REGENALYZE

POLICY ANALYSIS

ASSET partner's current challenges and relevant policies towards a circular built environment (CBE)

October 2024

Interreg

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Partners and abbreviations

Partners

Amsterdam	City of Amsterdam
Brussels	Perspective.brussels and Bruxelles environnement, representing the Region Brussels-Capital
Duisburg	The business development agency Duisburg Business & Innovation (DBI)
Krefeld	Krefeld Business, which consists of the municipality, together with the private entities WFG and GGK, collaborating on the city business development
South Holland	Province of South-Holland (Zuid-Holland)
The Hague	City of The Hague

Abbreviations

ASSET	Interreg project for A Spatial Strategy for the EuroDelta, boosting a circular builT environment for Interreg North-West Europe
CBE	Circular built environment
CE	Circular economy
EU	European Union

1. Introduction

1.1 Objective of the policy analysis

The ASSET project aims to make the Eurodelta region a frontrunner in the Circular Built Environment (CBE) in Europe. The ASSET partners (the municipality of Amsterdam, Perspective.brussels and Bruxelles Environnement, Duisburg Business & Innovation, the municipality of the Hague, Krefeld Business, and the province of South Holland) are collaborating to explore a shared spatial strategy.

This report analyses the current challenges, policies and strategies (spatial and otherwise) related to a CBE in ASSET cities and regions. It also provides early suggestions for the scope of developing a CBE in the Eurodelta.

1.2 Methodology

The content of this report is primarily based on the filled-in questionnaires from the ASSET partners. Note that the answers provided in the questionnaires were not always complete. Moreover, the information varies widely regarding the level of detail provided; we observed that partners have filled them in in different ways, and did not always have the same interpretation of the questions. Taken together, this prevented a fully systematic comparison of the partner cities and regions.

Three additional interviews were carried out to clarify some issues. The findings in this report should still be treated with caution. They must be read as an initial state-of-the-art rather than a complete picture of the situation and policies in each city and region.

The final observations and suggestions in this report are based on desk research, but also Regenalyze's expertise and knowledge of the project and its partners.

1.3 Report structure

The report is structured as follows:

- **Section 2** briefly introduces the ASSET cities' and regions' strategies, and then sums up their reported challenges regarding the development of a CBE.
- **Section 3** discusses their circular and spatial planning policies relevant for a CBE to address these challenges.
- **Section 4** contains conclusions, observations, and suggestions for the scope of a future cooperation in the Eurodelta to develop a CBE.

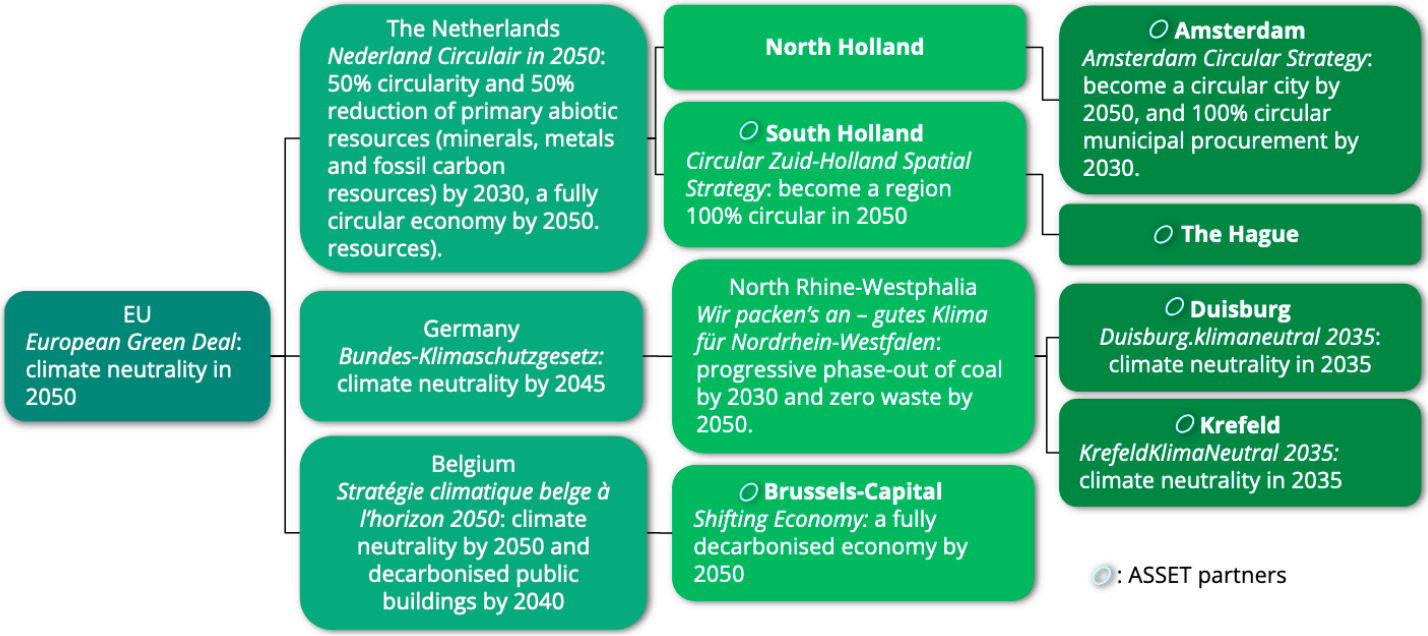
2. Perceived challenges

This section briefly presents the ASSET partners' strategies, and lists their perceived challenges regarding the development of a CBE, based on the information they handed in through the questionnaires and interviews.

2.1 ASSET partners' strategies and targets

The ASSET partners' cities and regions have different spatial-economic profiles, varying levels of circular ambition, and are at different stages in the development of a CBE. Regarding targets and ambitions, Amsterdam's Circular Strategy aims for the city to be fully circular by 2050, while South Holland strives to become "100% circular" by the same year. The goal for the city of The Hague is to take significant steps towards a circular economy by 2030 and a fully circular economy by 2050. Brussels' Shifting Economy strategy has a broader target, aiming for a fully decarbonized economy by 2050. Krefeld has set a target of achieving climate neutrality by 2035. Duisburg has, to our knowledge, not specified targets.

Figure 1. Key climate and circular strategies and associated targets



In the remainder of this section, we identify the main challenges that are mentioned by the partners regarding the development towards a CBE:

Increasing and competing demand for a limited space; Developing circular markets; Funding investments needed for a CBE; Data gaps; and cultural issues.

2.2 Increasing and competing demand for a limited space

All ASSET partners identify the increasing demand for space induced by CBE and its unknown implications as a main issue. As put in the South Holland questionnaire, 'the most significant challenge in spatial policy today is the multitude of tasks requiring space, coupled with the limited availability of space'. Additional space is required for the harvesting of biobased materials but also for logistics needs, like storing, processing, and transporting biobased and used materials, as well as craft centres and waste management spaces.

Cities mention they face competing spatial claims from other areas (housing, energy transition, climate adaptation, biodiversity). Amsterdam added that laws and regulations can be a barrier to accessing the space, as permits and certifications are often difficult to obtain.

2.3 Developing circular markets

The ASSET partners all indicated that markets of secondary materials and biobased products are still in their early stages and lack competitiveness compared to the linear ones:

- **Supply and demand imbalances for CBE:** Amsterdam, Krefeld, and South Holland noted an insufficient supply of circular materials, both reused and biobased materials. Krefeld attributed this shortage to underdeveloped supply chains. South Holland adds that a transition in the agricultural sector is needed for more biobased supply.

- **Unaffordable circular materials and practices:** Additionally, the high costs associated with circular materials and methods make them less affordable and attractive. South Holland observed that circular markets are still in their early stages, which may explain the lack of an optimal supply chain compared to traditional systems, such as concrete. Amsterdam further explained that the high costs are related to the innovation and labour intensity involved in circular materials and

practices. The Hague also noted that using circular materials can be more time-consuming, requiring additional HR and financial resources.

- **Technical and legal limitations of circular materials:** Amsterdam highlighted that urban densification requires further innovation in circular materials. For example, in buildings with more than eight floors, the materials predominantly used are still concrete, due to circular material limitations. Additionally, Amsterdam also pointed out that regulations can hinder circular initiatives and be an obstacle to market developments.

- **Organisational challenges within the supply chain:** Duisburg described that companies face several organisational issues, including a lack of human resources, limited cooperation, and insufficient circular knowledge. Regarding this last point, Brussels also highlighted the need for workers to acquire new skills to deploy used materials in the construction sector. The Hague also indicates a lack of knowledge regarding circular methods. Finally, partners highlighted the need for circular hubs and new networks to facilitate shorter regional loops.

2.4 Other challenges

The following challenges are shared by at least half of the ASSET partners:

- **Funding investments for CBE**: Amsterdam, Brussels, and Krefeld highlighted the challenge of the high costs associated with CBE development. These costs encompass not only expensive innovations for circular materials and methods, but also investments in new infrastructure, and land use/acquisition by the municipality. Brussels additionally pointed out the need for investments in skill development. In all, significant financial investments are required for transitioning to a CBE.

- **Data gaps and monitoring:** Amsterdam, Brussels, The Hague, and Krefeld identified an issue with Data availability. Material banks and passports -now in their infancy- would allow to track reused material availability and quality, and would help to identify potential supply of secondary materials. Amsterdam indicates that gaining finer insight into

material flows is crucial for monitoring the cities' progress in becoming circular. Brussels concurs, noting that more regular monitoring and evaluation are essential for tracking progress and identifying areas for improvement.

- **A need for cultural adjustments:** The challenge of cultural adjustment in the construction chain is acknowledged by The Hague, Amsterdam, and Krefeld. Krefeld highlights the need to increase acceptance and change client habits. They describe a risk-averse culture that raises concerns about the quality of circular materials. For instance, wood construction needs to comply with conservative fire protection measures, which limits the use of bio-based materials as a result. The Hague also explained that designers and developers often focus on dismantling and new constructions. There is a need to prioritise the preservation and transformation of existing buildings. The Hague currently focuses on waste management in its circularity strategy but recognises the need for a more proactive approach to urban planning. Both The Hague and Amsterdam observe a lack of a scaling-up culture, emphasising the need to make successful pilots the standard practice.

3. Current circular and spatial planning policies

In this section, we discuss the current circular and spatial planning policies regarding CBE. The analysis is based on the information provided by the partners in the questionnaire and completed by interviews.

The term "policy" does not have an undisputed definition[1]. In this report, we define a policy as a decision "followed by an action or set of actions in dealing with a problem or matter of concern"[2]. Below, we describe and discuss policies in place that address the challenges identified in the previous section:

- Space management
- Development of circular markets
- Financing CBE investments
- Data availability
- Cultural shift

We only mention policies mentioned in the questionnaires that provide sufficient detail on how they address the challenges faced by ASSET partners. Hence, general and unspecified policies do not appear in this report, such as those simply "promoting circular methods" without outlining concrete elements or solutions. We also exclude very common policy actions such as calls for projects and organising workshops. They offer limited additional information to the partners and are already being implemented by most. We focus on more specific and higher-impact policies. Annex 1 contains a brief summary of the policies and policy frameworks per partner.

3.1 Space management

When it comes to the first policy area, space management, the ASSET partners have developed a couple of initiatives.

[1]Colebatch 2009. Policy Concepts in the social sciences. McGraw-Hill Education (UK),
[2] Anderson, James E. 1975. Public policy-making. New York: Praeger

Table 1. Space management policies

Policy	Partners
Prioritising the multiuse of space In its regional plan for space attribution (PRAS), Brussels is changing the typology of designated spaces into mixed-use areas (ZEMU). Amsterdam also encourages multi-use when adapting spatial planning to new circular public space usages. The municipality joins national and international partners in mapping out this shift in public space usage to be able to adapt spatial planning accordingly.	Amsterdam & Brussels
Revitalising of brownfields Krefeld, in collaboration with the Chamber of Commerce, has launched an analysis of brownfields and is reaching out to owners to explore solutions for selling. Brussels initiates brownfield studies to promote future land development and reserve new spaces for the circular transition.	Krefeld & Brussels
Prioritising underground spaces An integrated design method for public space involves public and private parties collaborating to reserve underground space for a healthy living environment, energy systems, climate solutions, circularity, and nature-inclusive design. This approach enhances green, attractive, and high-quality public spaces.	Amsterdam
Offering temporary lease contracts on a priority basis The City ensures that physical space becomes available for target groups such as thrift stores, repair workshops and sustainable processing businesses by offering them temporary lease contracts on a priority basis, in part to realise the desired retail diversity. To achieve this, where possible, the City purchases, rents or develops property, for example in urban regeneration areas.	Amsterdam
Developing smart logistics New logistics centres are created. To reduce traffic on the roads, Brussels is exploring the use of waterways to transport construction site supplies, soil and construction debris.	Brussels

3.2 Development of circular markets

The ASSET partners have actively developed policies regarding the development of circular markets in collaboration with the industry.

Table 2. Development of circular markets

Policy	Partners
Creating dialogue and feedback loops with enterprises Amsterdam is collaborating with various stakeholders to create spaces for circular initiatives, connect organisations, provide resources and knowledge for business cases, and offer support in sectors like sustainable construction, textiles, food and organic waste. Feedback loops allow Amsterdam to identify bottlenecks, adjust policies, improve procurement conditions, enforce regulations effectively, and offer better support. Brussels facilitates dialogue and engagement with construction companies, material suppliers, waste management providers, and citizens, to align their interests and coordinate the transition towards a more circular built environment. "Impact The Hague" engages in discussions with small-and medium-sized businesses, to find circular pathways together. The city facilitates the manufacturing industry in transitioning to a circular economy, notably by identifying new spaces. South Holland is developing multi-stakeholder circular arenas for dialogue and joint action. Each area has its circular opportunities and exercises, they include the urban area, the South Holland Delta, the port industrial complex, the Greenports and the peat meadow areas.	Amsterdam, Brussels, The Hague & South Holland
Making practical circular knowledge available to businesses Amsterdam has an advisory programme connecting companies with technical solutions, legal assistance, and future-proofing strategies. In addition, Amsterdam supports business owner collectives in the sectors of textiles and appliances, with initiatives focusing on life extension and pay-for-use. Enterprise collectives will learn to avoid single-use plastics and replace them with sustainable alternatives. Brussels offers training programmes and seminars as part of its Renolution strategy for construction companies, focusing on how to work with reused and bio-based materials, as well as circular design. It also develops new skills in reversibility and modular approaches. Duisburg provides advisory services, networking platforms and events, for	Amsterdam, Brussels, Duisburg & Krefeld

knowledge exchange to initiate conservation of resource processes within companies. Krefeld is part of the Healthy Building movement, which raises awareness about circularity, through research and stimulating innovation on healthy construction materials.	
Developing new business models Amsterdam collaborates with construction organisations and academic institutions to develop and scale up business models for bio-based construction (mainly wood). Brussels stimulates new research on circular business models, and through its 'Be Circular' programme, it supports start-ups and companies scaling up with coaching and funding ranging from €20,000 to €200,000 for circular initiatives, including CBE. Krefeld creates information events and cooperation with companies on their circular business models.	Amsterdam, Brussels & Krefeld
Supporting circular networking This is a collaboration between ORAM and the Port of Amsterdam, aiming to boost circular industrial activity in the North Sea Canal Area. The network consists of companies, universities, research institutions, and authorities. It will collaborate with the Port of Amsterdam on transparent and traceable supply chains, assist SMEs in circular processes, identify opportunities for accelerating development, and promote knowledge transfer and education to bring students and schoolchildren into the circular industry. In Brussels, the "Advitam material[3]" platform brings together circular economy actors, providing a space for all stakeholders in the CBE value chain to meet and exchange best practices.	Amsterdam & Brussels
Making agreements with the industry Amsterdam encourages the packaging industry and mattress manufacturers to implement reverse logistics and mandatory product return, aiming to accelerate these processes under Extended Producer Responsibility (EPR) legislation.	Amsterdam & The Hague

[3] https://advitam-material.be/

The “Hague Climate Agreement” contains climate deals on the circular economy, towards more reuse of items and raw materials and less waste. It also signed a concrete treaty for more sustainable concrete.	
Encouraging the life of product Amsterdam supports recycling centres and repair centres. It also encourages consumers not to pay for ownership, but for use, so that companies are given an incentive to make better appliances that last longer.	Amsterdam
Applying true pricing in investment decisions and procurement The City is set to establish 'true pricing' for procurement from 2025, aiming to create a level playing field for circular businesses. This price includes the negative impact of production, transport, usage, and waste, which is currently uncompetitive due to the unfair pricing of non-sustainable products. The true price will help businesses compete in the market.	Amsterdam

3.3 Financing CBE investments

Only a handful of policies are currently implemented to finance CBE investments.

Table 3. Financing CBE investments

Policy	Partners
Investing in a future-proof port This includes investments in infrastructure, innovation, and creating an attractive business climate for companies. Key aspects include promoting multimodal transport links, improving environmental performance and promoting the circular economy. The vision is to create a future-proof port that contributes to the prosperity and quality of life in the Amsterdam region.	Amsterdam
Providing financial support to circular entrepreneurs This is financial support of entrepreneurs options through the Entrepreneur Portal (title: Duurzaam ondernemen) and the sustainability circles (title: Duurzaamheidskringen).	The Hague

3.4 Data availability

Brussels, The Hague, and Amsterdam have specific policies regarding circular Data.

Table 4. Data-related policies

Policy	Partners
Monitoring and impact assessment The Amsterdam Circular Monitor presents waste collection indicators, treatment indicators, and social foundation indicators (housing, income, wealth inequality, health). The Monitor also uses the four 'perspectives' of the City Doughnut, gathering Data via workshops, and Data partnerships. Brussels developed several monitoring tools. Totem is a materials impact assessment tool which provides information for comparing construction projects, drafts environmental profiles of buildings using European and JRC recommendations, and offers a detailed overview of the environmental profile of materials, components, building elements, and buildings. GRO is a tool to measure and enhance the sustainability of construction projects. It aims to achieve future-oriented, comfortable buildings through an integrated design process, with a strong focus on circular construction.	Amsterdam & Brussels
Developing a Data platform to exchange circular information Amsterdam's platform will be the place where all relevant Data for the circular economy are brought together securely and efficiently.	Amsterdam
Building an inventory of building materials The inventory gives insight into released and required building materials in the next five to ten years which can be reused in new projects.	The Hague

3.5 Cultural shift

Amsterdam and Brussels developed policies to drive a cultural shift and raise awareness.

Table 5. Policies regarding a cultural shift

Policy	Partners
Introducing new criteria and standards to incentivise circularity	Amsterdam & Brussels

Amsterdam collaborates with universities, research institutes, and local authorities to develop standards for circular economy, material passports, and public tender criteria, aiming to establish a clear definition of circular construction. Brussels invests approximately €160 million in the development of new businesses. They used ESG (Environmental, Social, and Governance) criteria including circularity to evaluate funding requests from companies, mainly SMEs.	
Facilitating circular neighbourhoods The city is enhancing its support for social initiatives and community actions that promote the circular economy at a neighbourhood level. These initiatives have ecological, economic, and social impacts on the city, and participants build social contacts. The support includes financial arrangements, facilitation of a knowledge network, support for owners' associations and private homeowners for circular renovation and insulation, and collaboration with at least five circular initiatives.	Amsterdam
Organising citizen's council on waste The city organises a citizens' council on waste in 2024, in which residents, business owners, experts and officials discuss the city's waste challenges.	Amsterdam

4. Conclusions and observations

Although the information used for this report is far from complete, as outlined in the introduction, some conclusions can be drawn. Note that the conclusions and observations listed below do not follow only from the questionnaires that were handed in: they are also based on the authors' knowledge of CE and involvement in the ASSET project.

4.1 Conclusions on partners' CBE challenges and policies

This report identifies 5 main common challenges of the ASSET partners in their CBE development, along with associated policies:

1. **Finding Space:** All partners face a growing demand for a limited space. To free up new spaces for circularity, the ASSET partners are developing innovative concepts, such as multi-use spaces, smart logistics, hubs, and brownfield regeneration. However, there are many competing land claims, land acquisition and negotiations with landowners remain a limiting factor.

2. **Development of circular markets**: Markets for secondary materials and biobased products are in their early stage. To develop markets, the ASSET partners deploy circular public procurement, promote dialogue and networking to share circular knowledge and practices, or make specific agreements with the industry. It remains to be seen whether these efforts of individual cities or regions are sufficient to render circular markets more competitive than the linear ones, or to ensure an adequate supply of circular materials.

3. **Financing CBE investments:** The investments required for a transition to a CBE are considerable. There are needs in financing innovation, infrastructures, and land acquisition. Partners mentioned having only a small number of relevant financial/investment policies. In addition, partners seem to rely mainly on regional, national, and European subsidies. Subsidies may be limited to finance all circular investments due to their size and the intense competition during the tendering process.

4. **Data availability:** Partners have mentioned Data availability issues. To respond to this, ASSET partners introduce promising initiatives to monitor and exchange Data, such as Amsterdam's CE monitor and indicators for impact assessment and Brussels' monitoring tools. The Hague's material inventory even allows to anticipate reused material availability.

5. **Cultural shift:** Partners have noted the need for cultural adjustments and for a greater acceptance of circularity by the industry. Both Amsterdam and Brussels are introducing circular public tender criteria, but there is a need to address a risk-averse culture in the industry by demonstrating the reliability of circular practices and materials. Furthermore, partners could need additional incentives for the industry to prioritise the transformation of the existing built environment.

4.2 Is there scope for CBE development in the Eurodelta?

A central aim of ASSET is to explore the scope for collaboration in the Eurodelta region. Before exploring what that scope could be, we share some observations.

First, the policy documents shared by partners indicate that Eurodelta collaboration may not be a first priority at this point in time: Cities and regions put strong efforts in increasing circularity, but so far mainly focus on their own territory and jurisdiction, or the immediate regional surroundings. This is already a big challenge for them, as circular practices in the built environment are in full development and the governance is complicated given the large number of agencies and stakeholders involved. Most partners have set highly ambitious local climate and circular targets that demand their primary attention; others are in an early stage of strategy formulation.

Second, reading through the questionnaires we noted an absence of conceptual clarity regarding CBE, which can hinder the Eurodelta cooperation. This is reflected in the often somewhat fuzzy language used in the policy documents. There is a dearth of standardised concepts and definitions of what circularity means, or how it can be measured. The words "circular", "sustainable", "climate neutral" or "regenerative" are often conflated or used interchangeably. The R-ladder is often mentioned but interpreted differently; There is no consensual idea of the transition path, and how linear and circular models currently co-exist

and compete; Biological and technical cycles are often not explicitly distinguished, nor how local circularity relates to interregional and international flows. The wide variety of approaches and lack of conceptual clarity makes comparisons difficult, and consequently hinders collaboration.

Furthermore, there is a capacity gap. Partners struggle with insufficient resources for their local initiatives. Adopting circular principles in the built environment requires new knowledge and competencies within local and regional governments. Developing a CBE requires not only expert knowledge but also strong networking and organisational capacity. This comprises the ability to create coalitions (also with the private sector), to organise lasting political and social support, and funding for CBE initiatives.

Overall, the central ambition of the ASSET project—spatial collaboration on a larger regional scale or even the development of a coordinated spatial strategy for the Eurodelta—appears far-fetched. Nevertheless, in the questionnaires the ASSET partners present common challenges that interregional collaboration could help address along with opportunities. Some of the partners (especially The Hague, South Holland and Amsterdam) already recognise that interregional collaboration might help them to address their challenges, but they are not yet very specific about the practical implementation of such collaborations.

The following section suggests some scope for the partners' future collaboration in the Eurodelta.

4.3 Opportunities for the development of a CBE in the Eurodelta

For further collaboration towards a CBE, ASSET partners (and potential new partners in the future) can take several pathways. First, they may focus on deepening knowledge exchange on existing practices (table 6 shows some examples). Second, they can collaborate to explore new solutions together (table 7). Ultimately, and most ambitiously, partners could develop a comprehensive spatial strategy for a circular economy of the Eurodelta, including hubs, infrastructures, processing facilities etc (table 8).

Table 6. Inspiration & knowledge sharing

Challenge	Example
Space management	- Knowledge sharing on local/regional spatial concepts and good practices
Development of circular markets	- Knowledge sharing on how to start & scale up local circular initiatives - Knowledge sharing on overcoming barriers around circular materials and practices
Financing CBE investments	- Knowledge sharing on the use and effectiveness of funding instruments
Data availability	- Knowledge sharing on monitoring and Data platforms
Cultural shift	- Knowledge sharing on circular requirements to incentivise circularity and awareness

Table 7. Explore and experiment

Challenge	Collaboration
Space management	- Spatial analysis & research to identify interregional flows, synergies, potential common solutions for the spatial challenges of individual cities/regions - Develop a Eurodelta CE-check for future spatial plans
Development of circular markets	- Exploring solutions for strengthening circular markets and addressing circular supply gaps - Explore development options of interregional circular supply chains - Explore supply & demand of secondary building materials on Eurodelta scale -Explore potential for new exchange platforms
Financing CBE investments	- Identify needs for larger-scale circular investments - Identify and explore relevant bigger investment subsidies, grants, loans or other funding instruments
Data availability	- Explore how to connect relevant Data-related initiatives in Eurodelta - Standardisation and coordination to allow Data sharing
Cultural shift	- Joint (action) research on industry acceptance - Fostering industry trust by a more effective showcasing & disseminating lessons from successful policies & projects pilots

Table 8. Strategic alignment

Challenge	Collaboration
Space management	- Planning the Eurodelta circular logistics and defining key circular spaces (hubs, links, etc.) from a Eurodelta region perspective
Development of circular markets	- Creating predictable Eurodelta circular markets
Data availability	- Data sharing material flows to anticipate circular material availability at the Eurodelta scale

Annex: Summary of CBE policies

For each ASSET city and region, this annex contains brief summaries of the CBE-related policy frameworks and specific policy actions & instruments as mentioned in the questionnaire.

AMSTERDAM

Strategic framework

In 2020 The City of Amsterdam published the first strategy on Circular economy (2020-2024), later followed by an implementation agenda (2022-2026). The strategy aims to significantly reduce the use of new raw materials and resources, contributing to a sustainable city. The strategy applies to the City Doughnut of the British economist Kate Raworth. The model describes how societies and businesses can contribute to economic development while still respecting the limits of the planet and our society. Amsterdam wants to be a fully circular city by 2050, and halve the use of primary, abiotic materials in the city by 2030. The strategy focuses on 3 promising value chains: a) Food and organic waste streams; b) Consumer Goods; c) Built Environment.

The leading player in the design and implementation of Amsterdam's circular policy is the cities' Urban Planning and Sustainability Department (Ruimte & Duurzaamheid – R&D). This department is part of the 'Space and Economy' Cluster within the City of Amsterdam. The cluster consists of 11 departments and three programmes that all contribute to realising the policy objectives of the city council. To realise its implementation agenda, the department works with other city departments and engages in partnerships with many relevant organisations.

Specific actions & instruments

The circular Implementation Agenda sets out more than 70 actions that the City of Amsterdam will plan and carry out in the coming 4 years in partnership with all Amsterdammers. Concerning the built environment, the following points are key:

- From 2022, all new designs for area developments, transformations and public space in Amsterdam will be based on circular criteria
- The Circular Area Development (CGO) framework sets criteria for circular area development and transformation, including social aspects, mobility, functions, cooperation partners, and liveability.
- Scaling up building with wood: the city is working in the Amsterdam Metropolitan Region towards a Green Deal leading to at least 20% of housing production being made of wood from 2025 onwards. The government, research institutions, and market players are collaborating towards this goal through the Timber Construction Covenant. On top of this Amsterdam is aiming to insulate 123000 dwellings by 2030.
- Focus on specific areas, namely: The Harbor of Amsterdam (a very important player in the Circular transition and ambitions to become a circular hub); Amsterdam Noord, where the circular neighbourhoods Buiksloterham and Schoonschip, de Ceuvel, t'Groene Hart have been developed; IJburg (East), with a lot of buildings were constructed from wood. In the new tendering of the island the city will also ask for the construction of a building hub to reduce unnecessary logistics; and Amsterdam Zuid-Oost, with the Nelson Mandela neighbourhood, where 700 biobased homes are constructed.
- Prioritising underground space and the multiple use of space, the 'integrated design method public space' was developed, geared to programming public areas in an integral manner. In this method, public and private parties work together from an early stage to reserve space below ground for a healthy living environment, for new energy systems, for solutions to problems caused by heat and precipitation, for the desired circularity, and for nature-inclusive design.
- Circular Insulation: Amsterdam is working to insulate homes using circular methods, aiming to find funding without incurring costs. They are increasing knowledge about bio-based construction materials like cellulose, flax, and cattail, and collaborating with construction organisations and academic institutions to create suitable materials. They are connecting customers and suppliers to promote market development and competitive pricing.
- Circular Renovation: For renovations and maintenance of its own real estate, the city is using the materials that are already present and/or new

organic or re-used construction material, as it did for MK24, a foundation for art education at Mauritskade 24.

- From Country to City: Alongside central government and the region, the City of Amsterdam will partner with construction firms and farmers to produce more bio-based construction materials to stimulate circular construction.
- Monitoring: To find out whether Amsterdam is on the right track, the city developed a Monitor with which we can determine the social and ecological impact of the transition. The Monitor charts the extent to which Amsterdam's economy has become circular and identifies areas in which more needs to be done.

BRUSSELS

Strategic framework

"Shifting Economy" is the name of the key Economic Transition Strategy of the Brussels-Capital Region. It is driven by 4 administrations (Bruxelles Environnement, Bruxelles Economie Emploi, Hub.brussels, Innoviris). Until 2030, the Shifting Economy aims to deploy 224 measures to adapt economic instruments according to the needs of the economic transition. This applies to a set of the following levers and instruments:

• Developing an ecosystem conducive to entrepreneurship
• Business financing, guidance, accommodation
• Public procurement
• Policy supporting Research & Development and Innovation
• Support for social and democratic entrepreneurship

They focus on 6 priority sectors:

• Food (Good Food)
• Resources and waste (PGRD)
• Construction (Renolution)
• Cultural and creative industry
• Mobility (Good Move)
• Health

The Brussels Regional Programme for a Circular Economy, "Be Circular," serves as the central framework for all circular economy initiatives in Brussels, aiming to reconcile economic and environmental goals, support local production, optimise land use, and integrate transportation needs. The goal is to stimulate economic innovation, create new jobs, and enhance the quality of life for Brussels' residents.
Through its Regional Sustainable Development Plan (PRDD), the region promotes renewable sources for inputs; radically increases internal recycling loops; and minimises pollution and waste.
To manage resource stocks, the focus is on internal resources and the application of the "city-mining" or "resource city" concept.

Key stakeholders involved:

- Brussels Perspective: facilitates dialogue and engagement with construction companies, material suppliers, waste management providers, and citizens, to align their interests and coordinate the transition towards a more circular built environment.
- Bruxelles Environnement: The regional environmental agency, responsible for environmental policies and initiatives, including those related to the circular economy and circular construction.
- Bruxelles Economie-Emploi: The regional economic development agency, focused on supporting businesses and creating employment opportunities in the transition to a circular economy.
- Hub.Brussels: The regional agency for business support and internationalisation, which can help promote and facilitate the adoption of circular business models and practices.
- Innoviris: The regional innovation agency, which can support research, development, and innovation in the field of circular economy and circular construction.
- Brupartners: The regional socio-economic council, which brings together representatives from the public, private, and civil society sectors to provide advice and guidance on economic and social policies.
- Citydev, Finance&Invest, Port de Bruxelles, Bruxelles Mobilité, Actiris, ABP-BruxellesPropreté, and Brulocalis: Other regional agencies and organisations that are involved in various aspects of the circular economic transition, such as real estate development, financing, logistics, mobility, and waste management.

Specific actions & instruments

- Renolution: this is a strategy for the renovation of Brussels' buildings;
- Totem: A materials impact assessment tool which provides information for comparing construction projects, drafts environmental profiles of buildings using European and JRC recommendations, and offers a detailed overview of the environmental profile of materials, components, building elements, and buildings.
- Gro: a tool to measure and enhance the sustainability of construction projects. The ambition of GRO is to achieve future-oriented, comfortable buildings through an integrated design process, with a strong focus on circular construction
- RenoLab: Part of the Renolution strategy, this is a call for projects that aims to contribute to the large-scale deployment of innovative solutions for the sustainable and circular renovation of Brussels buildings
- Vademecum Bâtiment circulaire: a manual to support circular construction
- "Advitam material": a platform to connect circular stakeholders of the CBE value chain in order to network and exchange good practices.

DUISBURG

Strategic framework

North Rhine-Westphalia wants to become one of the most modern and climate-friendly industrial locations in Europe. To achieve this, the industry must reduce the use of fossil carbon sources as much as possible in future and replace them with sustainable alternatives, such as secondary raw materials obtained through recycling, biomass or CO2.

In Duisburg, one policy (council order) is to strengthen the effort of the local economy to reduce carbon emissions ("Klimapakt"). Moreover, there are several other initiatives (Urban Zero) to reach the goal of a carbon-free city development.

Work on the topics of CE and CBE only began in 2023. The city collaborates with companies to implement a circular economy, including DBI, which focuses on designing and implementing economic development strategies. The Circular

Rhein.Ruhr network was founded for this purpose. It is a joint initiative of DBI and Wirtschaftsbetriebe Duisburg (municipal waste management company). The aim is to initiate a network, to transform Duisburg and the region Rhine-Ruhr into an innovative, resource-efficient and strong economic region with innovative circular business models by bringing together key stakeholders from business, science and politics to accelerate the transformation towards a circular economy. In order to accelerate the circular industrial transformation, the network is focusing on the three strong sectors: metal, construction and logistics by using the region's innovative strength to close material cycles.

Key stakeholders involved: City of Duisburg, th business development agency Duisburg Business (DBI), Wirtschaftsbetriebe Duisburg AöR, GEBAG Duisburger Baugesellschaft mbH, Niederrheinische IHK zu Duisburg, Thyssenkrupp MillServices & Systems GmbH, Duisburger Hafen AG, FEhS – Institut für Baustoff Forschung e.V. and more.

Specific ambitions for the sectors include:

- Construction industry: Promotion of resource-efficient construction processes and sustainable building materials (e.g. wood or newly innovative materials), establishment of processes and applications for the recycling of construction waste (e.g. reuse of materials, digitalization of buildings, creation of material marketplaces), promotion of secondary materials and by-products (e.g. slag) in the field of building materials
- Metal industry: introduction of innovative technologies for the efficient use of primary and secondary resources, promotion of methods for the recycling and reuse of by-products (e.g. slag)
- Logistics industry: optimization of logistics chains for more efficient use of resources, development of sustainable packaging solutions and transport processes.

Specific actions and instruments

The newly-founded Circular Rhein.Ruhr network pursues the following goals and activities:

- Accelerate the transformation of the Rhine-Ruhr region into a resource-efficient economic cluster

- Supporting in the efficient use of resources and in increasing the use of secondary materials
- Creating an interdisciplinary network of industry, business, research institutions, political players and other interest groups
- Representing the interests of its members vis-à-vis political decision-makers
- Promoting innovation in the areas of materials management, product design, business models and recycling technologies

Furthermore, the Duisburg-based companies ThyssenKrupp Steel and TSR have started their circular journey. The new facility TSR will be able to process up to 450,000 tonnes of input material (such as end-of-life vehicles, mixed scrap and large household appliances) every year and transform it into the recycled product TSR40. Thanks to TSR40, TSR Recycling is now able to supply the steel industry with a raw material that is not only energy, climate and resource-friendly but also enables the volumes of recycled material used in steel production to be significantly increased without there being a loss in quality. The new processing plant in Duisburg is, therefore, not just an important milestone for the whole of the industry. It is also a flagship project that will enable the steel industry and other steel-processing sectors – such as the automobile industry – to transform their systems and manufacture greater volumes of sustainable high quality products.

KREFELD

Strategic framework

Like Duisburg, Krefeld is situated in North Rhine-Westphalia, which wants to become one of the most modern and climate-friendly industrial locations in Europe. On the local level, Krefeld took a council decision to seize opportunities for a circular economy for more sustainable climate protection and new jobs. It includes concept development for various aspects of the circular economy as a whole and across administrations. Moreover, existing initiatives are to be strengthened and new ones identified in order to advance the transformation towards a circular economy in Krefeld effectively and holistically. The municipality partners with SWK AG, the municipal provider for supply, transport, and waste disposal, to promote general circularity initiatives. More specifically, a

collaborative network under the KREFELD BUSINESS umbrella brand focuses on advancing circular built environment initiatives, bringing together the municipality, GGK (the property development company managing city-owned properties), and WFG (the economic development agency).

Key stakeholders involved: the City of Krefeld, Krefeld Business, SWK AG (municipal supply, transport and waste disposal company)

Specific actions and instruments

The City adopted a resolution (through the Central Building Management Committee for Sustainability in Building Construction) to implement sustainability aspects in the Building Construction Standards for Municipal Properties. This includes:

- Sustainability standards for the planning and implementation of new construction projects and selected conversions or extensions
- Standards for circular economy, including health aspects (e.g. light, indoor air quality, acoustics, etc.)

Krefeld is involved in the following relevant projects and cooperations:

- Healthy Building Movement: Dutch-German healthy and circular construction project
- Euregional Sustainability Center: Dutch-German project to boost circular economy in the manufacturing sector and the built environment
- Circular Valley: Initiative to boost circular economy, mainly in North-Rhine Westphalia, where WFG Krefeld partners with

SOUTH HOLLAND

Strategic framework

In The Netherlands, municipalities can make their own circular policies related to a CBE, but the province has responsibilities in areas such as spatial planning, infrastructure, environmental protection, and regional economic development.
The strategy Circular South-Holland is the main policy concerning the transition to a circular economy. It identifies four spatial systems that need adaptation: the infrastructure and logistics system, the residual stream system, the water and

soil system and the energy system. It contains action programs for 6 different arenas: the greenport, the rural areas, the port (industry), the cities, the delta and the province as a whole. It also includes a section about housing and the spatial aspects of the circular economy. The ambition is to have a 100% circular South-Holland in 2050, 50% in 2030.
The strategy Toekomstbestendig Bouwen (Future proof building) stipulates that municipalities have to research opportunities for circular construction in their policy.
Within the Province, the CBE is managed by the 'transition manager' from the interdisciplinary team 'Circular South-Holland'. His job is to accelerate the transition to a CBE by forming 'front runner networks' (such as www.netwerkbiobasedbouwen.nl), helping municipalities (such as developing training programs), conducting studies and helping colleagues integrate circularity in their own work such as housing or spatial planning.
Externally, the province engages with different networks with partners such as Vernieuwersnetwerk Biobased Bouwen, Cirkelstad, Building Balance, City Deal Circulair and Conceptueel Bouwen. The province participates and facilitates (subsidies) a few networks which host municipalities, builders and knowledge institutions.

Specific actions/instruments
The Province supports the circular transition in several ways:

- Creating or subsidising networks
- Subsidising projects
- Making/brokering deals ('housing deals') with circularity in it
- Conducting research
- Helping municipalities with expertise or training programs and supporting the standardisation of circularity construction norms.

A full overview of the provincial activities can be found on: https://circulair.zuid-holland.nl/activiteiten?_sft_category=biobased-bouwen+gebouwde-omgeving+secundair-bouwen

THE HAGUE

Strategic framework

The goal for the city of The Hague is to take significant steps towards a circular economy by 2030 and a fully circular economy by 2050.
The Hague aims to increase recycling- and upcycling of waste, to reduce the consumption of resources/raw materials, to replace finite resources/raw materials and reuse the resources/raw materials already present within the city. In 2018, the City published a document titled “Circular The Hague, Transition towards a sustainable economy”, that identified opportunities, and formulated ambitions. Still, CE and CBE are in their infancy stages. The City of The Hague still is primarily organised for waste collection and waste disposal.
Recently, the city has developed a “Work Agenda Circular Economy” (for the period 2023-2026) tasked to realise its circular ambitions and monitor its progress. It has three focal themes:

- Promoting circularity in the municipal organisation
- Encouraging circular entrepreneurship
- Promote circular construction

Regarding CBE, the plan intends to reach 100% circularity in its publicly tendered projects in the construction sector by 2026. Moreover, the city prioritises transformation of buildings over demolition and new construction.
Circular economy ambitions such as waste reduction and reuse of goods and materials can also be found in the broader “The Hague Climate Agreement” that includes commitments to reduce CO2 emissions and collaborate for a green and healthy city. Other relevant documents are the Sustainability Plan, the Resource Plan and an Economic Implementation Agenda; all contain ambitions and actions (often overlapping) concerning the circular economy.

Specific actions/instruments

- New people will be recruited to work on CE and CBE in the City of The Hague at the Economic Development department
- The city of The Hague has signed the Concrete Deal (NL: Betonakkoord), committing the industry and supply chains to make concrete more sustainable. It focuses on four themes: CO2 reduction, circular economy, innovation & education and natural capital
- Digital platforms are being tested to match supply and demand of secondary building materials (demolition)

REGENALYZE

Den Haag

Gemeente Amsterdam

KREFELD BUSINESS
Aus denkbar wird möglich.

DUISBURG BUSINESS & INNOVATION

provincie Zuid-Holland

RÉGION DE BRUXELLES-CAPITALE
BRUSSELS HOOFDSTEDELIJK GEWEST