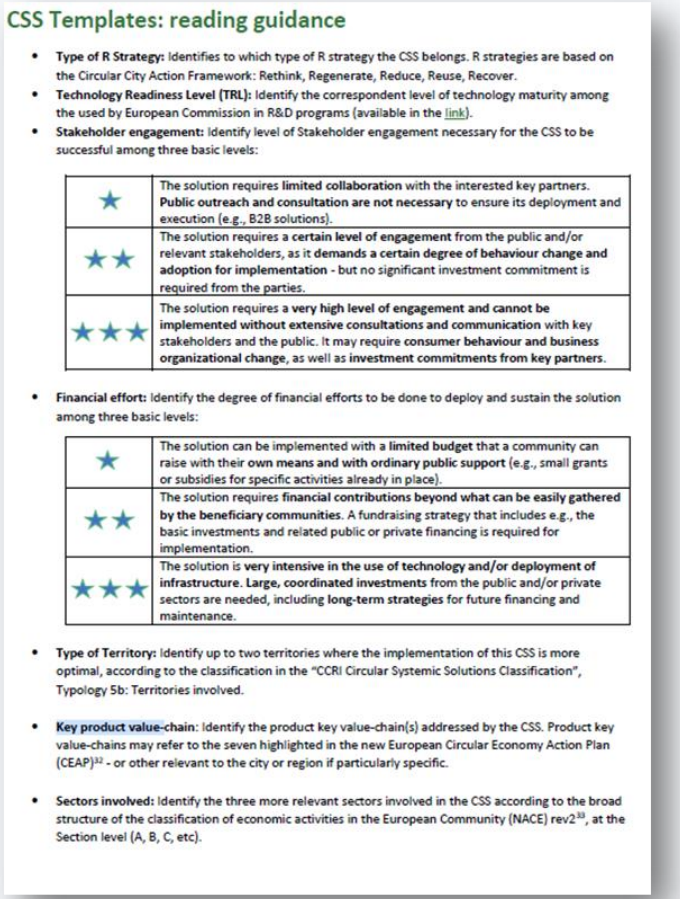
Food, water and nutrients

Textiles

Batteries and vehicles

\+ Cross-cutting support and governance

## *Reading guide*



CSS Templates: reading guidance

- **Type of R Strategy:** Identifies to which type of R strategy the CSS belongs. R strategies are based on the Circular City Action Framework: Rethink, Regenerate, Reduce, Reuse, Recover.
- **Technology Readiness Level (TRL):** Identify the correspondent level of technology maturity among the used by European Commission in R&D programs (available in the link).
- **Stakeholder engagement:** Identify level of Stakeholder engagement necessary for the CSS to be successful among three basic levels:

| | |
|---|---|
| ★ | The solution requires **limited collaboration** with the interested key partners. **Public outreach and consultation are not necessary** to ensure its deployment and execution (e.g., B2B solutions). |
| ★★ | The solution requires a **certain level of engagement** from the public and/or relevant stakeholders, as it **demands a certain degree of behaviour change and adoption for implementation** - but no significant investment commitment is required from the parties. |
| ★★★ | The solution requires a **very high level of engagement and cannot be implemented without extensive consultations and communication** with key stakeholders and the public. It may require **consumer behaviour and business organizational change**, as well as **investment commitments from key partners**. |

- **Financial effort:** Identify the degree of financial efforts to be done to deploy and sustain the solution among three basic levels:

| | |
|---|---|
| ★ | The solution can be implemented with a **limited budget** that a community can raise with their **own means and with ordinary public support** (e.g., small grants or subsidies for specific activities already in place). |
| ★★ | The solution requires **financial contributions beyond what can be easily gathered by the beneficiary communities**. A fundraising strategy that includes e.g., the basic investments and related public or private financing is required for implementation. |
| ★★★ | The solution is **very intensive in the use of technology and/or deployment of infrastructure. Large, coordinated investments** from the public and/or private sectors are needed, including **long-term strategies** for future financing and maintenance. |

- **Type of Territory:** Identify up to two territories where the implementation of this CSS is more optimal, according to the classification in the "CCRI Circular Systemic Solutions Classification", Typology 5b: Territories involved.
- **Key product value-chain:** Identify the product key value-chain(s) addressed by the CSS. Product key value-chains may refer to the seven highlighted in the new European Circular Economy Action Plan (CEAP)[32] - or other relevant to the city or region if particularly specific.
- **Sectors involved:** Identify the three more relevant sectors involved in the CSS according to the broad structure of the classification of economic activities in the European Community (NACE) rev2[33], at the Section level (A, B, C, etc).

# CSS Factsheet example

## Urban Resources Cadasters

This CSS consists of gathering and systematizing knowledge about local resources and creating a coordination mechanism across the city to ensure the proper re-use and recovery of materials from construction and demolishing. The focus is on enhancing material stock reutilization across different works across the city for one or several resources.

It is necessary to establish a governance system for material stocks of the building environment that includes the identification of key materials, enforces and improves relevant regulations, and helps public authorities to visualize flows of materials to promote their reuse and exchange. The coordination mechanism gathers data regarding how much material stock from current and upcoming construction works will be generated and needed, maps storage areas for these materials, and identifies needs of additional infrastructure. Once it is settled, the city can help to allocate resources from one project to another to save costs (for instance, using land masses extracted from one construction site as raw material for another).

This governance model should be scaled to regional level to enable the exchange of more materials among more cities in their public works, reducing storage costs across time.

### RESOURCES AND PRE-CONDITIONS

*Main resources (technological, material, time, etc) and necessary contextual conditions to enable the implementation or ensure the success of the solution.*

- **Material:** This approach requires the existence of enlargement of storage facilities for some materials, and/or some transportation equipment and logistic systems at local and or regional level to ensure that the recovered materials can be timely distributed and correctly stored if needed.
- **Technical:** An initial mapping of existing storage and logistic facilities is necessary to understand the local and regional capacities to manage these materials. Technical expertise from key experts within and from outside city authority is required to identify targeted materials and protocols to handle them. Digital infrastructure is also an important asset that would allow to build a dynamic system to organize and visualize the material stocks and flows and assign resources between projects over time.
- **Context:** The establishment of a new governance mechanisms requires strong political will that the institutional framework can support this new approach. Existing regulations or guidelines providing an accepted taxonomy of CDW and other parameters to assess the type and quality of resources are a requirement to set up this mechanism. The existence of cities networks at regional level and supra-local support can help to scale the initiative beyond one city and generate more impact and efficiencies.

**Type of R Strategy**

Recover, Reuse, Rethink

**Technology Readiness level (TRL)**

TRL 6

**Financial effort**

★★

**Stakeholder engagement**

★

**Types of territory**

Cities, Metropolitan areas, Provinces, Regions, Country.

**Key product value-chain**

Construction and buildings

### STAKEHOLDERS

*Key stakeholders and role they need to play in the solution (public administration, industry and businesses, civil society, academia.*

The most important stakeholders to involve are private sector actors involved in the construction sector, public officials in charge of public works in the city, and CDW specialized actors that are key in the transportation and storage of materials. In the longer term, supra-local public authorities and actors valorising CDW also need to be more intensively engaged to scale the impact of the initiative.

**Sectors involved**

B. Mining and Quarrying
F. Construction
L. Real Estate Activities
O. Public administration and defence

### IMPACT

*Potential impacts and benefit of the solution to enhance Circular Economy in the City.*

- The main impact of this initiative is reducing the extraction and production of construction materials through the generation of synergies and reuse of materials between construction sites.
- Additionally, this approach can generate important cost savings between public sector projects, reducing the costs of disposal for some of the projects, and the materials cost for the ones re-using the materials.

### BARRIERS AND RISKS

*What are the main obstacles and risks of implementing the solution, including possible ways to address them.*

- For some materials, which require processing before re-use or that are lower quality, it can be more difficult to establish an efficient process and economic viability might be less obvious, reducing the incentives to scale the initiative.
- In the long term, a proper exchange system with other municipalities is necessary for the sustainability of the approach, as timings of different works in one single city might imply too much time of storage to make the system economically interesting. This also will require important institutional changes for many municipalities and more complexity in terms of storage facilities and transportation, making the necessary scale up more difficult to achieve.

### EXAMPLES

1) **Excavated land mass Coordination Group (Helsinki, Finland).** The city of Helsinki founded the Mass coordination group with the objective to support exchange of land masses across the city public infrastructure works, to avoid wasting excavated land in some works and buying land for other projects. In the first years of the program, the city saved €32 million, 4.5 million litres of water and 11,300 tonnes of $CO_2$ emissions.
2) **CREATE Project (several countries).** This Project funded under the ERA-NET Urban Transformation Capacities (H2020) works with five cities (Vienna, Brasov, Gothenburg, Rennes, Nijmegen) developing a system to collect relevant data about material stocks and flows of public constructions sites. This also entails creating common standards to classify the type of materials and flows, supporting the governance structures within the different cities, and developing visualization tools that can support the mapping and distribution of resources.
3) **MADASTER:** The digital library of materials
4) **GRONDBANK-TRACIMAT (Flanders):** Logistics, infrastructures, and traceability of soil materials as raw material for building materials/products.

**References:**

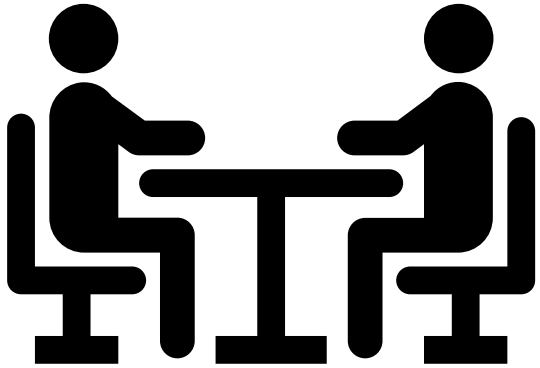
1) Official Helsinki page on the project: https://helsinginilmastoteot.fi/en/city-climate-actions/land-mass-coordination/
2) ERA-NET Cofound Urban Transformation Capacities (H2020): https://jpi-urbaneurope.eu/projects/
3) MADASTER: https://madaster.com/
4) GRONDBANK: https://bouwen.vlaanderen-circulair.be/en/cases-in-flanders/detail/grondbank

Map | Design | Implement | Tools | Circular Systemic Solutions

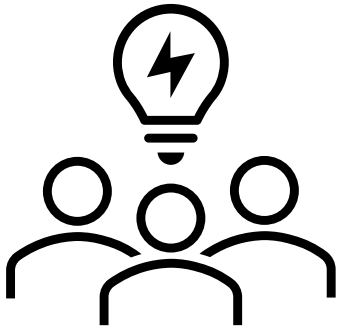

# 30 Mins Discussion with Pilots and Fellows

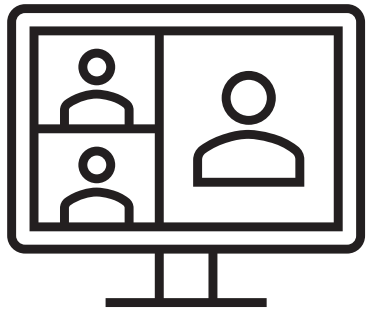
# Closing remarks and end of session

# Dynamics to be implemented to upgrade the CCRI-M

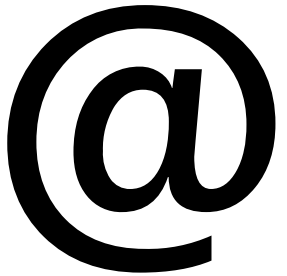


Tailored support to PILOTS



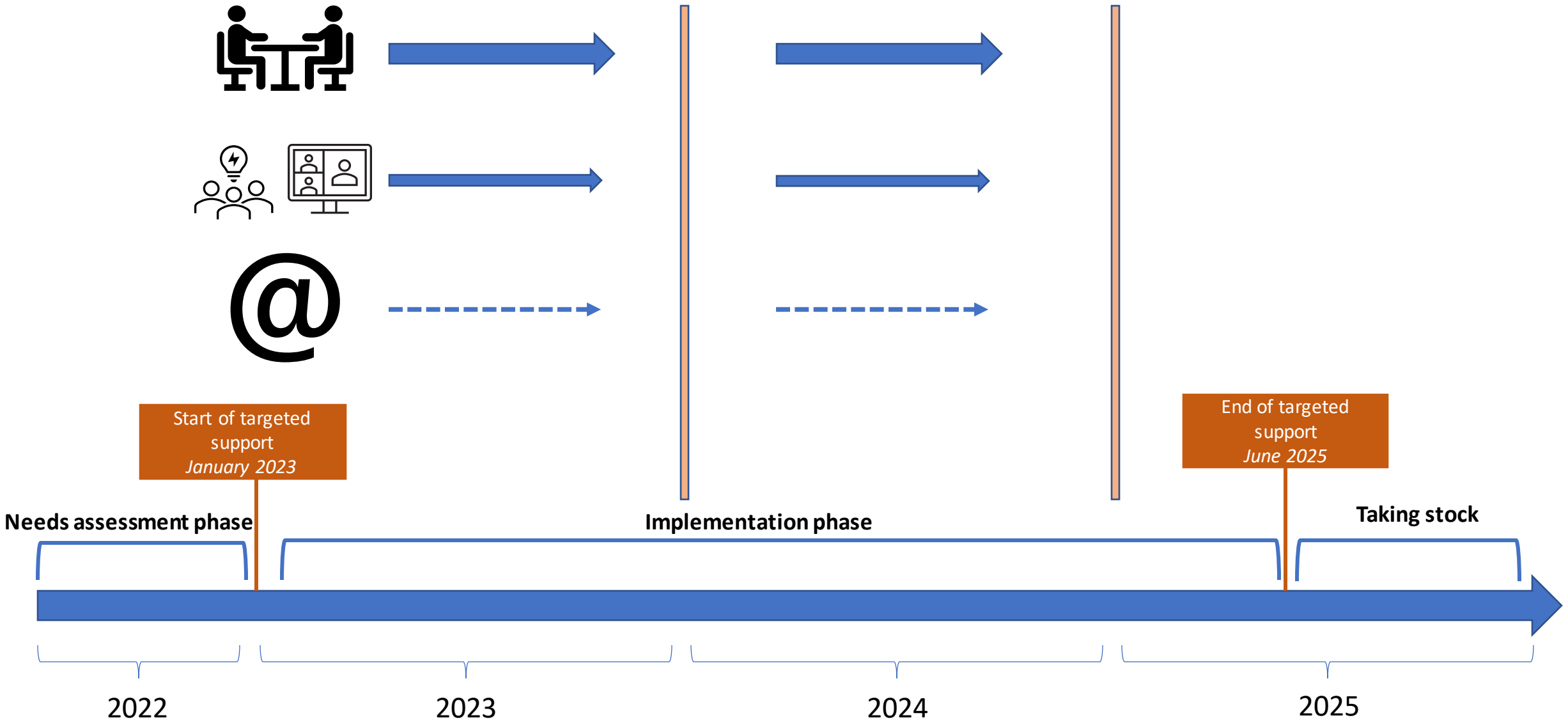


Webinars & TWG



HELPDESK

# Dynamics to be implemented to upgrade the CCRI-M




European Commission

# Thank you

https://circular-cities-and-regions.eu/