Re-Value

Re-Value Innovation Cycles experience-based report 1

Re-Value Deliverable D1.2

Report information

Deliverable: D1.2: Re-Value Innovation Cycles experience-based report 1

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Executive Summary

The Re-Value project is all about making our cities better places to live for both us and our environment. The project is called "Re-Value" because it works on making our cities more valuable for everyone who lives there by understanding value and co-benefits in different ways. By sharing their ideas and getting involved, stakeholders will help shape the future of their city.

Nine European cities, Ålesund, Bruges, Burgas, Rimini, Cascais, Constanța, İzmir, Písek, and Rijeka develop their roadmaps, waterfront pilots and long-term territorial transformation plans together with transversal and local support partners, aiming to address climate neutrality, GHG emissions, and urban quality by 2030. The first four are the Lead Cities (LC) and aim for full-scale deployment in their pilots. The five Replication Cities (RC) will engage in a dynamic exchange with the first group, learning from their experiences while also contributing their own insights. Through this collaborative process, they will adapt relevant methods and solutions to their unique contexts, co-developing roadmaps, waterfront pilots, and long-term territorial transformation plans.

The cities are using three types of Innovation Cycles to help them develop narratives for this transformation, find and apply the relevant data to support these narratives with targeted scenarios, and find the right partnerships and investments to make it all happen. Innovation Cycles are continuous processes of discovery, experimentation, validation, and replication, to create value for all stakeholders. Transforming urban areas takes years; using shorter Innovation Cycles allows us to experiment, fail, and learn faster. By working with different groups and experts, we are making sure the plans we come up with are what the community really needs and wants.

In this report, you can read how these Innovation Cycles were developed in the first six months – January to June 2023 – of the project, and how they were anchored in each of the Re-Value cities.

This is the initial version that will be further developed throughout the project period. The next version is due in June 2024 (M18) as D1.4: Re-Value Innovation Cycles experience-based report 2.

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1 What is this report about?

In the Re-Value project, nine European waterfront cities are working together to show how we can make our cities better for both people and the environment. Building on the New European Bauhaus[1] values (sustainable, beautiful, inclusive) and principles (participatory, multi-level, transdisciplinary), the nine cities are strengthening their connection to the waterfront, making it even more valuable and reducing any negative effects it might have.

- Four cities—Ålesund, Bruges, Burgas, and Rimini—are leading the way. They are showing us how we can plan and design our cities to fight climate change and cut down on pollution by 2030.
- Five more cities—Cascais, Constanța, İzmir, Písek, and Rijeka—are following their lead. They are learning from and exchanging knowledge with the lead cities and figuring out how to transform these insights for use in their own roadmaps, waterfront pilots and long-term territorial transformation plans

Together, these cities are showing us that we can make big changes to our cities and our planet, one step at a time. By doing this, they are making the idea of living in these cities even more appealing for everyone who lives there or works there.

Three Innovation Cycles (IC) are helping the nine waterfront cities to revalue their urban planning and design processes and make rapid systemic changes, through discovery, experimentation, validation, and replication:

- Innovation Cycle 1, also known as **Story-Building** (Task 1.2), is led by the Norwegian University of Science and Technology (NTNU), Teatret Vårt (TV), and Sladovna Písek (SP). In this cycle, we use art and culture to help the Re-Value cities, partners, and stakeholders build narratives that empower them and build ownership of the journey to making our cities climate-neutral. We will work together within each city, and across the cities, to create a shared language, understand our goals, and figure out how each of us can make a real difference.
- Innovation Cycle 2, also known as **Scenario-Building** (Task 1.3), is led by ECOTEN, the Flemish Institute for Technological Research (VITO), AugmentCity (AC), and NTNU. This cycle uses data-driven strategies to help the Re-Value cities plan and design their waterfront pilots, and to use these insights in their long-term territorial transformation plans. We will work with the cities and partners to find new ways of using information to support the stories co-created in Innovation Cycle 1. Using data and data-driven tools, we will test different ways to make these stories real and experiment with them on a small scale to see what works best.
- Innovation Cycle 3, known as **Investments & Partnerships** (Task 1.4), is led by the Global Infrastructure Basel Foundation (GIB) with Local Governments for Sustainability (ICLEI) as a contributor. It centres on understanding and supporting what the cities need to develop partnerships and financing mechanisms that really help their waterfront projects. The aim is to develop funding and financing strategies that create value for everyone involved, including investors, politicians, real estate developers, property owners and other decision-makers.

[1] https://new-european-bauhaus.europa.eu/index_en

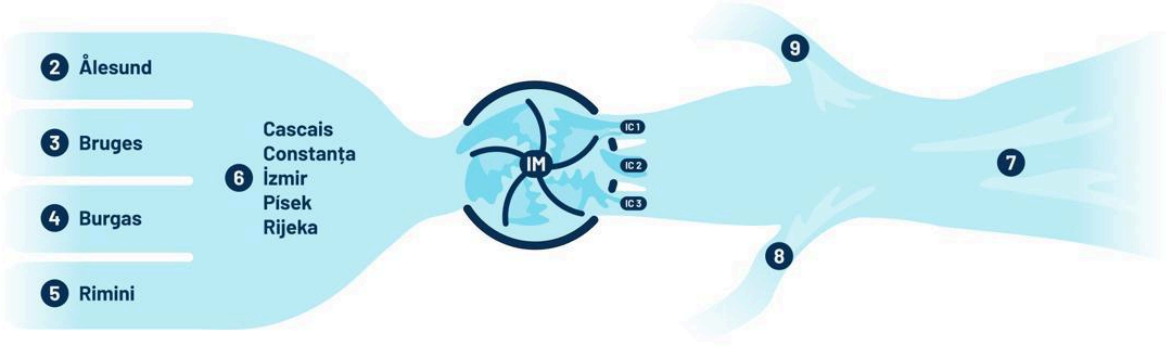

Figure 1.1: Development flow of Leading Cities & Replication Cities (WP2-6) supported by the Impact Model and the 3 Innovation Cycles, enriched by WP8/9, evaluated later by WP7.

The Innovation Cycles on story-building, scenarios, and investments and partnerships, will not only support the cities in creating and implementing their roadmaps, waterfront pilots and long-term territorial transformation plans, this way of working will also encourage and enable everyone to come up with new ideas and implement them together. With this work, we hope that our stakeholders will say, "I truly feel like I helped make this happen."

Beyond the core partners introduced above, the Innovation Cycles will be supported by cross-cutting Replication Teams of supporting partners who are not the cities themselves. We preliminarily identified the following teams:

- Governance and regulatory challenges (NTNU, ICLEI, UNG, SU)
- Spatial quality (NTNU, UNG, UNIBO, SU)
- Art and culture (NTNU, TV, SP, UNIBO, UNG)
- Financial and circular value chains (GIB, NTNU, LNEG, IZTECH, IFLA, SU)
- Data-driven co-creation (ECOTEN, VITO, AC, IZTECH, NTNU)
- Energy (NTNU, LNEG, IZTECH, UNIBO)
- Mobility (NTNU, ZMC, UNG, SU)
- Nature-based solutions (NTNU, IFLA, UNG, GIB, IZTECH)

We are updating the teams according to partners' interest and capacity, and aligned with the specific needs and priorities of the cities. The cross-cutting Replication Teams will support the Innovation Cycles in refining the cities' roadmaps, waterfront pilots and long-term territorial transformation plans, and help connect the results to Re-Value's learning and outreach activities (WP6-9) such as the Community of Practice (WP6), scientific publications, student workshops, exploitable results and similar activities.

The Innovation Cycles will happen in parallel to the first three phases of the Re-Value project:

- **Phase 1 (January - June 2023):**
  - Inception
  - Impact Model
  - Understanding & sense-making (Lead Cities + Replication Cities)
- **Phase 2 (July 2023 - June 2024):**

    - Co-creation & contextualisation, with story-building (Lead Cities + Replication Cities)
    - Detailed Roadmaps, with scenario-building, investment & partnership models (Lead Cities)

- **Phase 3 (July 2024 - June 2026):**
    - Experimentation & full-scale deployment (Lead Cities)
    - Detailed Roadmaps, scenario-building, investment & partnership models (Replication Cities)

- **Phase 4 (July - December 2026):**
    - Hand-over of pilots & plans to cities and partners

In this Deliverable, we will present how the Innovation Cycles work and what we have learned so far in the first six months of the project (Phase 1). During this initial phase, the Re-Value cities have gotten to know each other's local situations, challenges, and chances, as well as learned about the most recent research related to their systemic challenges.

At the start of the Re-Value project, during our kick-off meeting in Bruges from January 31st to February 2nd, 2023, the Innovation Cycles were kick-started with the cities, local supporters, and experts, in three interactive sessions (one session per Innovation Cycle). Through these sessions, the cities and partners together made sense of the impact and connections they want to achieve, and where they need new methods or tools to explore these areas further. These initial findings were developed further during two online City Dialogues from February 2023 to June 2023. Each city with their local knowledge partners had their own City Dialogue sessions, facilitated by the Innovation Cycle partners. The detailed timeline of the City Dialogues is available in Annex 1.

By the end of the Re-Value project, the three Innovation Cycles aim to have created and improved 27 Stories (3/city), 23 Scenarios (2/LC, 3/RC), and 18 Investment and Partnership (2/city) Models with the cities, local groups, and other partners. WP8 "Outreach & Exploitation" will support us in sharing and discussing these results with other cities and projects.

2 Innovation Cycle 1 - Story Building

2.1 What is Re-Value's Innovation Cycle 1?

Re-Value's Innovation Cycle 1 (IC1) is about story-building, a comprehensive process that invites cities, partners and multiple stakeholders to actively participate in co-creating the narrative of their urban landscape. We want everyone to feel that they own the journey to making our cities climate-friendly. In this first phase, through online and in-person sessions, we will work together to understand how we can make a real difference.

Story-building is a process designed to help everyone involved become more aware of the knowledge and experiences they have of their everyday life and work —both as individuals and as groups—and use that knowledge in creative ways to tackle the tough challenge of becoming climate-neutral. Story-building goes beyond fixed narratives, emphasising the ongoing and collaborative development of stories that capture the essence of a community's past, present, and envisioned future.

IC1 will encourage cities and partners to break away from the usual way of doing things and rethink their approaches. By employing diverse tools, including interactive workshops, visual elements, and digital platforms, story-building becomes a catalyst for cross-disciplinary collaboration, challenging established norms and fostering a collective vision for sustainable urban growth. Story-building can fundamentally reshape how we approach and envision urban development, creating a narrative reflecting all stakeholders' values, aspirations, and shared commitment.

This process is partly facilitated by arts and culture, as they have the capability of asking critical questions, and helping us see through business-as-usual patterns. IC1 will also bring a social aspect, to strengthen a sense of shared purpose and teamwork, and make sure the lessons learned stick in the cities' and partners' everyday work.

Re-Value believes that story-building is key to understanding the past, present, and the future of a context, and how our cities can become both great places to live and good for the environment. By working with artists and cultural groups, and benefiting from their role as mediators, facilitators, and much more, IC1 will make sure everyone has a say in how our cities grow and change. We will use creative methods to come up with new ideas and make our communities better for everyone.

This approach is not just about getting people involved—it is also about showing leaders and investors the potential of making cities more sustainable. By building powerful stories and using data to back them up, IC1 hopes to inspire action and create a better future for our cities. Building on IC1, Innovation Cycle 2 (IC2) will use data to help us make decisions about our cities, and Innovation Cycle 3 (IC3) will look at how we can invest in and partner with others to make those ideas a reality.

2.2 Kick-off meeting

During our kick-off meeting in Bruges on February 2nd, the story-building lead (NTNU, TV, SP) hosted a workshop for all Re-Value cities and transversal partners to explore how we can create stories in the Re-Value cities together, and how these stories will help blend climate neutrality with high-quality city

living. Teatret Vårt (TV) and Sladovna Písek (SP) showed partners first-hand how they use story-building in their everyday work and in their own cities (Ålesund and Písek), and how they plan to bring these creative methods into our project. Junior Achievement Europe (JAE) also joined to talk about the Innovation Camps happening in each Re-Value city as part of WP8, and how these will match up with what TV and SP do.

Sladovna Písek (SP) prepared three short sessions focusing on the experience with the water bar. These were experiential, participatory short performances for groups of participants who used all their senses to taste water from a spring in the Czech Republic. They also enjoyed a story created by children. It was an emotional experience designed to sensitize participants and create an atmosphere for a better appreciation of water and its importance. Additionally, the participants had the opportunity to write a short message to the kids, which facilitated a brief dialogue. In the session, we also prepared for the upcoming online City Dialogues to gather insights, priorities, and needs by asking questions such as:

- Are there story-building or similar activities with arts and culture in your city?
- Are there creative things happening with kids and young people in your city?
- How can Re-Value get involved with the organisations that run these activities?

Figure 2.1: Storybuilding and engagement session by Sladovna and Teatret Vårt

The City Dialogues (see next Sections) will be the starting point for Artistic Missions by TV and SP to each Re-Value city, to help transfer their activities and support local arts and culture organisations in getting involved. Similarly, the dialogues will support JAE in initiating the preparations for their Innovation Camps in each Re-Value City, in close cooperation with the local or regional JA branch (WP8).

2.3 City Dialogues, 1st round (23 February – 10 March 2023, online)

The initial round of City Dialogues took place online, involving the leads from WP1, WP9, WP6 and WP7 to link up with the Community of Practice, project management, and monitoring of project results and impact. We organised separate meetings for each city together with their support partners.

One key aspect all the cities had in common was their desire to use the project to strengthen connections between people and the waterfront. They want to highlight elements such as colour, identity, and history, as well as tackle more challenging issues such as unsustainable tourism and its impact on the waterfront. Story-building will play a big role here by drawing in stakeholders right from the start, especially young people, getting them involved in the city's projects, and creating first-hand experiences of how it relates to their everyday lives. Re-Value partners, along with local cultural groups and NGOs, will use artistic and cultural practices to help everyone feel ownership towards what is happening. In addition, many of the cities have major cultural events that lots of people attend, and Re-Value will team up with them. IC1 will help the cities figure out what makes them special and who are the important stakeholders in their community to strengthen this, how to use them to bring the stakeholders that are usually not represented to the fore, and then tie that into Re-Value's story-building efforts.

During the story-building sessions, it also became clear that the cities want to expand the focus of urban planning and design beyond just land to include sea and rivers. They want to use the project to bring together different departments within the municipality to work on this, and create a common narrative for their cities including the water. By finding the synergies (i.e., co-benefits) between climate neutrality and urban quality and integrating them into the waterfront pilots and long-term plans, they will be able to show local and regional politicians, potential investors, and regulatory authorities why this is worth the investment. Already during the kick-off sessions, the cities started to discuss how they could work together to address these challenges, going beyond what was initially outlined in the project's Description of Action. The Community of Practice (WP6) and Innovation Cycle 3 (explained in Chapter 4) will both help support this effort.

Thirdly, the sessions highlighted how crucial it is to assist the cities in documenting and assessing the core qualities they aim to achieve, going beyond indicators that are easily accessible and already have data. Many aspects related to story-building, such as feelings of empowerment and ownership, identity and heritage, and the co-benefits of climate neutrality and urban quality, are not clearly defined or measurable (at least not yet). This will be a key connection to Innovation Cycle 2 (explained in Chapter 3).

2.4 Needs assessment of story-building for the Re-Value Cities (spring 2023, in parallel to the rounds)

The Re-Value Capacity Assessment (held in the project's first phase, Spring 2023) helped the Waterfront Pilot Cities team gain the knowledge and skills needed for success. Coordinated by ICLEI Europe, this process starts with a simple questionnaire and a follow-up interview to understand cities unique needs. Internal insights are vital to guide the project in creating a powerful capacity-building program that supports planning, design, and implementation efforts. The participation helped integrate essential topics and best practices, fostering a community that tackles waterfront development challenges. The Innovation Cycle 1

part focused on five aspects: building partnerships, engaging the next generation, maximising artistic exposure and relationships and active engagement with JAE and the innovation camps.

2.4.1 Ålesund

Ålesund's capacity assessment has uncovered exciting opportunities to build valuable partnerships beyond the established project collaborators and internal municipal departments. Notably, connections with **Aggregat kunstnerfellesskap**, a local artist association, and **The North West Conference**, a regional cultural forum, have been identified. These partnerships hold immense potential to engage with the city's vibrant creative community, potentially expanding the reach and impact of the Re-Value project, and we are optimistic about the positive outcomes they will bring.

An integral part of Ålesund's strategy involves collaborating with **Verksted Da Vinci**, an organisation dedicated to artistic activities for children. By including this partnership, the Re-Value project ensures that the perspectives and contributions of younger generations are considered, fostering a sense of ownership and involvement among the city's youth.

Although the specific benefits of an Artistic Mission by TV and SP are still under evaluation, the assessment significantly highlights its potential to boost public awareness and engagement with the Re-Value project. This initiative could be a powerful tool to captivate the community and draw attention to the project's goals and activities.

The positive response towards cooperating with local representatives of JAE is a promising development. This partnership could bring valuable expertise and involve participation in upcoming Innovation Camps. Efforts to formalise this collaboration are underway, signalling a proactive step towards enriching the Re-Value project with additional resources and insights, likely in collaboration with the Norwegian arts council.

2.4.2 Bruges

Bruges's capacity assessment has revealed promising partnerships with key cultural and creative stakeholders, including **Entrepot**, a platform for temporary uses of vacant buildings facilitated by **De Republiek, and Kunstenal,** a local artists' collective. These collaborations open access to underutilised spaces and connect the Re-Value project with the city's vibrant creative community, enhancing the project's scope and reach. The circular hub of the city, a network platform which inspires, connects and initiates, helps to design the story about circularity in the Kaaidistrict.

Engaging youth is a top priority for the project. Partnerships such as **Entrepot's Project Josie**, which focuses on youth involvement in greening initiatives, and the **Honours Degree program of Vives University** , which engaged last year students in developing climate neutrality strategies for the Quay district (Kaai district) from September till December 2023, ensure that young people are actively involved in shaping the future of their city. The youth department of the city will work with 'Plan K', a guide for local authorities, published by 'Chid and Society', a knowledge and research centre that works with children, youth and space. The guide describes 4 methodologies about how we can involve youth in a larger story about space and climate.

An Artistic Mission by TV and SP (television and performing arts) is a powerful tool to enhance public acceptance of the area's transformation. By drawing in new audiences who might not typically visit, this

initiative could broaden the appeal and user base of the revitalised space, fostering a more inclusive community engagement.

The project has initiated promising contact with Vlajo, presumably the Flemish Agency for Youth Affairs and Child Care, to lay the groundwork for participating in upcoming Innovation Camps. This collaboration will leverage Vlajo's expertise and resources to enhance the project's impact.

The city is committed to making a significant contribution to the Innovation Camps by crafting 3-6 specific challenges for participating youth to tackle; ensuring suitable spaces and logistical support for the events; joining the judging panel and presenting the challenges to participants; linking with related projects like Entrepot to foster local collaboration and ownership; and identifying schools and youth organisations to invite for participation.

2.4.3 Burgas

Burgas's assessment has identified the **Youth International Center Burgas** as a crucial stakeholder for the Re-Value project. Partnering with this organisation can infuse the project with cultural and creative activities, providing valuable connections with young people and fostering a more vibrant, innovative environment.

The collaboration with the **NGO Chance for the Nature and Children of Bulgaria** underscores the project's dedication to involving younger generations. This partnership allows children to engage in creative activities that align with the Re-Value project's goals, ensuring their voices and ideas contribute to its success.

Although the specific benefits of an Artistic Mission by TV and SP (television and performing arts) are still under consideration, the potential for such a mission remains promising. It could significantly increase public awareness and engagement with the Re-Value project.

The project has successfully established communication with local JAE representatives, organising a dedicated event to address specific topics and issues related to the Re-Value pilot zone. This tailored approach facilitates focused discussions and more actionable outcomes, enhancing the project's overall effectiveness.

The Municipality of Burgas, in collaboration with its local university network, showcases a proactive approach to fostering innovation through initiatives like entrepreneurship competitions and hackathons. The annual **Burgas Blues** competition further bolsters this strong foundation, focusing on green and blue innovations and solutions. This competition aligns perfectly with the Re-Value project's goals, promoting a culture of innovation within the Burgas region.

2.4.4 Rimini

Rimini's capacity assessment has unveiled various cultural and creative stakeholders potentially suitable to support the Re-Value project. Key organisations include **Centro Zaffiria**, **Palloncino Rosso**, **Matrioska Lab**, **Città Visibili**, **Santarcangelo dei Teatri**, **Alcantara Motus** along with other renowned arts and theater companies and musical groups operating locally. Partnering with this diverse group will infuse the project with creative energy and broaden its reach within the city's cultural landscape.

The project's commitment to nurturing creative expression in children is evident through collaborations with organisations like **Centro Zaffiria** and initiatives such as the **laboratori didattici di educazione**

ambientale (environmental education workshops), the **Rimini Blue Lab** (social and cultural innovation lab on ocean literacy and blue economy issues) and the **Festival Mare di Libri** (children's book festival). These partnerships and synergies will ensure that the Re-Value project's message resonates with future generations, fostering a lasting impact on the community.

An Artistic Mission by TV and SP is envisioned to expand public awareness and attract new stakeholders to the Re-Value project. By leveraging the captivating power of performing arts, this mission has the potential to significantly broaden the project's visibility and impact, engaging a wider audience.

A productive dialogue has been initiated with JAE Italy; this collaboration promises to provide valuable insights and pave the way for future joint efforts, enhancing the project's overall effectiveness and reach.

Rimini plans to engage a multi-generational audience in the upcoming Innovation Camps organised by JAE. By collaborating with schools and families, the city aims to reach a wider range of participants, fostering a spirit of innovation across generations. This collaborative approach is expected to generate impactful ideas and solutions to benefit the Re-Value project, driving sustainable and creative development.

2.4.5 Cascais

Cascais is well-equipped with a rich inventory of art and cultural organisations, providing a valuable resource for the Re-Value project. This database enables targeted outreach to collaborate with relevant organisations within the Waterfront Pilots areas. Esteemed institutions like the **Cascais Music Conservatory**, the **Professional School of Theatre of Cascais**, and the **Estoril Arts Academy** offer expertise and potential partnership opportunities, enhancing the project's cultural and creative dimensions.

Schools in Cascais are pivotal in nurturing creativity among younger generations. Their existing focus on thematic activities presents a prime opportunity to align with the Re-Value project's goals. The **YOUTH PARTICIPATORY BUDGET** initiative offers a unique platform for student and community involvement in shaping the project's direction. Additionally, the city's comprehensive environmental awareness program, which reaches over 20,000 students and teachers annually, provides a solid foundation for integrating sustainability concepts into the Re-Value project.

An Artistic Mission by TV and SP could be highly beneficial for the Re-Value project in two key ways:

- Offering valuable training and support to artistic schools, museums, and other cultural organisations within the city, enhancing their capabilities.
- Showcasing these artistic activities can raise public awareness and support for the Re-Value project. Strategic planning and collaboration with local art and cultural organisations will ensure these activities effectively resonate with the target audience.

The specific approach to engaging with the Innovation Camps organised by JAE will be meticulously planned in collaboration with local JAE representatives. This joint planning will ensure that the city's participation is well aligned with the camps' overall goals, fostering a cohesive and impactful experience.

2.4.6 Constanța

Constanta's capacity assessment has identified numerous cultural and creative stakeholders within the pilot area, particularly in the Old Town Centre. These include established institutions such as **museums, theatres,** and **various confessional churches**. These organisations have extensive experience organising cultural

events, especially during the summer, presenting valuable opportunities for collaboration. Their involvement can significantly raise awareness and engage the public in Re-Value initiatives. Furthermore, the city's own role in organising cultural events within the pilot area enhances the project's visibility and reach.

While existing creative activities for children in Constanța are sporadic and lack a cohesive focus on climate neutrality, there is great potential for future collaboration. The Re-Value project can explore partnerships with private organisers of children's activities to integrate climate-related themes, creating a more impactful and engaging program for younger generations.

The potential benefits of an Artistic Mission by TV and SP will be further explored during the project's implementation. The initial vision is to leverage artistic activities to convey clear and engaging messages about climate neutrality to the public, increasing awareness and support for the Re-Value project.

The project has successfully communicated with the local JAE representative and developed a joint activity plan for 2023. This collaborative foundation sets the stage for continued productive engagement with JAE, enhancing the project's strategic alignment and effectiveness. Constanța plans to actively participate in the Innovation Camps organised by JAE through several initiatives, including:

- Collaborating with the School Inspectorate to streamline the organisation of camps within schools.
- Proposing themes relevant to the city's specific needs to ensure the camps effectively address local challenges and opportunities.
- Promoting the camps and providing logistical support to encourage wider participation and engagement from the community.

2.4.7 İzmir

The capacity assessment in İzmir has highlighted key stakeholders within the city's cultural and creative sectors. Key platforms include **İzmir Art**, which promotes artistic activities, and the **İzmir Mediterranean Academy**, known for its "Good Design Workshops." These organisations bring valuable expertise and offer great collaboration opportunities that can greatly enhance the Re-Value project. The Re-Value project emphasises youth involvement by collaborating with several dynamic organisations, such as the İzmir Sustainable Urban Development Network, the İzmir City Council Youth Assembly, and the Directorate of Youth Work and Social Projects, which focuses on Youth Municipality initiatives. These partnerships will ensure that the perspectives and innovative ideas of younger generations are incorporated into the project, promoting a more inclusive and progressive approach.

An Artistic Mission by TV and SP offers exciting co-working possibilities to enhance public awareness and support for the Re-Value project. Collaborating with established institutions like **İzmir Metropolitan Municipality's department of Culture and Arts, İzmir Mediterranean Academy**, and **İzmir City Theaters** can leverage broad reach and the captivating nature of performing arts. The goal of this strategy is to reach a broader audience and boost community involvement. Proactive steps have been taken to establish collaboration with JAE representatives. On March 8th, contact details were sent to relevant parties, leading to a response from JAE with information on the JA Türkiye representative. An online meeting with local JAE representatives is anticipated soon, marking an essential step in building a collaborative solid foundation.

İzmir plans to co-host workshops and innovation camps in partnership with local JAE representatives as part of the Re-Value project. These camps aim to connect Re-Value's objectives with citizen science initiatives,

promoting a culture of innovation and encouraging active community participation. This joint effort is anticipated to produce meaningful ideas and solutions, helping to drive the project's goals forward.


Figure 2.2: Examples of citizen science initiative implemented in İzmir (opening time: April 2023)

2.4.8 Písek

Písek's capacity assessment has highlighted several valuable partners within the city. Established organisations such as **Sladovna Písek** and the **Municipal Library of Písek** bring extensive experience and resources. Additionally, active citizen groups like "**Voda a Zeleň**" (Water and Greenery) and "**Aktivní Písek**" (Active Písek) showcase strong community interest in urban development, making them ideal collaborators for the Re-Value project.

The Re-Value project places a strong emphasis on youth participation through a variety of creative activities. Previous **initiatives like Earth Day, "Hlava v Písku" (Head in Sand)**, and the **annual town festival** have successfully engaged young people. Future plans include a 3D model building competition for elementary school students, collaborations with high schools via "Aktivní Písek," and potential participation in **Urbact** projects focused on youth engagement and urban planning. These efforts foster creativity and a sense of ownership among the younger generation.

An Artistic Mission by TV and SP is envisioned to improve communication and build trust between the municipality and the community. By partnering with external creative organisations, the project aims to deliver its message fresh and engagingly, potentially reducing scepticism towards the municipal office and fostering a more positive public perception.

While formal collaboration with local JAE representatives has not yet been established, the Re-Value project remains open to exploring these opportunities. Engaging with JAE could bring valuable insights and support to further the project's goals.

Písek's primary objective in participating in the Innovation Camps organised by JAE is to strengthen the bond between residents and their city. Initiatives encouraging young people to consider returning to Písek after their studies are key. This approach fosters a sense of community pride and long-term commitment to the city's development, ensuring that Písek continues to thrive and grow with the active involvement of its citizens.

2.4.9 Rijeka

Rijeka's capacity assessment has identified numerous valuable stakeholders within the city's cultural landscape. Established institutions such as the **Children's House**, **Croatian Cultural Center**, and **various civil society organisations** provide a robust foundation for collaboration. Partnering with these diverse groups will ensure that the Re-Value project benefits from various experiences and perspectives, enriching its impact and reach.

The Re-Value project prioritises youth participation. Collaboration with established institutions like the Children's House, which specialises in educational, artistic, and creative activities for children, is central to this effort. The project also recognises the potential of other youth-focused initiatives, aiming to incorporate a broader array of activities that engage and inspire young people.

An Artistic Mission by TV and SP will be most effective when integrated with Rijeka's existing artistic and cultural initiatives. By collaborating with the city's established creative infrastructure, the project can ensure that the mission resonates with the local audience and maximises its impact, creating a dynamic and engaging public presence for the Re-Value project.

Currently, there are no local JAE representatives in Rijeka or Croatia. However, the Re-Value project remains open to exploring future collaboration opportunities with JAE. This openness to new partnerships could bring additional insights and resources to the project, enhancing its overall effectiveness.

Rijeka plans to organise its participation in the Innovation Camps by collaborating with existing institutions such as the **City Library** and **the Art Cinema**, which already offer programs for children. This collaborative approach aims to create synergy between these existing initiatives and the Innovation Camps program, ensuring a successful and impactful experience for participants. By leveraging the strengths of these institutions, the project can foster a culture of innovation and creativity that benefits the entire community.

2.5 City Dialogues, 2nd round (17 April - 2 June 2023, online)

For the second round of City Dialogues, we set up dedicated sessions covering various topics such as story-building (IC1, by SP and TV), scenario-building (IC2), investments and partnerships (IC3), documenting results and impacts (WP7), and the Community of Practice (WP6), where it was part of the capacity assessment[2]. The idea behind running these sessions simultaneously was to provide a space for people to come together and discuss, serving as a foundation for the cities to craft their own narratives and reconnect with their history on the path to a climate-neutral future.

We invited representatives from the ICs and WPs to showcase how they would collaborate with the city, demonstrate interesting techniques, and engage in discussions with the cities and their support partners. Initially, we encouraged each city to send multiple staff members to participate in these parallel sessions, assuming that different individuals would handle different topics. Looking back, we realise it might have been better to organise only one session at a time rather than in parallel, allowing key city staff to join all sessions according to their preferences.

[2] D6.1: Re-Value Capacity Development and Exchange Programme, Version 1
https://re-value-cities.eu/documents/re-value-capacity-development-and-exchange-programme-version-1

During the IC1 sessions, we worked closely with the city to define the purpose of their story. We discussed whether the aim was to raise awareness, evoke a reaction, or engage specific groups of people. We also explored potential target audiences, such as youth or policymakers, and considered whether the story would be co-created with them or developed by Re-Value experts. These story-building activities are designed to uncover what residents and other local stakeholders value, what captures their attention, and how these insights can contribute to tangible benefits for climate neutrality.

Teatret Vårt (TV), Sladovna Písek (SP), and Junior Achievement Europe (JAE) showcased practical examples of their work within their respective cities. These examples served as models to be adapted and implemented in other Re-Value cities through artistic missions and innovation camps. The cities shared their own plans and insights, aiming to identify common interests and potential opportunities for collaboration.

For instance, events such as children's festivals and summer festivals were highlighted as valuable platforms to engage diverse stakeholders who may not typically attend dedicated Re-Value events or may be sceptical of them. Engaging local stakeholders will require ongoing effort, and one starting point could be to participate in and organise activities at such community events. Additionally, opportunities to connect with people where they already gather, such as local libraries, schools, and community centres, were discussed, along with informal interactions in smaller venues like dance classes and other cultural events.

The sessions had an unexpected outcome that brought new possibilities to light: as TV, SP, and JAE shared their work in each city dialogue, their stories began to intertwine across different cities. This sparked discussions on how artistic missions could be integrated with innovation camps and local cultural events to maximise their impact. Additionally, during the sessions, it was announced that TV had acquired the Norwegian rights to "A Play for the Living in a Time of Mass Extinction" by Katie Mitchell, along with permission to perform shortened versions of the play in each Re-Value city. This inspired a brainstorming session around potential future story-building sessions where TV could stage a brief theatre performance for local audiences, followed by a dialogue led by SP to reflect on the play and its relevance to daily life. Subsequently, if planning, capacity and context allow, JAE could incorporate these insights into their innovation camp with youth to encourage them to develop potential solutions for their city. Re-Value experts could be invited to participate in evaluating these solutions during the camps. All of these activities could be co-designed with the city and its support partners to ensure they have a meaningful impact on the community. These ideas will be further refined and put into action in the next phase of the project.

2.6 Next steps

During the City Dialogues, we uncovered potential connections between the Innovation Cycles and other Work Packages, which will be further explored in the project's second phase. Moreover, we recognised the significant role that story-building can play in defining the co-benefits of climate neutrality and urban quality for various stakeholders. These co-benefits are essentially the positive outcomes that both climate action and urban development can bring to communities, such as improved air quality, enhanced green spaces, or increased resilience to climate change impacts. The identification and documentation of these co-benefits are crucial for informing decision-making processes and guiding urban development strategies. By understanding and articulating these benefits, cities and project partners can better prioritise their efforts and investments to maximise positive outcomes for their communities. Examples of these benefits, along with a comprehensive summary of existing literature based on desktop research, were already

outlined in Deliverable 1.1[3] of Re-Value, centred on the NEB Impact Model for value-based urban planning and design.

In 2024, these co-benefits will be further explored during on-site Impact Model workshops held in each Re-Value city in collaboration with local stakeholders (Task 1.1), to document the co-benefits in their specific local contexts. The insights gathered from these workshops will be integrated into the cities' roadmaps for their waterfront pilots, which are the practical projects implemented in each city to demonstrate sustainable urban development practices (WP2-5 for the Lead Cities, WP6 for the Replication Cities).

IC1 will play a key role in identifying and documenting these co-benefits through cross-cutting Expert Teams (see Chapter 1). These efforts will also support WP7 in identifying the impact pathways for the project and its activities. Moreover, in the next phase, IC1 will kick start each cities' Short-Term Artistic Missions building on the outcome of the City Dialogues. Re-Value aims to use story-building as a method of working inclusively within the consortium itself, to enable partners to gain creative confidence. The details of implementation will be further explained in D1.4. Re-Value Innovation Cycles Experience-Based Report 2.

[3] https://re-value-cities.eu/documents/re-value-impact-model-initial-version

3 Innovation Cycle 2 - Scenario-Building

3.1 Scope

The goal of Innovation Cycle 2 (IC2) is to encourage dialogue between the Re-Value cities and their local partners about using data to tackle urban challenges caused by climate change. We want to give the Re-Value cities the knowledge they need to work with their local stakeholders of urban development to find the right tools for gathering, handling and applying data. With the help of IC2, the cities will use this data to create scenarios that truly represent each city's unique situation and culture as well as many stakeholders as possible. This includes exploring how we can improve data in terms of quality, access, management, and sharing among different groups, which will help inclusion of more people in the decision-making and make smarter decisions.

In IC2, we will look into how we can help each city generate better data and use it more effectively to build scenarios to facilitate their ambitions of climate neutrality and urban quality. In this manner, we can make sure the municipalities and local knowledge partners can keep getting better at generating and using data, which will help the cities grow and improve over time. IC2 aims to create scenarios to support the cities' ambitions, using data-driven strategies and, eventually, digital twins as important tools. They will help us see what could happen in the future and better understand everything going on in our cities in a more detailed way.

Moreover, these data-driven approaches will help residents, experts, and decision-makers work together to plan our cities better. We will be able to design things together before they're actually put in place. By using new technologies and involving stakeholders in the process, IC2 wants to make sure our cities are planned and designed in a way that is inclusive and actually helps the cities move closer to a climate-friendly future.

3.2 Strategy

During the first period of the Re-Value project, information was collected on the current situation for each Re-Value city and its partners related to adapting data-driven approaches to urban issues. It is important to understand the challenges, opportunities and existing data-driven approaches adapted by the city to form a pretext for building scenarios for cities in the later stages of the Re-Value project.

To kick-start this initiative, a workshop was organised by the IC2 members, ECOTEN urban comfort, VITO and Augment City during the kick-off Session in Bruges on the 2nd of February 2023. The objective of this workshop was to bring together the city officials and partners of all Re-Value cities together and provide a platform to discuss the key issues for them to adapt data-driven co-creation at the same time, gathering information during these discussion to understand the position and experiences of each Re-Value city in these issues. Following the kick-off session, more discussion and information gathering was followed through capacity building questionnaires and online interviews. Information from these discussions were gathered systematically and analysed by the IC2 team. Simultaneously, research was also conducted on cataloguing the existing available data for each city and the current initiatives for each Re-Value city and partners.

In the later stages of the IC2 initiative of Re-Value, discussions will be held to strategise the scenario-building for each Re-Value city to support them on adapting the data-driven co-creation approach based on the information gathered in the current stage. There are also discussions amongst the participating IC2 members on the development of a collaboration of urban digital tools based on the digital twin approach to support Re-Value cities on their climate action and promote sustainability.

3.3 Discussion during Kick-off Session: Challenge, Solutions and Opportunities

The data shown below were collected via an online questionnaire. During this session, we set up an online form where participants of the workshop were asked to list down the challenges, solutions and opportunities for their cities for adapting data-driven solutions. This was followed by a discussion in break-out groups to further understand the inputs made by the participants of the workshop.

There were three basic questions in the online questionnaire:

1. What challenges are the participants of the Re-Value project facing in their cities in general?
2. What data-driven solutions are the participants of the Re-Value project using in their cities?
3. Which of the following are the participants of the Re-Value project considering as opportunities in their city for using data-driven solutions?

After the kick-off session, all the results of the discussions were collected and analysed and all the issues listed by the participants were categorised based on the inputs. The results from this workshop will help us understand more precisely every challenge, solutions and opportunities and needs stakeholders are facing and how to tackle them in the best manner.

Firstly, a general observation will be made concerning the three main categories: challenges, data driven approach and opportunities. Then, the focus will be on cities and their responses.

3.3.1 Challenges

Climate change is the main challenge shared between Re-Value participants, but traffic and pollution are not far away. Cities should work on the transportation sector in order to reduce climate change effects. Answers concerning challenges are relatively homogeneous. During the kickoff workshop discussions, we had an opportunity to discuss these challenges and we found that many of the challenges vary greatly from city to city. Many of these challenges are varying due to policies, administration, demography and geography of the city itself so therefore, the probability of having a silver bullet to solve an issue like climate change or traffic for all the cities using any single data-driven approach is unlikely. But there is an opportunity to learn more about the challenges for the specific case for each of the Re-Value cities.

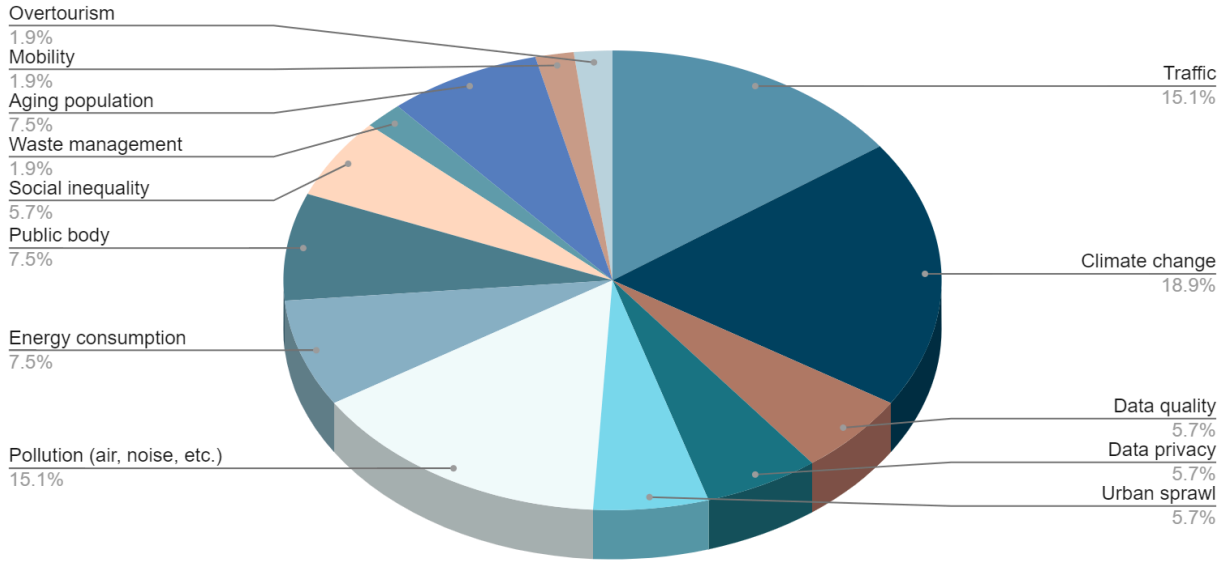

Figure 3.1: Results from the participants of the kick-off workshop for the question "What challenges are the participants of the Re-Value project facing in their cities in general?"

3.3.2 Data driven approaches

For the question of data driven approach (Figure 3.2), the category "Data visualisation" covers almost half of the response. City actors want to have access to analysis and data concerning their cities. Cities have to work on this access. It is followed by "digital twin" which means that cities have to work on tools to create a pre-visualisation of projects to realise. Answers concerning challenges are quite homogeneous. From the discussion about data-driven solutions at the Kickoff workshop, it was clear that the level of existing data driven solutions for each city also varies greatly.

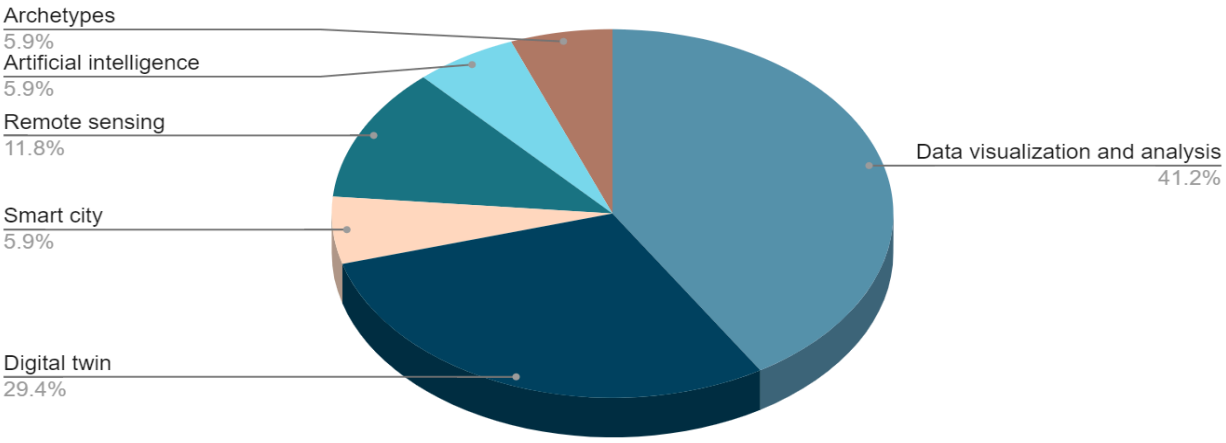

Figure 3.2: Results from the participants of the kick-off workshop for the question "What data-driven approaches are the participants of the Re-Value project facing in their cities?"

3.3.3 Opportunities

The “opportunities” listed in the below diagram are quite homogeneous. The main category is “Sustainable urban planning”. Cities should work on using sustainable urban planning for the benefit of climate change adaptation.

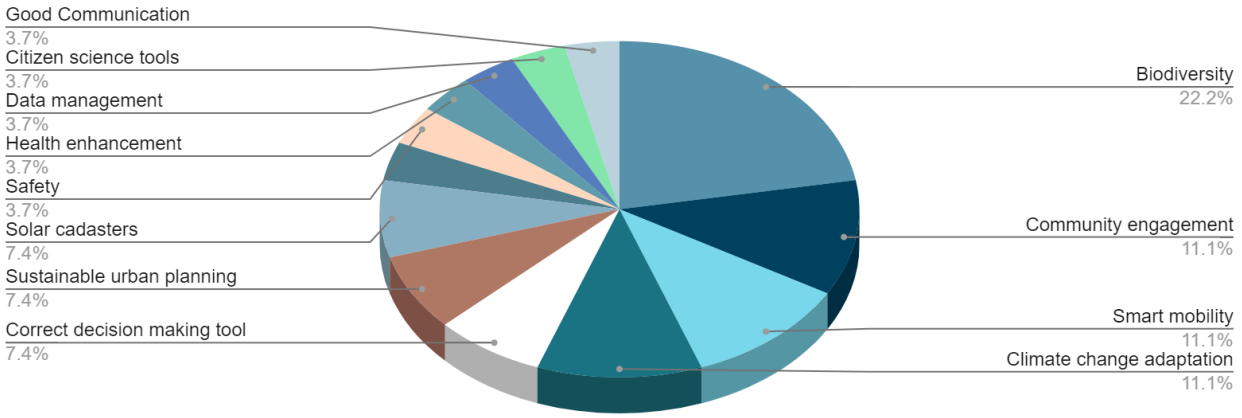

Figure 3.3: Results from the participants of the kick-off workshop for the question “Which of the following are the participants of the Re-Value project considering as opportunities in their city for using data-driven solutions?

3.4 Capacity-Building Questionnaire

Following the kick-off session in Bruges, all the information collected from the responses of the participants and the follow-up discussions were collected and analysed. However, a deeper understanding of the challenges, solutions and opportunities for each was required. Therefore, we coordinated with WP6 Community of Practice to conduct a survey which was included in the WP6 survey for each Re-Value city. We took the issues which were recorded from the kick-off meeting and created a new survey in the form of an online quantitative questionnaire. We decided that in order to understand the priorities of the cities regarding challenges, solutions and opportunities related to data-driven co-creation, a quantitative questionnaire is required where Re-Value cities can provide ratings for the top issues discussed during the kick-off meeting. This was the next step for IC2 and we prepared a questionnaire to be given to each Re-Value city to answer. There were 3 simple questions for this questionnaire where the revalue cities were asked to rate the issues which were obtained from the results of the kick-off workshop which respect its relevance for each city. These questions were designed for this questionnaire and given to the capacity building team to distribute to all the Re-Value cities.

The three questions are listed below followed by a graph which shows the issues which the cities were supposed to rate from 1 to 5 at the horizontal axis and the vertical axis shows the total sum of ratings from all Re-Value cities for the corresponding issue. Below are the questions which were asked in the questionnaire that was sent to each city as part of the WP6 survey.

- Question 1: What urban issues are challenging for your city to tackle with data-driven solutions (e.g. because of lack of data or capacity)? Please rate the level of difficulty from 1 to 5 (1 being the least challenging, 5 being the most challenging).

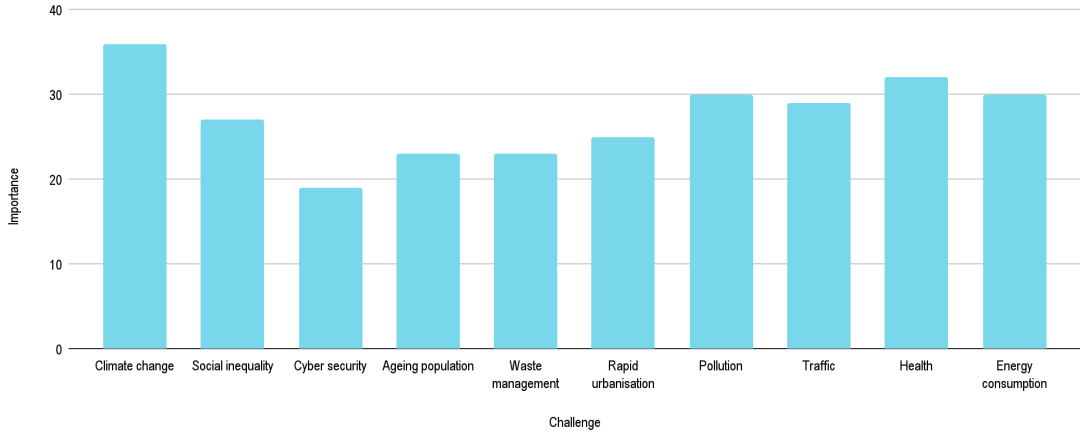

Figure 3.4: Importance of challenges considered by surveyed cities

Climate change remains on top of the challenges that all the Re-Value cities are facing. This is followed by health, pollution and energy consumption. Issues such social inequality, ageing population, waste management and rapid urbanisation are of medium importance. Perhaps one reason for that was that these are issues where cities have been working on for quite some time on a regular basis. One important issue to observe was cyber-security which is of relatively low importance as compared to other challenges. Perhaps it is important to note that as cities increasingly use data-driven infrastructures, there must be a parallel initiative to protect these infrastructure.

- If your city has experience with developing and applying the data-driven technologies listed below, please rate them from 1 to 5 based on how useful you find them (1 being the least useful, 5 being the most useful). If these technologies are not being used by your cities, please do not rate them.

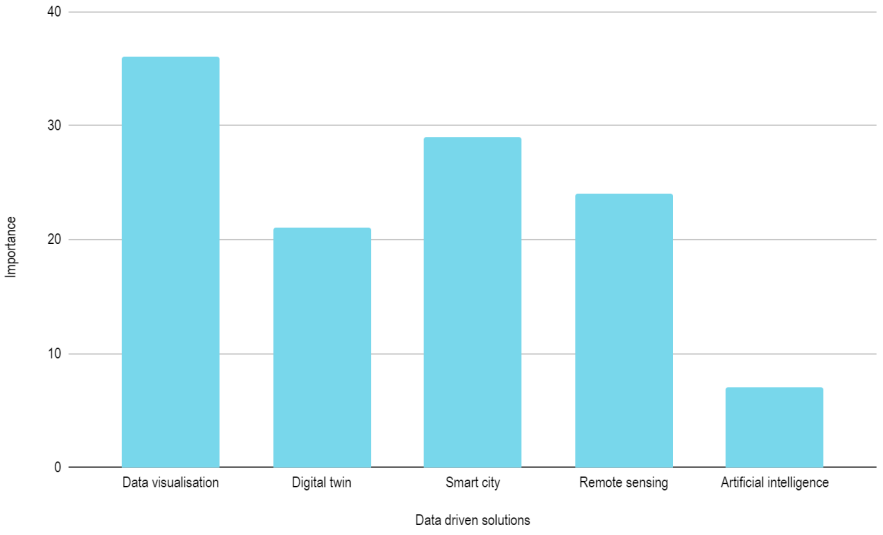

Figure 3.5: Importance of data-driven solutions considered by surveyed cities

Data visualisation is the most interesting data driven solution for most of the cities followed by smart cities, remote sensing and digital twins. Some of the revalue cities have quite a high level of development in terms of these solutions and others have extremely low levels of development. Therefore, there is an opportunity for Re-value cities to learn and replicate one another. This may not necessarily be from lead re-value cities (LC) to replica re-value cities (RC). Artificial intelligence is rated as the lowest importance in this survey. One reason for this was that for many cities, the full potential of AI has not been reviewed. A huge amount of data is required to be collected in a given city for the development of any AI based solution.

- Which of the following issues represent an opportunity for data-driven solutions in your city? Please rate them based on how opportune you think they are for your city (1 being the least opportune, 5 being the most opportune).

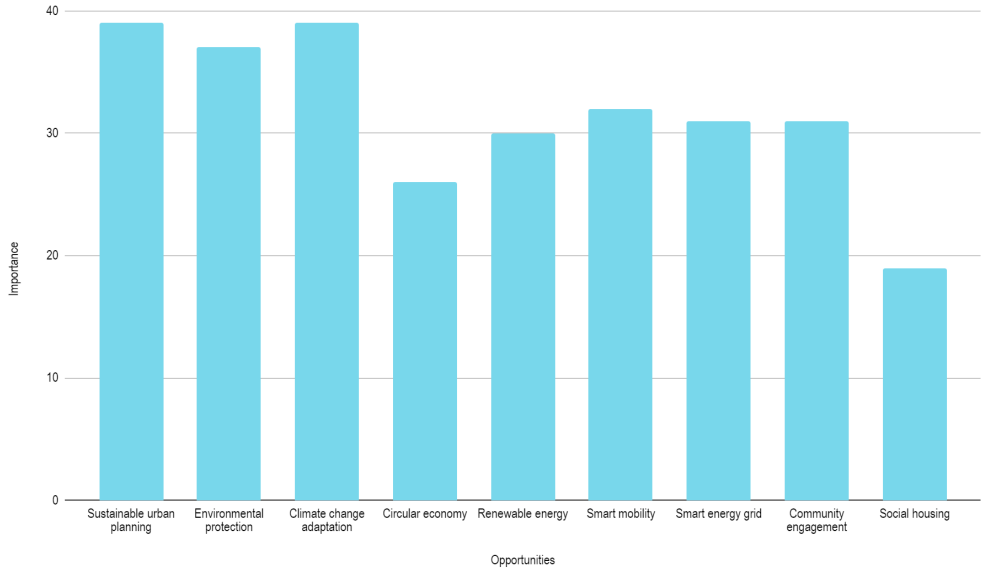

Figure 3.6: Importance of opportunities considered by surveyed cities

Sustainable urban planning, environmental protection and climate change adaptation stand out as the most important issues for all Re-Value cities where they see a high opportunity to implement data-driven solutions. There is also a significant interest in opportunities for such solutions for smart mobility, energy, community engagement etc. We will use this information to support the data-driven co-creation and scenario building activities with the Re-Value cities

3.5 Interviews

After receiving the responses to the questions above from each Re-Value city, the responders from the city administrations were interviewed to dive deeper into their responses. The following subsections summarise these discussions and the graphs above show the responses given by the Re-Value cities.

3.5.1 Ålesund

Challenges: Ålesund is currently working on implementing data-driven solutions, particularly in the area of mobility. While these solutions are still a work in progress and require significant resources, there is a clear

interest in expanding these efforts in the future. Ålesund faces a range of challenges, including rising sea levels, social inequality, pollution, traffic, health concerns, and energy consumption, and the city aims to address these issues through data-driven approaches. However, one of the primary challenges is the lack of integration and communication between different municipal departments. Another challenge lies in stakeholder hesitance about the reliability of data, particularly that generated by AI or machine learning. Effective communication and stakeholder involvement in data collection, processing, and analysis are crucial to overcoming these obstacles.

Data-driven solutions: Ålesund has experience in using data-driven solutions to tackle urban challenges. The city has utilised data from Copernicus and other sources to monitor and raise awareness of rising sea levels, which has led to measures like the elevation of harbour fronts and buildings. Another example of Ålesund's data-driven approach is the use of AI to support the natural environment, including animal care and social infrastructure. The city is also using satellite and mobile communications technologies to enhance environmental management. Through collaborations with universities, civil engineers, and consultants, Ålesund is leveraging GIS tools to analyse data for various urban development projects. As part of the Re-Value Cities project, the city aims to further integrate data into its digital twin, connecting AI and sensor-based features to provide a more comprehensive tool for urban management. The objective is to develop and integrate data in GIS format and utilise it for traffic, movement analysis, and harbour management, advancing the city's capabilities in data-driven creation and analysis.

Opportunities: The city sees potential in visualising a wide range of data—such as sunshine, wind, light, sea levels, surface water, and traffic—and using it to create scenarios that predict possible outcomes and identify opportunities for improvement. This visualisation process is valuable for urban planning, making data more accessible to city authorities, residents, and other stakeholders. A key challenge is the organisational separation within the city's departments, which can hinder the integration of different urban plans and lead to individual assessments rather than a unified approach. Ålesund recognizes the importance of fostering collaboration between departments and transdisciplinary work to enable a more holistic assessment process. Communication with residents and politicians is also essential for introducing data-driven solutions, as these approaches are still relatively new and require broader acceptance and feedback from the community.

3.5.2 Bruges

Challenges: In the realm of data-driven solutions to combat climate change, the city of Bruges is actively seeking new cooperation opportunities. It is developing digital twins to identify the city's most pressing climate threats, drawing on both open data and its own datasets. The primary challenges Bruges faces include flood monitoring, heat mapping, and earthquake simulations. A key hurdle for the effective implementation of these data-driven solutions is ensuring connectivity between data from different city departments, an issue that can be addressed through further digitalization.

Data-driven solutions: Bruges is already making strides in energy efficiency with an ongoing project that uses a thermocar to scan streets during winter, identifying heat loss in buildings and areas where insulation is needed. AI is being employed to automate the analysis of this data, which can then be seamlessly integrated into the city's digital twin model. The resulting data and insights are freely available to citizens who wish to use them for personal purposes. Additionally, Bruges has developed digital twin models for air quality and traffic, enabling the city to predict changes in circulation and air quality in areas that will be

closed to cars. Sensors throughout the city help capture and measure key data points for these models. AI is also playing a role in traffic management, where it processes images from buses and cameras to recognize traffic signs and crossings. While the city is gathering a wealth of data from simulations, it is still working on improving its "bottom-up" approach, striving to increase collaboration and integration of data from different sources. Although Bruges is still in the early stages of exploring AI's full potential, there is considerable interest in leveraging it for future applications. The city is also eager to digitise public services and processes, although the degree of digitization varies by sector.

Opportunities: When promoting and implementing data-driven solutions, Bruges is encountering challenges, particularly around data ownership and interdepartmental collaboration. However, the city is taking proactive steps to address these issues. A dedicated data team has been established and is already launching workshops aimed at enhancing data management practices. There is great potential in applying a unified data framework across all departments, which would streamline data collection and standardise its use. This approach has seen success in the digital twin initiative and is poised for broader application. With a growing focus on fostering collaboration within city organisations, Bruges is working towards breaking down silos and enhancing communication with a data-driven approach. There is significant opportunity in cross-analyzing datasets, such as correlating air quality with traffic data, to better understand and reduce emissions in the city, showing the potential of data-driven solutions to create tangible improvements for urban living.

3.5.3 Burgas

Challenges: Burgas is actively addressing challenges such as climate impact, noise pollution, traffic management, air quality, and water management through data-driven approaches, particularly via the Smart Burgas[4] program. This initiative aims to advance the digitalization of public services across the city. Currently, there is no dedicated climate model or other frameworks in place to guide climate adaptation policies, but the municipality has plans to develop such models. This will be supported by initiatives like the Horizon project, including Regions4Climate[5], which is working on creating a climate atlas for the city.

Data-driven solutions: The Smart Burgas project integrates all data and information related to the city's challenges into a unified platform. Recently, the system was enhanced by incorporating green infrastructure data, solar potential, and urban heat island effects. A dedicated municipal enterprise manages this information database, with some data uploaded in real-time and others collected at regular intervals. While much of the data is accessible to the public, certain information is reserved for administrative use, including surveillance data. Despite the potential of the platform, citizen participation through digital tools for decision-making remains relatively limited. Additionally, the data is not stored permanently and is deleted after some time. The platform offers various practical applications, such as real-time traffic data for traffic management, where traffic lights are controlled to reduce congestion. Solar potential data is used to promote energy-efficient building projects, while waste management and urban development measures are also visualised on the platform. Innovation Systems actively contribute data to the platform, though residents are not heavily involved in data collection, aside from occasional online surveys for specific projects. Smart Burgas also features a mobile application that provides information on public transport and parking zones, allowing users to pay for parking spaces, with plans to add more municipal services to the

[4] https://smartburgas.eu/en

app. Additionally, a digital twin is employed to monitor the energy efficiency and climate adaptation of specific administrative buildings.

Opportunities: Burgas has shown a growing interest in exploring data-driven solutions related to AI as part of its commitment to innovation and technological advancement. AI is an emerging and exciting focus for the city administration. Efforts have been made to raise public awareness about AI developments in the city by organising public conferences. The current mayor has shown a strong interest in advancing AI to benefit both the city and its citizens. Additionally, AI education has been integrated into the curriculum of municipal and public schools, ensuring that future generations are equipped with the knowledge and skills to contribute to the city's AI-driven growth. Through these efforts, Burgas is positioning itself as a forward-thinking city with respect to data-driven solutions.

3.5.4 Rimini

Challenges: Rimini's adoption of a data-driven approach is still in its early stages, but two promising opportunities could be further developed: the SIT (Territory Information System)[5] and the Road Grid Network, both of which the city is currently working on. The SIT is a technical tool within the municipality that functions as a territorial information system to analyse data. Additionally, another system is being considered for analysing various types of spatial data (socio-economic, statistical, cadastral) based on geographic references. This system would provide essential insights for defining sectors related to territorial planning and project activities. The Road Grid Network focuses on studying the city's road network and analysing the movement of people throughout Rimini.

Data-driven solutions: To fully implement data-driven technologies, Rimini must advance the use of tools like the SIT and the Road Grid Network. Currently, Rimini doesn't have the infrastructure to produce and monitor data using sophisticated data-driven tools like artificial intelligence. However, the creation of a digital twin is already underway and holds great potential for enhancement through the Re-Value project, offering a path towards more integrated data-driven urban management.

Opportunities: Rimini possesses a wealth of data that could be further analysed, interpreted, and leveraged for planning and project activities. Environmental and climate considerations are priorities for the city, alongside mobility, building quality, and the general outdoor environment. There is also potential to develop a 3D model to enhance these efforts. During the Re-Value project, further discussions will be held with Rimini to explore opportunities for data-driven co-creation and innovation.

3.5.5 Cascais

Challenges: Cascais is experiencing several challenges related to climate change, including frequent flooding. This issue cannot be effectively addressed by existing weather prediction tools, as they do not track data quickly enough. As a result, implementing an early warning system is seen as a promising data-driven solution for the city. In addition to flooding, Cascais is also facing environmental challenges such as soil erosion, which has a significant impact on the city's road infrastructure.

Data-driven solutions: Cascais is actively collaborating with universities to gather and analyse data on weather conditions, both on land and at sea, using cutting-edge sensors. Remote sensing technology is

[5] https://comuneriminiit.sharepoint.com/sites/SITinforma

employed for a variety of purposes, such as mapping CO2 emissions and managing renewable energy. Cascais has also launched several innovative programs, including the Fix Cascais[6] initiative and the installation of smart garbage bins[5], to further enhance its data-driven approach to urban management.

Opportunities: Cascais has significant opportunities to expand its data-driven efforts, particularly through the use of climate and microclimate simulations. These tools can support the development of blue-green infrastructure, helping the city not only adapt to climate change but also reduce CO2 emissions. With these advancements, Cascais is well-positioned to continue advancing its sustainability goals and enhancing the quality of life for its residents.

3.5.6 Constanța

Challenges: Constanța faces several challenges in integrating data-driven solutions into its daily operations. At the outset of its digitization process, the city had limited experience with data-driven methodologies. While efforts to build a GIS system—providing valuable data such as transport models with potential for expansion—are underway, progress has been relatively gradual. A key initial achievement was the digitization of land use authorizations, but the creation and integration of GIS data has been sluggish. Additionally, Constanța faces challenges related to cybersecurity, particularly with the installation of surveillance cameras in specific areas such as schools and museums. Robust cybersecurity measures are essential to protect this digital infrastructure and ensure compliance with Romanian legislation, which mandates cybersecurity equipment and personnel for authorities purchasing substantial IT equipment.

Data-driven solutions: Constanța possesses limited tools for data visualization and lacks a comprehensive platform to integrate various data sources. Participation in a Horizon Europe project has produced some outputs that are accessible to the public, though these efforts remain fragmented. A smaller initiative involves equipping buses with sensors to collect management-related data, which could potentially be expanded for broader uses. The city aims to develop a platform that integrates traffic, road, and population data to support more informed municipal decision-making. However, the absence of online, real-time, and automatically gathered data presents a significant challenge. A citywide management and traffic system with real-time monitoring capabilities would provide substantial benefits. While a local consortium of students, municipal officials, and companies has made progress in developing a traffic platform, Constanța is still in the early stages of creating comprehensive data-driven solutions.

Opportunities: Constanța has the potential to significantly improve the quality of life for its residents through the use of data-driven approaches in city decision-making. Currently, these efforts are sporadic and project-specific, necessitating a more holistic approach. Public-private partnerships (PPPs) are mainly limited to pilot or European projects, as Romanian regulations do not readily facilitate such schemes. There is also a need to ensure that these partnerships do not create undue advantages for private companies. Despite these challenges, embracing PPPs could offer substantial benefits to the city. The Re-Value approach provides an opportunity for Constanța to establish a structured pathway for leveraging data-driven solutions and partnerships, promoting comprehensive urban development and enhancing citizen engagement.

[6] https://www.cascais.pt/fixcascais
[5] https://data.cascais.pt/en/ambiente-energia/smart-waste

3.5.7 İzmir

The city of İzmir has a strong foundation in data-driven solutions. Public participation is a key component of urban planning and development through a process known as Citizen Design Science[5]. This co-design initiative encourages citizens to share their insights with designers and planners. Regular meetings are organised in different areas, allowing residents to collaborate on creating design layouts that envision the future of their neighbourhoods. These designs are implemented after public consultations.

Challenges: İzmir faces numerous challenges that data-driven solutions can help tackle, particularly in relation to climate change. Key issues include water management, urban heat islands, and a shortage of natural shade elements. Traffic congestion in certain areas is also a major concern. To address this, residents have been consulted through digital surveys to gauge their preferences on restricting car access to specific streets during certain hours, with many expressing strong support for the initiative. Additionally, İzmir utilises open data from the Copernicus program to monitor energy consumption via a city dashboard.

Data-Driven Solutions: İzmir has made considerable strides in adopting data-driven approaches to enhance urban resilience. The use of GIS tools and data visualisation plays a pivotal role in various projects, including the "sponge city" initiative[6]. The city's commitment to an open data strategy[7] has enabled ongoing studies that leverage these tools, highlighting its proactive approach to integrating technology into urban development.

İzmir aims to create a Digital Twin of its Alsancak waterfront pilot area, envisioning a more connected and sustainable urban environment. To achieve this ambitious goal, data from various departments of the İzmir Metropolitan Municipality, Copernicus (the EU Earth observation program), and Landsat Imagery were meticulously integrated into a GIS-based dataset specific to the Re-Value project. This dataset forms the backbone of the project, providing a comprehensive digital representation of the Alsancak region.

Opportunities: The Re-Value project provides İzmir with valuable opportunities to advance its data-driven and co-creation initiatives. Further discussions and workshops will be organised to explore and expand these opportunities, promoting enhanced collaboration between the municipality, citizens, and other key stakeholders.

3.5.8 Písek

Challenges: In terms of climate change, the city of Písek is facing significant challenges related to flooding and heat vulnerability. During the summer, heat becomes a major issue, particularly in the city center and along the streets. To mitigate this risk, the city has taken proactive steps, such as planting trees in affected areas and finding ways to direct street water into these trees and other greenery. In 2023 and 2024 there were installed two water misting machines in the city center, which became very popular for adults and mainly children. Písek's drier climate, compared to its surrounding mountainous regions, also impacts its urban microclimates. Although a pilot project has been launched to monitor air quality and the environment, there is no permanent monitoring station, aside from three meteorological stations. Regarding pollution, the city has conducted a study on pollution in residential areas, though the results are currently only available in PDF format. Traffic-related pollution is monitored by sensors installed at main roads and crossroads. To combat carbon emissions and improve mobility, Písek has switched to electric buses, and a road management and traffic monitoring portal is already in place. In terms of energy consumption, the situation has improved, as energy distributors have started providing aggregated data to

municipalities. However, communication with the central heating facility remains a challenge. Although they can provide necessary data, delays of up to several weeks are common, though the situation is gradually improving. While a significant amount of data has been collected and made available in PDF format in the city portal[7], applying this information and determining how it will be used remain challenging.

Data-driven solutions: Písek collects and uploads a wide array of data into PDFs, which are accessible through a portal. In terms of energy consumption in buildings, the data are collected semi-manually because of Energy Management ISO 50001 and are available on-demand in machine-readable format from the Energy Broker software. There is potential to better integrate this data into more visualised solutions to improve decision-making for both residents and politicians. Efforts are underway to aggregate the data into more understandable indicators while ensuring data integrity. The city also runs a portal that live-streams political meetings, increasing transparency and public awareness. However, more advanced data-driven solutions, such as AI and remote sensing, have yet to be fully integrated, limiting their effectiveness.

Opportunities: Písek's primary opportunity lies in better utilising the wealth of information already available for city planning and development. Although the city has numerous tools at its disposal, a knowledge gap exists in their usage, and they are not frequently employed. To address this, the city needs user-friendly, targeted solutions for different groups. One ambitious goal is the development of an online or mobile-accessible digital technical map to facilitate street planning. This could potentially include augmented reality to visualise future tree planting and its environmental impact, enhancing both urban planning and environmental sustainability. Písek deployed some pilot data-gathering projects[8], which should be evaluated and transformed into permanent, full-scale solutions or replaced with another solution based on the experience.

3.5.9 Rijeka

Challenges: Rijeka's most pressing challenge is achieving sustainable urban planning, with digital twin technology identified as a key tool to accelerate progress in this area. Utilising this technology can directly benefit local companies incubated in the city by providing valuable insights and support. Beyond urban planning, Rijeka faces significant challenges in the areas of renewable energy and the circular economy, where data-driven solutions can have a substantial impact. The city's active participation in Horizon Europe projects focused on advancing the circular economy further underscores its commitment to sustainable practices.

Data-driven solutions: Rijeka has already developed a digital twin, a sophisticated tool that holds great potential for enhancement through the Re-Value project. This project aims to improve the integration of the digital twin with existing outputs, particularly in key areas such as sustainable mobility, circularity, and energy consumption. Strengthening this integration will offer a more comprehensive view of the city's operations, facilitating more efficient and effective urban management.

Opportunities: Rijeka envisions the development of an up-to-date 3D model of its buildings, continuously updated with real-time data to monitor physical changes over time. This is especially critical for historic cities like Rijeka, where preserving the integrity of building facades, plasterwork, windows, and other

[7] https://smart.pisek.eu/
[8] https://iot.tcpro.cz/

elements is of great importance. Real-time monitoring would enable city officials and stakeholders to respond swiftly to any changes, ensuring that preservation efforts remain effective. Moreover, this dynamic model could serve as a vital tool for urban planning and management, enhancing the city's resilience and sustainability.

3.6 Summary & Conclusions

As part of the Re-Value project, a questionnaire for participating cities was developed prior to the online interviews, in order to learn more about the ideas and expectations for the project. The questionnaire consisted of three main questions regarding challenges, data-driven solutions and opportunities in the field of environmental aspects in urban areas, social quality of life and technological city development.

Amongst the most frequently mentioned challenges are traffic, climate change and energy consumption which contribute to discomfort in urban city areas. A lot of cities are already taking measurements on how to battle these challenges, in most cases it is controlling the amount of cars in the city centres and installing systems and sensors for air quality and emissions monitoring; frequent monitoring of building insulation for heat loss; creating green areas and involving citizens for more ideas and proposals.

The means on how to improve discomfort in the cities are often based on data-driven solutions. In most cases, the municipalities of individual cities see these solutions as very important and very useful for the future city development. Data visualisation which is followed by digital twins are the most commonly mentioned responses in the questionnaire. The digitalization and incorporating the outputs with AI technologies may for some cities currently pose a rather difficult task, but overall, it presents a large number of possibilities on how to process complex data and provide useful and simple information to the inhabitants and other stakeholders.

In the context of opportunities, the participating cities are mostly perceiving sustainable urban planning, environmental protection and data management as the main area of interest. By combining the data-driven solutions and integrating them into the system, the cities are more likely to become more sustainable and inclusive in city planning and management, thus becoming more beneficial in adapting to the climate changes.

The following are practical examples of cities implementing data-driven solutions to tackle urban challenges:

- Cities like Burgas and Písek have created smart city platforms to manage administration, energy, traffic and environment and climate action.
- Cities like İzmir have implemented a strong foundation for citizen participation or citizen science for urban development through digital platforms which allow citizens to participate in decision making.
- Cities like Ålesund and Bruges are already using AI and sensoring to manage urban challenges such as energy, pollution and mobility.
- Bruges uses “thermo cars” to scan streets during winters to reveal heat losses for buildings where isolation is required and then the collected data is to be processed by AI for energy management.
- Cities like Bruges and Ålesund are also using digital twins to manage specific infrastructure such as harbours and ports.

However, there are some cities such as Rimini and Constanța where there is a lot of opportunity to implement data-driven co-creation as this is a relatively new and untapped subject for them. These cities can benefit from the good practices listed above as well as the knowledge exchange with the Community of Practice. Some of the most common challenges for cities for the implementation of data-driven approaches include data ownership, data sharing and communication. Apart from that, a need for internal coordination with city municipalities has also been identified as a challenge with regards to the development and application of data-driven solutions. Moreover, reliability of data produced by artificial intelligence for the urban development process can also pose a challenge to this.

The objective of the Innovation Cycle 2 is to collect and transfer existing experience to cities who need it while promoting discussion to create new methodology for cities to adapt more data-driven solutions for their urban issues. It is also important to support all cities to further develop their data co-creation plans and overcome the existing challenges for their adaptation for urban development process. It should also be noted that in order to fully understand the issues with data-driven co-creation, each city should be taken on a case by case basis. And further follow up with cities with regards to capacity building is also needed to be addressed.

3.6 Next Steps

Based on the insights gained from the capacity building survey and interviews, IC2 will explore opportunities to support each city in data-driven creation by organising a series of workshops. These workshops will help cities engage with existing technical solutions and leverage the expertise provided by ECOTEN Urban Comfort, Augment City, and VITO. Cities will be introduced to various case studies showcasing the technical applications and expertise of these institutions, enabling and inspiring them to begin adapting and developing their own data-driven approaches to urban sustainability.

Simultaneously, ECOTEN Urban Comfort, Augment City, and VITO will collaborate with each other to set a definition and guidelines for data-driven co-creation scenarios and create a roadmap to help Revalue Cities integrate data-driven co-creation and scenario building into their roadmaps. This process may involve workshops, bilateral meetings, data-related exercises or any other activities which will be designed to support cities to cocreate solutions with data-driven approach and build scenarios where cities can utilise these approaches and solutions for urban sustainability and climate action.

The outcomes of above efforts by IC2 in Re-Value Cities along with each city's experience with scenario building and data-driven co-creation, will be documented in a guideline document for cities. This document will include best practices and key recommendations for successful scenario building and data-driven co-creation, ensuring cities are well-equipped to apply these approaches effectively.

4 Innovation Cycle 3 - Investment and Partnership building

4.1 Scope

From January to June 2023, the Global Infrastructure Basel Foundation, Switzerland (GIB), led the first phase of Innovation Cycle 3 (IC3) "Investment and Partnership building sessions", collecting initial data from the nine Re-Value cities regarding their investment and partnership strategies, as well as their current limitations and opportunities. The dialogues are an ongoing process and aim to support the cities in identifying their capacity needs, defining their pilot projects, and exploring suitable partnership and financing strategies and mechanisms. Each strategy must be adapted to the local context, needs and level of capacity for the cities of Re-Value.

This Chapter takes an initial look at some of the barriers, such as insufficient level of data and capacity regarding financing sustainable infrastructure, as well as some of the opportunities for partnerships and financing mechanisms that can lay the ground for future sustainable urban solutions.

Innovation Cycle 3 is about helping the Re-Value cities to use the narratives and data-driven scenarios to create partnerships and financing strategies that support their waterfront pilots. Strengthening connections among authorities and engaging financial stakeholders and communities will help cities to collaborate and to identify their needs and capabilities. This effort will be supported by identifying partnerships that can support the cities' pilot project by sharing knowledge, bridging political silos, raising awareness and understanding amongst stakeholders, as well as assessing and building capacities for a better understanding of the funding and financing environment and opportunities. The objective is to create a local working group with key sectoral representatives for each city. As part of Re-Value and IC3, an expert group will be created to support each individual city and different relevant stakeholder groups with dedicated guidance and training according to their respective level of competency and capacity.

4.2 Kick-off Meeting

The Re-Value kick-off meeting in Bruges was a good opportunity for IC3 to make partners more familiar with the Innovation Cycle and set the frame for more in-depth future discussions. GIB organised break-out sessions where cities could exchange and collect some initial thoughts regarding their experiences with innovative partnerships and financing mechanisms. The group discussions provided insights on some of the success stories and challenges that cities shared from their experience in financing local infrastructure in the past. During the meeting, it was further agreed that GIB would gather the cities' expectations for this Innovation Cycle during an upcoming survey and city dialogues.

Figure 4.1: Introduction into the IC session with examples and case studies

4.3 Methodology (Phase 1)

In the first project phase (January to June 2023), we engaged the nine Re-Value cities – including both Leading and Replication Cities – in a series of data-collection efforts aiming to understand the local environment for infrastructure financing, the options available to the cities and current obstacles the cities face in order to identify needs and opportunities for financing of their pilots. The activities described below provide an outline of the process of gathering initial data from the cities during Innovation Cycle 3 "Investment and Partnership Building" (IC3).

4.3.1 Survey questions

As indicated in section 4.2 a survey was conducted with the nine cities to understand how infrastructure gets delivered locally and what the main barriers are to financing more sustainable infrastructure.

GIB included the following five financial questions to the survey:

- How is infrastructure typically financed in your city?
- Has your city successfully attracted climate finance and/or other types of innovative financing (e.g., climate finance, green bonds, blended finance etc.)? If yes, what kind and in what context?
- Has your city successfully attracted private capital for project development (e.g., concessions, PPPs, etc.)? If yes, what kind and in what context?
- What are the decision-making processes in your city for approving infrastructure financing? (e.g., departments involved, which permits are needed, etc.)

- Which incentives (if any) does your city provide for attracting private capital (e.g., tax breaks, streamlined permitting, etc.?

4.3.2 Dialogues and discussions with city representatives and financial experts

Based on the city surveys, we organised online dialogues as semi-structured interviews with Re-Value representatives from the cities and asked them to invite their respective financial experts. The IC3 sessions formed part of the City Dialogues organised by NTNU with parallel sessions for the Innovation Cycles. In the investment- and partnership-building sessions, GIB discussed with the cities and their partners to explore what is required to develop bankable projects that support the ambitions of their Waterfront Pilots and long-term territorial transformation plans.

During the sessions, GIB initiated discussions related to:

- Urban development and climate strategy and budget
- Current funding and financing options and gaps
- Stakeholder mapping
- Legislation and regulatory framework

The survey and rounds of dialogues took place as recorded in Annex 1.

4.4 Findings

In summary, when it comes to financing their waterfront pilots the Re-Value cities face realities that are not uncommon: Infrastructure projects are typically funded through municipal budgets, which in many cases do not suffice to meet their urban development objectives. There is very little track record in mobilising private capital through Public-Private Partnerships or in using innovative finance to support projects. There is a fair understanding of available funding (grants) at the EU-level. Public investments in infrastructure typically require the participation of many departments including those at national level. This presents coordination challenges as well as capacity concerns to discern and prioritise those key projects to pursue.

As mentioned in 4.3, there is a need to invite city stakeholders with the knowledge on financial and policy structures and procedures regarding infrastructure and climate. Unfortunately, in the majority of dialogue sessions these stakeholders were not available, which had an impact on the level of detail of financial and strategic data that could be solicited at this stage.

In addition to the need for sufficient financial and strategic data relevant to each city and their waterfront pilots, historical information on infrastructure investment (sources and structure) alongside infrastructure masterplans, including climate neutrality plans where available, should inform the ongoing strategic discussions on infrastructure investments. Information on past transactions and their governance structure can also reveal potential partners and stakeholders who can support the Re-Value ambition.

Going forward, IC3 will work together with the Re-Value city partners to identify and activate relevant stakeholders to engage local expertise. This will be key to navigating the various parties involved in project development and investment decision-making as well as to successfully bridging current silos and information gaps. In the following, a summary of collected data from the Re-Value cities is presented. The

tables illustrate project aims, opportunities and gaps, as well as information available regarding sources of funds for each city (status June 2023).

4.4.1 Ålesund, Norway

Title	Outcomes
Project description	The city of Ålesund (pop.67000) aims to become climate-neutral by 2050, based on a comprehensive urban transformation process with circular economy and cohesion at the core. In 2019, Ålesund established the United FutureLab Norway, which forms part of the global United for Smart Sustainable Cities implementation programme. The FutureLab includes over 80 partnerships with private and public sector as well as academia and has generated over 40 collaborative projects. Ålesund has created a Special-Purpose Vehicle "Sørsida Utvikling AS" (SUAS), a municipal company, to coordinate the development of the Sørsida waterfront district. The municipality and SUAS will use Re-Value to co-create and co-implement the transformation of the district using data-driven approaches (AC, NTNU) and story-building (TV) together with local art and cultural organisations, citizen and volunteer organisations, and school children (JAE).
Financing objective for the waterfront pilot	Identify investment and partnership opportunities for the full-scale development of the Waterfront project area (reducing emissions), blended with existing local private finance and public funding and Klimasats, a Norwegian grant scheme for municipalities and counties that want to contribute to low-emission society.
Opportunities	o Solid experience in PPP to share with the waterfront pilot project partners and other cities o The Municipality could demand certain investments through plans o In Ålesund, SUAS will take an active role to align the interests of the different stakeholders in the Waterfront Pilot and will cooperate with GIB to identify investment and partnership opportunities for the full-scale development of the area, blended with already existing local private finance and public funding. One such example is Klimasats. Through its engagement as a real estate company, SUAS will be a role model for setting up public-private-people partnerships towards climate-neutral Waterfront Pilots, balancing commercial interests and urban quality across a broad range of stakeholders.
Gaps	The city needs to assess the suitability of PPPs to deliver the Waterfront project. However, this requires as a first step clear project definition and secondly the identification of project revenues and parameters (such as risk and return, including co-benefits) to discern clear opportunities to attract the private sector.
Available sources of funds	Mostly private funding. The municipality funds infrastructure projects that fall under its responsibility. Sometimes in complex partnerships with country and private sector or other public/state institutions.

4.4.2 Rimini, Italy

Title	Outcomes
Project description	Rimini (pop.149000) will cooperate with UNIBO to embed its climate-neutrality plans across municipal units and policies and test their implementation in seafront Parco del Mare as well as riverfront Parco Marecchia. Parco del Mare is a car-free zone with nature-based solutions and biodiversity in an "urban forest", harbouring a wide array of animal and plant species, and a sustainable urban drainage system. It will be fine-tuned to better support Rimini's ambition of climate neutrality in combination with sustainable mobility, biodiversity, urban comfort and air quality accessible to all. Parco Marecchia is the largest urban park area in Rimini, located where the Marecchia river flows into the port - canal. In Re-Value, Rimini will regenerate its surrounding local ecosystems with nature-based solutions to improve sustainable urban drainage systems and make it a catalyst for climate-neutrality in the middle of the city.
Financing objective for the waterfront pilot	To identify and develop public and private partnership for the full-scale development of Parco del Mare area of Rimini, Italy.
Opportunities	o Experienced in attracting EU funds for climate projects (past examples of EU funded initiatives: PAESC, European Funds for Parco Del Mare project, POR-FESR asse 4 (energy efficiency in public buildings). o Developed initiatives for attracting private investments: district heating, energy efficiency, voluntary green building measures
Gaps	o No PPP vehicles developed yet o No experience yet with public concessions not yet developed for infrastructure projects o No significant interest from local private partners as potential project cash flows are unclear
Available sources of funds	Public funds supported by regional, national and European funds (e.g., recovery plan).

4.4.3 Burgas, Bulgaria

Title	Outcomes

Project description	Burgas (pop.202000) has joined the Covenant of Mayors and the Green City Accord to work with other European cities. The city submitted an Expression of Interest to join the EU Cities Mission and is correspondingly updating SECAP 2021-2030. Burgas is looking to regenerate its waterfront areas to the Northand South of Burgas Bay, connecting the urban node with the two peripheral waterfront residential areas Sarafovo to the North and Kraimorie to the South, in the context of climate neutrality and integrated intelligent urban systems.
Financing objective for the waterfront pilot	To embed the municipal fund and other energy retrofitting efforts in new financial models to leverage towards the city's ambitions, and to expand the fund into other areas such as mobility poverty and modal shift
Opportunities	o City could assist financial investment incentives with a faster streamlined permitting procedure o Burgas has created a municipal fund to aid citizens in their efforts to make residential buildings more energy efficient - a measure that is crucially urgent across Europe to reduce energy poverty and to make regions more self-sufficient. Burgas has already successfully merged European, national and municipal funding to energy - retrofit public and private buildings, including low-income residents (SCC-project: Sharing Cities).
Gaps	No experience in attracting climate finance and private capital (potential opportunity to develop)
Available sources of funds	Direct national budget, municipal budget, EU operational grants (through national MA), and EU funds competitive calls

4.4.4. Bruges, Belgium

Title	Outcomes
Project description	Its Climate Plan 2030 commits Bruges (pop.120 000) to halving local CO2 emissions by 2030 (-49%) compared to 2011, with at least -55% compared to 1990 - meeting the Paris 2015 and EU Fit for 55 targets. The plan will also make Bruges climate-proof, with a comprehensive risk analysis and action plan that deploys nature-based solutions and smart water management, with stakeholders/citizens/businesses to achieve local climate goals. Bruges will develop the Quay District (Kaai district) as a structuring element in its climate-neutrality strategy, based on a concept study (2021). In 2023 a mobility study was carried out for the Quay District. The Quay District is located alongside the channel Ghent-Ostend and connects the city centre with the harbour (a lock in the middle of the Quay District). The area is planned to be upgraded as a multifunctional urban port area with a coherent and ambitious vision of the future. In Re-Value, Bruges together with VITO, the harbour authorities, local cultural organisations, local maker spaces and food producers, will improve and implement regeneration plans for the Quay District, by optimising the

	interweaving between functions, driven by spatial efficiency, economic profitability, as drivers for actionable, sustainable lifestyles and climate neutrality.
Financing objective for the waterfront pilot	To improve investment plans on the Quay District, as a catalyst for future-proof economies, with potential co-benefits and negative externalities well encapsulated in the long-term vision and policy, to avoid that only the economically most profitable transactions prevail. This will include sharing and circular services, maker spaces (crafts people, creatives, repair-and-share), spatial weaving of functions, local food production (e.g., growing mushrooms on coffee waste) and waste management, strengthening biodiversity, nature-based solutions and integration of climate-adaptive measures, green roofs and urban farming, and sustainable mobility with emission-free city distribution by road and via water, to support sustainable lifestyles. While most pilots in urban regeneration areas will have such an extensive scope, the Quay District will provide a role model on how a city can help generate ambitious circular and sharing value chains. The city of Bruges wants to realise its climate goals on a small scale in the Quay District in the near future as the Quay District was identified in the Spatial Policy Plan Bruges (BRB) as a transformation spot.
Opportunities	o Circular and sharing value chains
Gaps	o Financing structure of the project taking into account that the city doesn't own any area in the Quay District (except for the public domain). o Revenue streams/Profit matching suggestions for private investors/developers o Not easy to involve policy makers to change current funding mechanism
Available sources of funds	Development of private properties by private investors/developers; Public domain and city buildings by public funds. When there are opportunities in private developments for new public space, it is designed/developed by the private partner and given to the city free.

4.4.5 Cascais, Portugal

Title	Outcomes
Project description	Cascais (pop.214000) is composed of different urban centres along the coast in a continuous urban sprawl. The city has a comprehensive sustainability and climate action policy, confirmed by amongst others its SEAP Cascais 2030, Local Sustainable Energy Plan, and Expression of Interest to the Cities Mission. In its Waterfront Pilot, Cascais aims to test participatory interventions for nature-based solutions and urban spaces, increase accessibility through walkability and cycle lanes, improve resilience and biodiversity through nature-based solutions, and boost PV energy production and local energy communities in areas with vulnerable communities, in cooperation with local residents' associations and schools, art and culture organisations, beach concessions, surf schools and associations, user groups (sports) and environmental associations. The Waterfront Pilots will help to demonstrate this approach. For Cascais the pilots will be developed in Carcavelos beach, Guia coast and Ribeira das Vinhas.

Financing objective for the waterfront pilot	To develop investment models that allow the city to prioritise and deploy energy and mobility infrastructure with high impact and high investment costs, aligned with requirements by European Structural Funds and national recovery funds.
Opportunities	Good track record and experience in infrastructure-related investments (such as collective purchasing schemes): the city has an "investment agency" aimed at supporting entrepreneurs and facilitating administrative processes for new investments
Gaps	o The project is not defined yet o No visible financial KPIs on the project o No experience in attracting climate finance and private capital o No opportunities to provide incentives on attracting private investments due to its current regulation-based process o Looking for a provider for public procurement o No relevant investment and partnership models
Available sources of funds	EU Structural funds and city budget

4.4.6 Constanța, Romania

Title	Outcomes
Project description	Constanța (pop.297000) aims to build across-cutting climate-neutrality strategy that nurtures co-benefits and mutual improvements across its already existing strategies, policies and networks (e.g., smart city, sustainable public transport, energy-efficient renovation of buildings and infrastructures, urban regeneration, Covenant of Mayors, CIVITAS and CIVINET). The city centre as residents and tourists experience it, is located at the port and seashore, which makes this an excellent location as catalyst for climate neutrality and quality of life.
Financing objective for the waterfront pilot	To develop an urban database with indicators and metrics, and to refurbish the road infrastructure.
Opportunities	Experienced in attracting finance from EBRD
Gaps	o High level of bureaucracy o Data gathering from private investors is challenging (available only for the last year)

Available sources of funds	European grant funding, national investment programs, municipal budget and, occasionally, EBRD loans.

4.4.7 İzmir, Türkiye

Title	Outcomes
Project description	İzmir (pop. 4462056) is a signatory to the Covenant of Mayors and has adopted İzmir's Sustainable Energy and Climate Action Plan. The city has taken steps to become climate-neutral by 2050. İzmir has identified actions like biodiversity, air, soil, and climate change issues including water in its Green City Action Plan, which was prepared for the first time in Türkiye in İzmir. It will boost the development and implementation of its Waterfront Pilot Area - Alsancak - and its connection with the historic city. These approaches are in the pilot stages of development, and need support to document impact, systemise co-creation, and assess investments and partnerships, to support fine-tuning and scaling - targeted by the Re-Value project.
Financing objective for the waterfront pilot	To make buildings more financially sustainable and involve the waterfront building owners in the financing mechanisms, as their properties will increase in value after the renovation.
Opportunities	"Tarkem": unique PPP model in the historical part of İzmir city, Türkiye that could be replicated
Gaps	Full assessment of investments and partnerships for project development purposes
Available sources of funds	Municipal resources, Green City Action Plan (funded by EBRD and World Bank)

4.4.8 Písek, Czech Republic

Title	Outcomes
Project description	Písek (pop. 30 000) has strong strategic plans for climate neutrality, climate change adaptation and urban quality, including sustainable urban mobility to reduce private car use and increase cyclability and walkability, flood control, improved use of nature-based solutions, and cultural heritage. In Re-Value, Písek will upgrade the next version of its SECAP as well as its Strategic Plan and Development Concept of the City of Písek 2025, and fine-tune regeneration plans for the city's waterfront with an improved, systemic organisation structure. The city aims to upgrade its waterfront alongside 2 rivers: Otava and Vltava, as Waterfront Pilots.

Financing objective for the waterfront pilot	To identify investment and partnership models that allow the city to merge climate change adaptation and mitigation measures in integrated portfolios, and connect these to the already implemented PaRo system of participatory budget
Opportunities	o Some environmental data of the city is available but should be verified. o High interest in collaboration with different stakeholders (universities, etc.) o Developing a new City Strategy with a Subsidy Programme
Gaps	o Legislation: hard to implement new ideas and financial products – need support from a public investor or political support o Lack of funds o Hard to collect related data. o Legislation in Czech Republic: inflexible
Available sources of funds	o City budget (water supply network, transport infrastructure - main transportation routes are financed from state or regional funds, the city finances only lower-class roads) o Established organisations (e.g., heating infrastructure is financed through Teplárna a.s., in which the city is the majority owner)

4.4.9 Rijeka, Croatia

Title	Outcomes
Project description	Rijeka (pop.128000) connects an ambition to become climate-neutral with models for urban regeneration, circular nature-based solutions, sustainable mobility, and health corridors. Rijeka was European Capital of Culture in 2020 and had an array of infrastructures prepared but had to pause its plans due to COVID-19. In Re-Value, the city will identify how these infrastructures can be re-used to boost implementation of climate-neutrality ambitions. As the port is located directly in the centre, establishing the waterfront as a catalyst for climate neutrality will have a particularly tangible role in realising the city's ambitions.
Financing objective for the waterfront pilot	To find PPP investments for the warehouse on its waterfront area by using the shore and the sea area for further development of its infrastructure
Opportunities	o The city has bank loans for infrastructure projects – up to 20% of the city's original income o The financial model might not be profitable

Gaps	o Significant private investments o Level of investment for the project is unclear o Legislation: private investments can be attracted only for long-term contracts o Legislation: no options for PPP units
Available sources of funds	Public funds

4.5 Next Steps

The main gaps identified are the inability to mobilise private capital and in some cases a lack of knowledge on how to access additional climate funding and EU grants. On the former, there is a limited track record in setting up successful PPPs across cities. This is due to a number of factors ranging from absence of enabling policies to the lack of capacities, of political willingness and of a pipeline of bankable projects. Going forward, IC3 will engage in further dialogues with the cities and relevant partners and stakeholders to support the scenario building and project definition process.

Identified areas for further discussion and development based on the gaps:

- gathering of historical data on infrastructure investments to identify potential financing sources and channels;
- defining project scope and components, costs and benefits;
- sharing experience in infrastructure finance (PPPs and other financing structures) among cities;
- mapping of key stakeholders relevant to the waterfront pilot;
- engagement and exchange with private & public stakeholders to foster partnerships.

5 Conclusion

In conclusion, the Re-Value project is poised to enter a critical phase, leveraging insights from the City Dialogues, capacity-building efforts, and scenario-building activities to drive urban transformation. A key focus is on understanding and documenting the co-benefits of climate neutrality and urban quality, such as enhanced air quality, green spaces, and climate resilience. These co-benefits, which will be further explored through Task 1.1, IC1 and Expert Teams, are essential for guiding decision-making processes and shaping urban development strategies across the Re-Value cities. Story-building will play a central role, not only in articulating these benefits but also in fostering creative collaboration within the consortium partners.

Meanwhile, IC2 will focus on building each city's capacity to adopt data-driven approaches to urban sustainability. Through a series of workshops, cities will be introduced to technical solutions and best practices from leading institutions like ECOTEN Urban Comfort, Augment City, and VITO. These collaborations will help cities co-create urban scenarios, enabling them to integrate data-driven methods into their long-term planning efforts. The results will be documented in a comprehensive guideline, ensuring that cities are equipped with the knowledge and tools needed for successful implementation.

At the same time, IC3 will address the financial challenges cities face, particularly the difficulty of mobilizing private capital and securing EU climate funding. By fostering dialogue around project financing, public-private partnerships (PPPs), and infrastructure investments, IC3 will help cities identify potential funding sources and build the necessary capacities to develop bankable projects. The exchange of knowledge on financing structures, stakeholder engagement, and project development will be vital in overcoming these barriers and ensuring the successful implementation of sustainable waterfront pilots and long-term urban transformation plans.

Together, these efforts create a cohesive framework for empowering cities to prioritize climate action, enhance urban quality, and secure the resources needed to implement sustainable, data-driven, and financially viable urban projects.

6 List of Acronyms

AC	Augment City
AI	Artificial Intelligence
ECOTEN	Ecoten urban comfort s.r.o.
EU	European Union
GIB	Global Infrastructure Basel
GIS	Geographic Information System
IC	Innovation Cycle
ICLEI	ICLEI EUROPEAN SECRETARIAT GmbH
IFLA	International Federation of Landscape Architects Europe
IM	Impact Model
IZTECH	İzmir Institute of Technology
JAE	Junior Achievement Europe
KPI	Key Performance Indicator
LNEG	Laboratório Nacional de Energia e Geologia
NEB	New European Bauhaus
NGOs	Non-Governmental Organisations
NTNU	Norwegian University of Science and Technology
PPP	Public-private partnerships
SP	Sladovna Czech cultural organisation
SU	Sofia University
SUAS	Sørsida Utvikling AS
TTP	Territorial Transformation Plan
TV	Teatret Vårt
UNG	Univerza v Novi Gorica
UNIBO	Università di Bologna
VITO	VLAAMSE INSTELLING VOOR TECHNOLOGISCH ONDERZOEK N.V.
WP	Work Package
ZMC	ASOCIAȚIA DE DEZVOLTARE INTERCOMUNITARĂ ZONA METROPOLITANĂ CONSTANȚA

Annexes

Annex 1 – Timeline of 1st and 2nd round of City Dialogues

Table 1: Timeline of the 1st round of City Dialogues

City	Date	Time
Rijeka	23 February	11:00 - 12:00
İzmir	3 March	10:00- 11:00
Ålesund	3 March	11:00 - 12:00
Constanța	3 March	13:00 - 14:00
Cascais	8 March	11:00 - 12:00
Bruges	9 March	10:00 - 11:00
Burgas	9 March	12:00 - 13:00
Písek	10 March	10:00 - 11:00
Rimini	10 March	14:00 - 15:00

Table 2: Timeline of the 2nd round of City Dialogues

City	Date	Time
Rijeka	17 April	11:00 - 13:00
Rimini	21 April	12:00 - 14:00
Cascais	2 May	12:00 - 14:00
Písek	3 May	14:00 - 16:00
Constanța	4 May	14:30 - 16:30
İzmir	5 May	12:30 - 14:30
Ålesund	8 May	13:00 - 15:00
Burgas	2 June	12:00 - 14:00
Bruges	2 June	15:00 - 17:00

About Re-Value – Re-Valuing Urban Quality & Climate Neutrality in European Waterfront Cities

The Re-Value partnership consists of nine European waterfront cities and selected European organisations that work to make the urban transition irresistible for everyone. This is done by demonstrating how climate neutrality and urban quality can be aligned, by re-valuing the cities' connection to their waterfronts, strengthening co-benefits and mitigating potential adverse impacts.

Ålesund (Norway), Bruges (Belgium), Burgas (Bulgaria), and Rimini (Italy) demonstrate how integrated urban planning and design can be optimally deployed to achieve climate neutrality and significantly reduce GHG emissions by 2030. In addition, Cascais (Portugal), Constanța (Romania), İzmir (Türkiye), Písek (Czechia), and Rijeka (Croatia) learn, replicate and develop their own participatory story-building, data-driven scenarios, and financial and partnership models on integrated urban planning and design to accelerate their journeys to climate neutrality.

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Learn more about the partnership and the outcomes on re-value-cities.eu.

Partners

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