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D4.1.

REPLICATION MANUAL

TOOLS FOR REPLICATION STRATEGY

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Bauhaus of the Seas Sails

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Table of Contents

Table of Figures

1. Executive Summary

This document constitutes the deliverable "D4.1 – Operations manual for replication strategy" of the project "BoSS - Bauhaus of Seas Sails" (project reference: 101079995), funded by Horizon Europe, under the topic HORIZON-MISS-2021-NEB-01-01. This Operations Manual is created to define an overall definition of the project´s replication strategy.

This is a living document and should be updated continuously throughout the project. This should reflect the principles of urban regeneration, together with the principles of the NEB and the specific strategies of the Bauhaus of the Seas Sails. It looks, in the first moment, to replication strategies, from a local level and potentially larger scales.

2. Introduction

Urban regeneration is a crucial issue in contemporary society, as cities all over the world face numerous challenges relating to social cohesion, environmental sustainability, and economic growth[1]. To address these obstacles, policymakers and planners have increasingly turned to co-design approaches involving collaboration between community members, local authorities, and other stakeholders. However, it can be difficult to replicate successful urban regeneration processes that involve co-design on a larger scale, given the diverse contexts and needs of different communities[2].

In this document, we investigate replication strategies for urban regeneration processes involving a co-design approach, beginning at the local level, and expanding to a larger scale. Before explaining our ideal process, it might be helpful to define what replication is about.

[1] UN-HABITAT, Urban Regeneration

[2] Dan Breznitz, *"Innovation in Real Places"*, 2021

In the context of the New European Bauhaus initiative's project "Bauhaus of the Seas Sails," replication takes centre stage as a fundamental concept for achieving sustainable, inclusive, and aesthetically regenerative projects starting in European coastal regions to then widen to European territory in general. In this context, replication refers to the process of systematically implementing successful local solutions on a larger scale, allowing other cities and regions to emulate and adapt these solutions to their unique contexts and needs. Replication facilitates the transfer of knowledge, best practices, and innovative ideas by providing a step-by-step manual, thereby fostering a collaborative and interconnected network of coastal communities working toward a shared vision of sustainable development.

To this end, collaboration and continuous exchanges between pilot cities will play a pivotal role. For the success of the strategy, the cities involved will have to share knowledge and experiences. The strategy itself will be open to interventions and changes by pilot cities, as every context has its peculiarities and might need a slightly different approach than the one presented in this document. Through replication, we aim to unleash the transformative potential of regenerative projects according to the New European Bauhaus principles, amplifying their impact and inspiring positive change throughout Europe's coastal regions and beyond.

The replication strategy goals and expected outcomes concerning Work Package 4 could be resumed in five main points:

1. Dissemination of Best Practices: Replication's primary objective is to share and disseminate best practices developed in specific coastal regions, ensuring that innovative and effective solutions are widely known and accessible to other cities. Replication aims to inspire and inform decision-makers, stakeholders, and communities in various locations to promote the adoption of sustainable, inclusive, and aesthetically regenerative projects.

2. Adaptation to Local Contexts: Replication acknowledges the significance of adapting solutions to the distinctive characteristics, challenges, and opportunities of each coastal area. The process intends to provide a framework to assist cities in adapting replicated projects to their unique

environmental, social, cultural, and economic contexts. This strategy ensures that solutions remain relevant and effective while allowing for greater flexibility and originality.

3. Scaling Impact: Replication aims to amplify the effectiveness of projects by facilitating their implementation on a larger scale. The New European Bauhaus initiative aims to create a network of interconnected coastal areas that collectively contribute to the transformation of European coastal regions by replicating proven solutions. Through replication, the initiative aims to address sustainability issues comprehensively, thereby accelerating the transition towards more environmentally conscious, socially inclusive, and aesthetically pleasing coastal communities.

4. Collaboration and Knowledge Exchange: Replication encourages cooperation and the exchange of knowledge between cities and regions, thereby creating a dynamic learning community. It promotes a collective approach to addressing common challenges by fostering the exchange of experiences, lessons learned, and innovative ideas. The anticipated outcome is a thriving network of coastal areas that actively engage in mutual support, foster continuous improvement, and drive innovation through the sharing of specialized knowledge.

5. Long-Term Feasibility: Ultimately, replication aims to establish a framework for the development of regenerative projects that is sustainable over the long term. Replication seeks to guarantee the continued success and viability of implemented projects by providing a comprehensive guide and support system. The expected outcome is the establishment of self-sustaining initiatives that contribute to the long-term well-being of coastal regions and the preservation of their natural and cultural heritage.

By pursuing these replication objectives and anticipated outcomes, together with the "Bauhaus of the Seas Sails" project, we aim to create a movement that transcends individual projects and promotes a holistic and collaborative approach to sustainable development in European coastal regions.

The following replication strategy has been built based on the co-design approach outlined by Work Package 2. By identifying the key elements of successful co-design processes and adapting them to different contexts, it is possible to replicate and scale up urban regeneration efforts while ensuring

that they remain relevant and effective for the communities they serve, according to our argument. Through case studies and analysis of existing literature, we provide policymakers, planners, and community members with recommendations for replicating successful urban regeneration processes and promoting sustainable, inclusive, and resilient cities.

Sustainability (intended as environmental sustainability), social inclusion and beauty (intended as poetry and functionality) are indeed the three pillars of the New European Bauhaus (NEB), the international movement at the core of this whole project. The following document is meant to provide a guiding kit of tools for replication strategies related to urban regeneration projects, within the project Bauhaus of the Seas Sails (Project ID: 101079995).

Building on the co-design template presented by Work Package 2 (WP2) and the drops related to Works Package 3 (WP3), the final goal of this first Work Package 4 (WP4) deliverable is to define strategies, processes and methodologies to be involved in the replication of a local or hyperlocal drop at a wider scale, being it regional, national or international level. From a theoretical point of view, this phase deals with the concept of ripple, the immediate response to a drop that can further expand at a higher scale to become a wave. The document is divided into six chapters that resume the main steps and activities characterising a replication model, with the aim of defining a strategy that can be used and applied to any context, also through the analysis of some best practices and future contributions of other cities and work packages.

The replication strategy will be organised and implemented throughout the three years of the project, being an ever-evolving document that necessitates concrete actions to be tested with.

The first year will be dedicated to the definition of the strategy from a theoretical point of view. Since the methodological steps that will be presented are meant to fit in different European contexts the strategy will need an ongoing collection of data and experiences from all the Pilots, which will be carried out in the first and second year. Once the Drops start to be implemented in the second year, an analysis of the projects according to our kit will occur, to see where differences appear and what tools would better suit a precise context. Finally, during year 3, after the implementation of the Drops, the strategy will continue with a measurement and evaluation of the impact of the activities realized

in each Pilot, to see which common parameters are accessible and build the basis for a regenerative intervention able to sustain itself in the coming years. A general roadmap of these first phases is shown in the figure below.

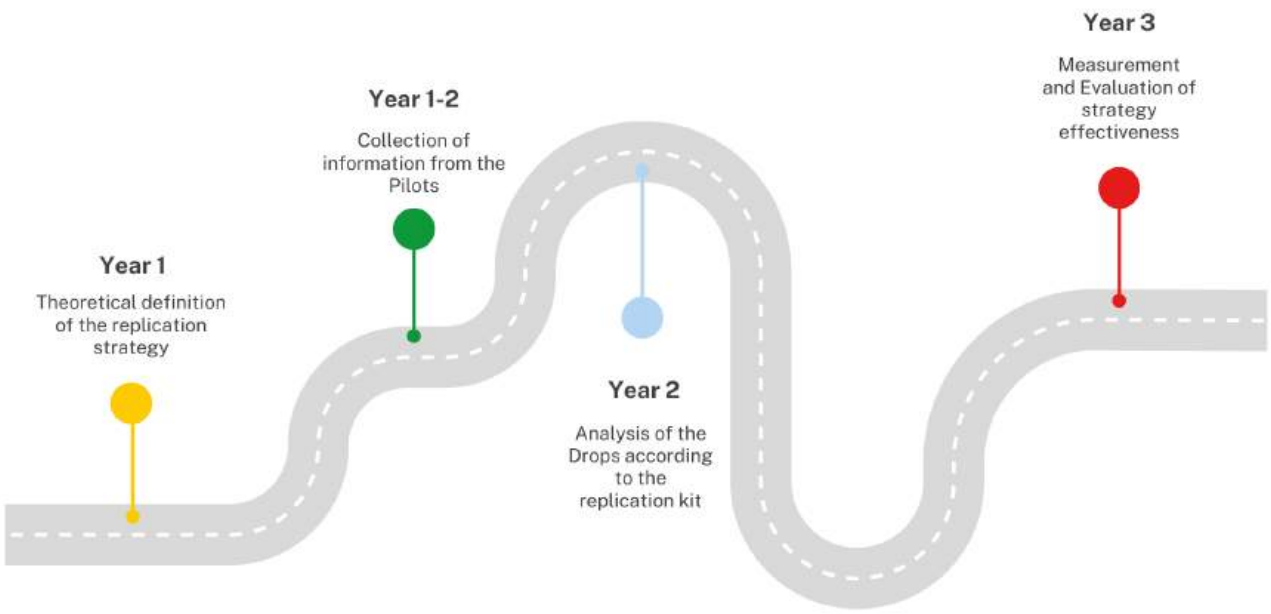

Figure 1. Replication strategy roadmap

3. Research context

3.1. Following the WP2 co-design template

As a foundation for the replication strategy presented in the following document, we decided to start from the co-design template presented by WP2, aimed at defining guidelines to conduct co-design locally. In accordance with New European Bauhaus principles, the indicators considered for the development of the replication strategy were *Sustainability* (reconciling with the Sea), *Inclusion* (reconnecting communities), *Aesthetic* (renewing practices). A fourth element included by the

previous phase is the *"locally grounded"* concept implicit in any drop, which will be extended to broader levels with the evolution of ripple and wave.

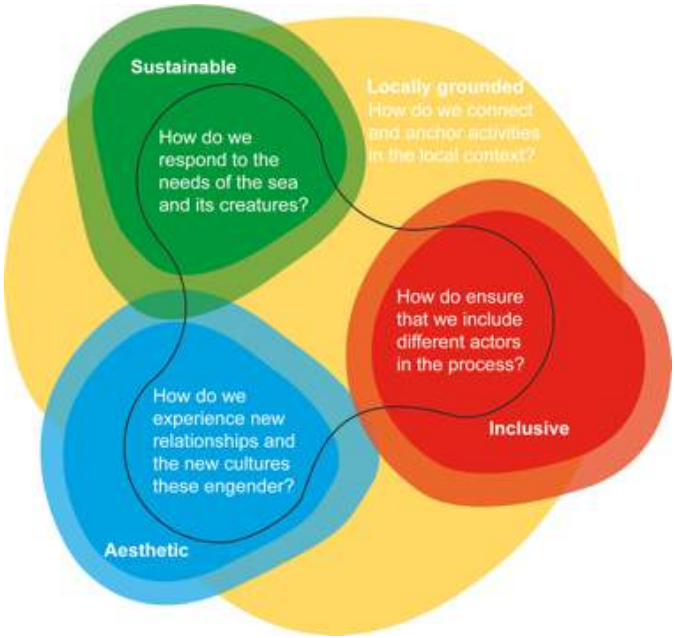

Figure 2. The four principles of WP2

The four principles in question, in accordance with the WP2 template, are then adopted for planning and evaluating local pilots. Every pillar has in fact two extremes that guide every pilot in the identification of their current situation, functioning as an actual metric.

Figure 3. The four principles as sliders

3.2. Objectives of WP4

Starting from the basis built by WP2 at a local level, this document seeks to define a replication kit that can be used to implement effective urban regeneration processes in cities around the globe. The kit will include a variety of tools and a methodology that can be adapted to the unique requirements and challenges of various urban areas, starting from the seven pilots of coastal areas. Moreover, the kit is designed to be effective independently from the scale in question, be it regional, national or international. This was possible by considering parameters common to different European countries using European databases.

The tools included in the kit will aid city decision-makers and stakeholders in identifying key problems and opportunities in their communities, engaging with a diverse range of stakeholders, and developing innovative solutions that prioritize sustainability, inclusion, and well-being. The

methodology included in the kit will be based on a co-design approach that emphasizes collaboration, empathy, and creativity by utilizing design thinking principles as a more precise guideline from an operational point of view. The actors and values defined in the co-design template by WP2 are therefore respected, adding to it only a more precise methodology that has specific steps to deal with regenerative processes.

We aim to create solutions that are responsive to the needs and priorities of local communities by involving a wide variety of stakeholders in the regeneration process, not only including Sea Forum and Ocean Ambassadors, but citizens at local and higher levels as well. Overall, the purpose of this document is to provide a useful and easily accessible resource for city decision makers and stakeholders who are dedicated to fostering more sustainable, equitable, and prosperous urban environments. By disseminating replicable best practices and tools, we hope to inspire and support a global movement toward regenerative cities that prioritize the well-being of their residents and contribute to the attainment of internationally accepted standards for sustainable development, always putting at the centre the three pillars pertaining to the New European Bauhaus.

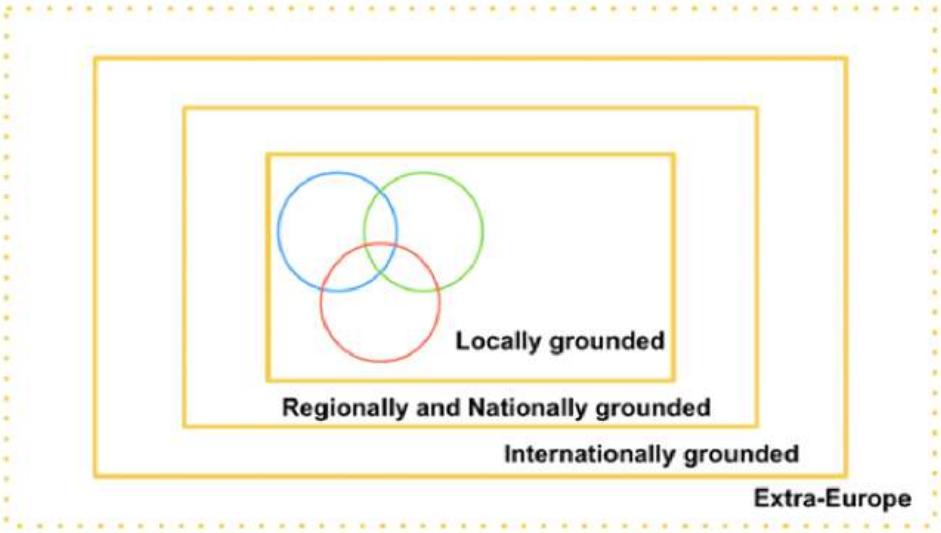

Figure 4. From locally to globally grounded

4. Start from the root cause

4.1. Find the rift in your territory

Urban regeneration processes have become increasingly significant in contemporary society, as cities around the globe face a variety of challenges requiring innovative solutions. Whether the goal is to repair a rift in the community, the environment, or the economy, it is crucial to identify the root cause of any regeneration process to ensure that the resulting efforts are effective and significant[3]. One of the primary reasons for this is the fact that urban regeneration projects can be time and cost-intensive. Identifying the root cause of a problem enables planners and policymakers to focus their efforts and resources on the most crucial areas, thereby preventing the waste of effort and resources. In addition, a comprehensive understanding of the issue can facilitate the development of a plan that considers a wider range of potential solutions and attempts to avoid the emergence of new problems.

Identifying the primary issue also ensures that the regeneration process is centred on the requirements of the local community, including them following a co-design approach and making sure that their needs are met, which is crucial for the success of urban regeneration projects. This can lead to a more inclusive, collaborative and co-creative approach to urban regeneration, where community members feel they have a stake in the process and are more likely to support the changes that result. Nonetheless, local citizens are just one of many other stakeholder groups to be involved. Middle and top-level (in terms of geography and governance levels) should also be involved. For this reason, an analysis carried out following common European parameters allows us to focus on indicators shared by everyone, either at a hyperlocal or international level. In addition, identifying the root cause of a problem can facilitate the development of more durable and robust solutions.

Numerous urban revitalization initiatives concentrate on short-term solutions that may not address the underlying problems or that only partially hide the key rift. By identifying the underlying cause of

[3] Elena Granata, *"Placemaker"*, 2021

a problem, planners and policymakers can develop solutions that not only address the immediate issue but also the long-term viability of the region. This can result in long-lasting improvements for the community's benefit. Identifying the central issue at the heart of any urban regeneration process is crucial for ensuring that the ensuing initiatives are effective, influential, and sustainable. Urban regeneration projects can help create thriving, sustainable, and inclusive cities for future generations by focusing efforts and resources on the most critical areas, involving the community in the process, and developing comprehensive, long-term solutions.

These root causes may vary among coastal regions, but some of the most common include:

Environmental Degradation, such as pollution, overfishing, habitat destruction, or coastal erosion, may constitute a significant root cause. These factors can disrupt the ecological balance, have an effect on biodiversity, and endanger the health of marine ecosystems as a whole.

Unsustainable development practices, such as poorly planned infrastructure, unregulated tourism, and inadequate waste management systems, may also be a root cause. These practices can deplete natural resources, increase carbon emissions, and negatively affect local communities.

A lack of awareness and education about sustainable practices and the importance of coastal ecosystems can also contribute to the rifts. Inadequate environmental conservation education, limited access to information, and a lack of engagement with local communities may result in a disconnect between human activities and their environmental consequences.

Socioeconomic inequalities can be considered too. Access constraints to resources, economic opportunities, and social services can exacerbate environmental issues and exacerbate social tensions. To achieve long-term sustainability and social cohesion, it is essential to address these inequalities and promote inclusive development.

Weak governance structures, ineffective policies, and regulatory gaps can impede efforts toward sustainable development. Inadequate coordination between various stakeholders, a lack of enforcement, and the limited participation of local communities in decision-making processes may impede progress in addressing the identified rifts.

Figure 5. Step 1: Find the rift in the territory

A useful tool in detecting potential root causes of these types of problems could be causal loop diagramming. This tool allows the mapping of indirect, multiple, circular, non-linear cause-effect chains, identifying where vicious cycles exist, balancing or reinforcing loops exist, and aiding to identify potential root causes (if possible). It would be useful for mapping activities such as identifying system dynamics, visualizing feedback loops, assessing intervention impacts and facilitating collaborative understanding.

With this reflection, we aim to answer the question of where replication is expected to take place. In the face of significant societal challenges, such as environmental degradation, community disintegration, educational disparities, and governance inefficiencies, replication strategies can play a crucial role in fostering transformational change. By identifying key problems that reverberate across multiple locations, replication initiatives can be implemented in multiple locations that share a common rift in an effort to fix the underlying problems.

When a significant problem exists in multiple locations, replication strategies offer the chance to magnify the impact of effective solutions. By identifying and addressing the underlying causes of a problem, replication ensures that effective solutions are not restricted to a single location but can be implemented in similar contexts. This makes it possible to scale up interventions, allowing them to reach a larger population and maximize the potential for positive change.

4.2. Implications for replication strategies

Replication strategies recognize the significance of local context in addressing societal issues. While the problems may be similar in different locations, the specific nuances and dynamics may vary. Replication enables the adaptation and customization of solutions to each location's particular needs and characteristics. Replication increases the relevance and sustainability of interventions by capitalizing on local knowledge, resources, and community engagement.

Replication strategies facilitate the dissemination of best practices and learned lessons across locations. Replication initiatives can transfer effective knowledge, methodologies, and strategies by identifying effective approaches and models. This exchange of ideas and experiences promotes collaboration, the cross-pollination of innovative solutions, and group learning. It enables communities to build on existing knowledge and avoid reinventing the wheel, resulting in interventions that are more efficient and effective.

Replication strategies can influence policy and systemic change by demonstrating the viability and efficacy of specific interventions. When successful solutions are replicated in multiple locations, policymakers have a compelling argument for adopting and integrating these methods into broader policies and systems. Replication can influence decision-making processes, resulting in long-lasting, sustainable systemic changes.

Replication strategies foster networks and collaboration among stakeholders pursuing a common objective. Replication initiatives create platforms for knowledge exchange, shared resources, and collective problem-solving by linking communities facing similar challenges. These networks enable individuals and organizations to collaborate, leverage their respective strengths, and work more effectively together to address complex societal issues.

Replication strategies empower local communities by actively involving them in problem-solving. Replication initiatives foster a sense of ownership, agency, and collective responsibility by involving the community as active participants rather than passive recipients. This participatory approach

ensures that solutions are culturally appropriate, inclusive, and sustainable, while simultaneously building community resilience and capacity.

In conclusion, replication strategies have enormous potential for catalysing transformative change in societies confronted with substantial problems. By identifying shared rifts and applying successful solutions across multiple locations, replication initiatives amplify impact, leverage local context, share best practices, foster collaboration, and empower local communities. Replication can bring societies closer to resolving fundamental issues, thereby creating a more sustainable, equitable, and resilient future for all.

5. A kit for replication strategies

As presented above, finding the rift – the deep problems at the basis of society — is the first step toward regeneration and consequently replication. Nevertheless, the mechanism of spotting the true issue is not easy or immediate, but it can require some tools that enable a better understanding and awareness of the current situation. Replicating successful urban regeneration processes that involve co-design can be difficult due to the diversity of community contexts and needs. To address this issue, a replication kit has been pointed out as a second step of our operational manual. The kit is based on a territorial identity card, accompanied by the definition of a design thinking methodology to strengthen the co-design approach at the base of the project.

The territorial identity card is a crucial component of the replication kit because it provides a framework for comprehending the features and needs of a specific community. This identity card is intended to contain information about the community's history, culture, values, aspirations, and current challenges and opportunities. The parameters chosen for the kit are shared in all European countries, in order to be sure that everyone can apply the same strategy, and for this reason, they have been selected from European databases. All the parameters identified belong to the four milestones of The New European Bauhaus movement and are coherent with the framework provided by WP2.

Therefore, the main areas of analysis will concern Sustainability, Inclusion, Culture and Governance. The territorial identity card provides a foundation for designing effective co-design processes that meet the needs of the community by defining the distinct identity of the territory.

The second component of the replication kit consists of a more detailed design thinking approach combined with the co-design template – resulting in the so-called *co-Design Thinking* approach. This approach involves a collaborative and iterative design and implementation process for urban regeneration projects that involve community members, local authorities, and other stakeholders. The methodology emphasizes empathy, creativity, and experimentation, and seeks to build a shared understanding of the problem and co-create community-specific solutions. Together, the territorial identity card and the co-design thinking methodology constitute a potent instrument for replicating successful urban revitalization processes.

Policymakers, planners, and community members can replicate and scale up urban regeneration efforts while ensuring that they remain relevant and effective for the communities they serve by adapting these tools to different contexts and communities. This kit can help create sustainable, inclusive, and resilient cities that meet the needs and aspirations of all their residents by providing a framework for understanding the unique identity and needs of a community and a collaborative and iterative process for co-designing solutions.

Figure 6. Four areas composing the kit

5.1. Three phases of co-design

For a better understanding of the proposed replication strategy and a better distinction between the different moments of co-design within the whole project, it might be useful to divide the co-design and delivery processes in a manner that encompasses three distinct phases: the Zero Ground of co-design, the constitution of the Sea Forum, and the deployment phase.

The Zero Ground of co-design involves the identity card, the empathy and the definition stages referred to previously. It focuses on the identification of needs, rifts, and issues within the community or the specific project context. It entails engaging with stakeholders, conducting research, and gathering insights to comprehend the necessary challenges and opportunities. This phase lays the groundwork for the co-design and delivery phases that follow. From a temporal point of view, this phase can be referred to as previous to the project beginning.

After the Zero Ground, the **Sea Forum,** a group of external stakeholders, is formed to provide insightful opinions, contributions, and perspectives throughout the duration of the project. The Sea Forum plays a crucial role in the co-design process by incorporating diverse perspectives, representing community

interests, and ensuring that the perspectives of non-human beings are considered. The co-design model developed by WP2 guides the collaboration between the Sea Forum and other stakeholders, fostering a participatory approach. This phase represents the current state of the project, considering the different drops of every Pilot.

After the definition of the executive plans, the **deployment phase** corresponds to the execution and implementation of the project. It entails translating co-designed solutions into actionable steps and measurable outcomes. This phase entails the actual implementation of regenerative initiatives in accordance with the co-design process's established guidelines, strategies, and recommendations. It necessitates efficient project management, resource coordination, and constant communication with stakeholders. This phase includes the work done by WP3 and the activities and results related to year 2 of the project.

By incorporating these three phases into the replication strategy's methodology, a holistic approach is ensured. The Zero Ground phase establishes the context by identifying the needs and challenges of a city before the start of the project, whereas the establishment of the Sea Forum and its co-design model facilitates the participation of diverse stakeholders and the incorporation of non-human perspectives during the development of the project. In the final phase, the co-designed solutions are translated into actionable steps for successful implementation.

This integration of co-design and delivery acknowledges the significance of community engagement, understanding of their needs, and incorporation of their feedback throughout the project's lifecycle. It ensures that the replication strategy incorporates both top-down and bottom-up perspectives, fostering a sense of ownership and sustainability. By adhering to this methodology, the replication process becomes more inclusive, context-specific, and sensitive to the unique challenges and opportunities of each participating city in the Bauhaus of the Seas Sails project.

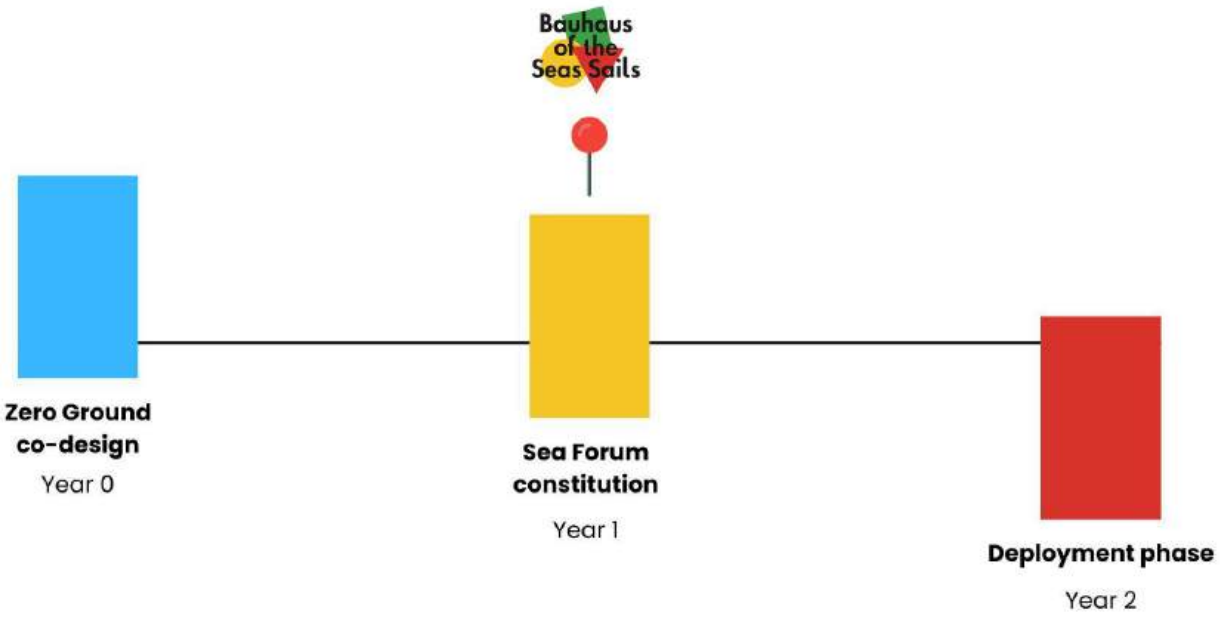

Figure 7. Three phases of co-design

5.2. Integrating replication strategy with co-design and delivery: a collaborative approach

Now that a clearer methodology has been shaped, it is crucial to determine which steps of the proposed replication model align with the co-design process outlined by WP2 (and the consequent role of the Sea Forum) and which are more closely associated with the delivery process defined by WP3, in order to build a shared structure through what can be considered a collaborative approach.

The co-design process engages diverse city actors, including community members, experts, stakeholders, and the Sea Forum, to shape and contribute to the project collectively; The delivery

process, on the other hand, focuses on the practical implementation of the identified solutions, considering the unique characteristics of each context.

Following the order of the previously presented phases, here is a breakdown of how they relate to co-design and delivery:

Empathy: The empathy phase aligns primarily with the co-design procedure. It entails comprehending the needs, aspirations, and obstacles of the intended audience, including community members. Through direct observation, interviews, and interaction with extreme and mainstream users, an empathetic understanding of their experiences is developed. The Sea Forum contributes to the co-design process by providing valuable insights and representing the interests of the broader community by providing outside perspectives and diverse opinions.

Definition: The definition phase incorporates aspects of both the co-design and delivery phases. It involves synthesizing the insights gained during the empathy phase to define precise problem statements, project objectives, and user personas. This step assists in aligning the perspectives of the various co-design process stakeholders. In this phase, the Sea Forum is responsible for contributing to the definition of objectives, validating problem statements, and ensuring that identified personas are representative of the larger community.

Ideation: The phase of ideation is integral to the co-design procedure. It emphasizes the generation of innovative ideas and solutions through collaborative brainstorming sessions involving Sea Forum stakeholders and experts. The objective is to utilize diverse perspectives and expertise to generate a vast array of solutions for the identified challenges. The participation of the Sea Forum ensures that the ideas and solutions reflect the interests and values of the greater community and foster inclusiveness.

Prototyping: The prototyping phase falls primarily under the delivery procedure. It entails transforming chosen concepts into tangible prototypes or mock-ups that represent the proposed solutions. The focus is on practical implementation, with consideration given to the level of fidelity and whether analogue or digital prototypes will be created. During this phase, the project teams

collaborate to develop and refine prototypes based on earlier co-design insights. The Sea Forum's role may shift to providing community-based feedback and validation on the prototypes' applicability and significance.

Test: The test relates to both the co-design and delivery phases. It entails presenting prototypes or implemented solutions to the public for evaluation and feedback. This phase allows community members and stakeholders to interact with the solutions, provide feedback, and evaluate their effectiveness. The role of the Sea Forum is to actively participate in the testing process, providing feedback and representing the interests of the broader community. Their perspectives help validate the solutions and ensure that they are in line with the community's needs and aspirations.

In summary, the co-design process includes phases such as empathy, ideation, and portions of the phase of definition. These phases emphasize the active participation of the Sea Forum and various city actors in shaping the project's direction and solutions collectively. The delivery process consists of the definition phase, prototyping, and testing, with an emphasis on the implementation and refinement of the identified solutions, while taking into account the diverse perspectives and insights gathered during the co-design process. The Sea Forum serves as a vital link between the project teams and the larger community, providing perspectives from the outside, ensuring inclusivity, and contributing to the success of replication efforts.

5.3. Territorial Identity Card

The territorial identity card is a powerful tool for comprehending the distinctive identity and requirements of a specific urban area. This tool outlines a series of governance, culture, inclusion, and sustainability-related factors, providing an overview of some of the community's key characteristics and challenges. At its core, the territorial identity card is intended to collect data on the urban area's defining geographic characteristics. This includes information about the area's physical, environmental, and social characteristics, as well as its history, culture, and customs. The territorial identity card would not be a rigid list of predetermined parameters to be followed, instead it will allow more adaptable, more context-specific and more representative of the environment data.

The parameters chosen here are just an example of possible information available to every country using European databases.

By defining these geographical characteristics, the tool would lay the groundwork for understanding the distinct identity of the community and the challenges it faces. The territorial identity card also includes information on the urban area's local stakeholders: information about community members, local authorities, businesses, and other organizations that contribute to the area's social and economic life.

By identifying these stakeholders and their interests, the tool provides a framework for establishing effective partnerships and collaborations to address the community's challenges. In addition to analyzing the leading sectors of the urban area, the tool would identify the key industries, services, and economic drivers that shape the local economy. This data can assist policymakers and planners in identifying opportunities for economic development and job creation, as well as the challenges and potential risks facing these sectors. Lastly, the territorial identity card could provide information on relevant projects that have been implemented in the urban area, highlighting successful initiatives that have addressed critical challenges and contributed to the growth of the community. By gaining an understanding of these projects and their outcomes, policymakers and planners can use best practices and lessons learned to design effective solutions to the challenges facing the community. Each of the four milestones has two key fields of investigation, for a total of eight fields of investigation that shape the profile of a specific area. They are *Population, Employment, Education and Work, Human Capital, Human Impact on the Environment, Mobility, Society and Institutions*. The following figure better describes the division for each of the four milestones.

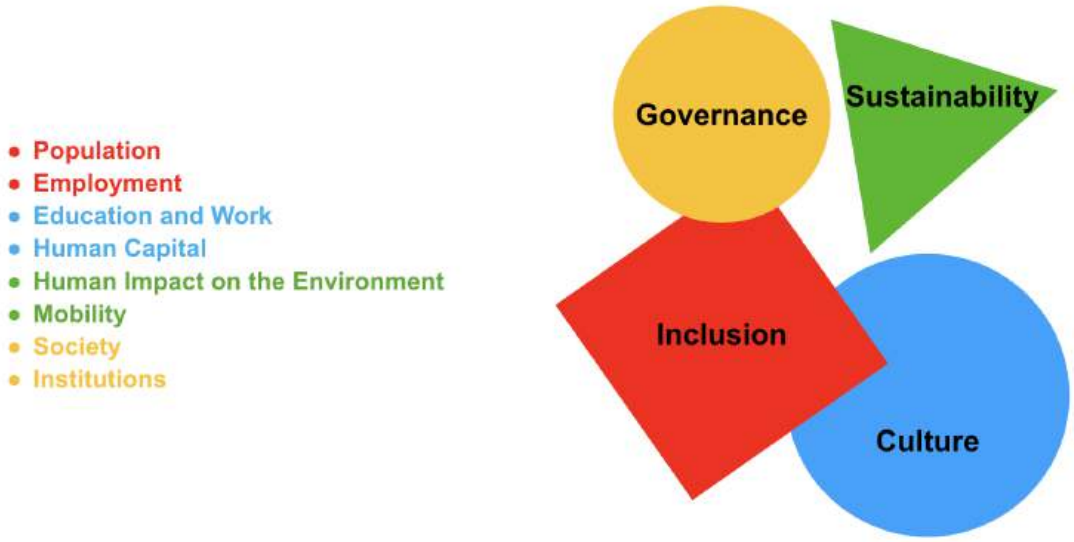

Figure 8. Key fields of investigation

Inclusion parameters

The first pillar concerning inclusion is characterized by metrics related to population and employment. It is meant to define the total amount of population and the percentage of foreigners as part of the population[4]. The proportion should give a first frame on the level of inclusion present in a specific area. Nevertheless, a high percentage of foreigners does not necessarily imply a high level of inclusion, for this reason, a further analysis in the search for any rift is required. Employment has a lot to do with the economic aspect of that area, starting from the Gross Domestic Product (GDP) to the employment and especially the unemployment rate characterizing the society[5]. These are all parameters related to inclusion because the percentage of foreigners and unemployment rate are often signs of a healthy or sick society, depending on the level of each.

[4] Eurostat
[5] OECD

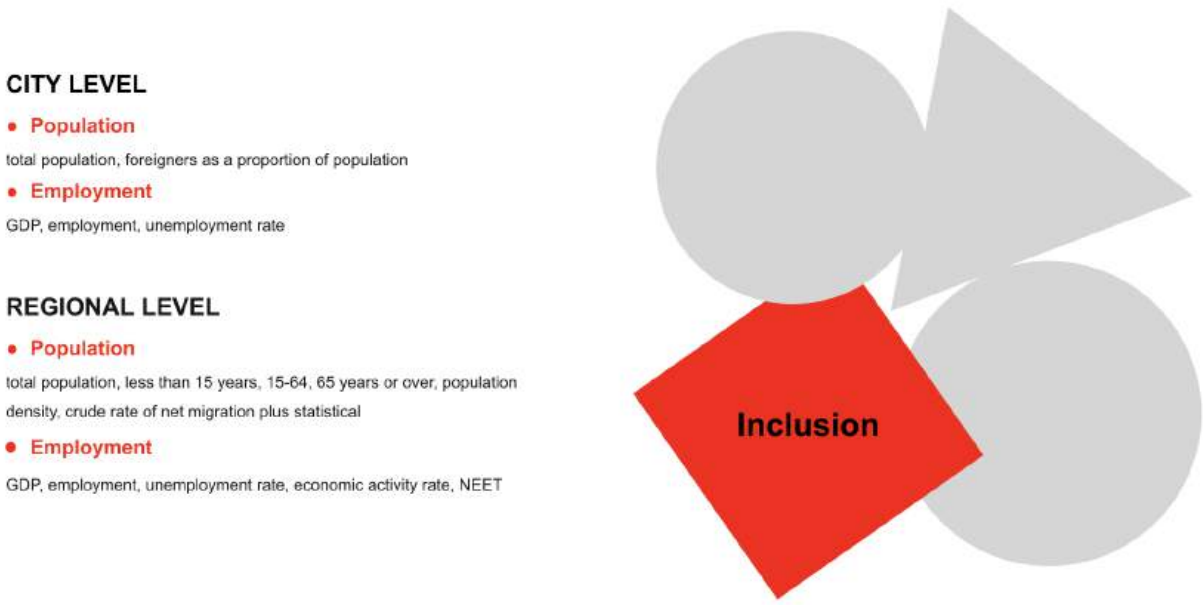

Figure 9. Inclusion parameters

Cultural parameters

The second pillar analysed is Culture. It responds to the Aesthetic principle of The New European Bauhaus, the one concerning beauty. A concept that in our case has been translated according to the Dutch word *"schooneid"*, which stands for the combination of Poetry and Functionality. Cultural parameters include Education, Work, and Human Capital. Concerning Education, an interesting parameter has been found among European countries, which is the number of people between 25 and 64 years old having ISCED level 5,6,7 or 8 as the highest level of education, from 2014 onwards. This is significant also considering the employment rate seen before, as the level of education of the majority of the population has, without a doubt, consequences on the performance and the livelihood of a specific area.

The second element belonging to education is the number of creative and knowledge-based jobs available in the territory. A piece of information that is important to understand is the level of cross-pollination and multidisciplinarity across the community. Human Capital is strictly related to the educational aspect, apart from the fact that it includes all the people living in the community, not only some segments as the one analysed for education. It reflects the amount of skilled and educated people participating in the economic and social life of a city in relation to the total amount of citizens.

Figure 10. Cultural parameters

Sustainability parameters

Sustainability is undoubtfully the buzzword for any attempt at the urban regeneration process, be it thought for a coastal area or an inner city. The New European Bauhaus considers it as one of its three pillars, as it is related to the coexistence of the human and non-human actors of territory – a concept further analysed by the Zoöp principles.

Within an urban regeneration project and its replication strategy, sustainability represents an important parameter to determine how human intervention can protect and safeguard the environment. For this reason, the two fields taken into consideration are Human Impact on Environment and Mobility. The former analyses the PM2.5 annual mean concentration, therefore the consequences in terms of human activity emissions in the environment[6]. The latter is a metric for determining the number of registered cars per 1000 population as a cause of urban pollution. In a future-oriented perspective, this data could also be related to the introduction and utilization of shared and sustainable forms of transport.

As for the previous indicators, this is just an initial illustrative selection of data to be monitored. They are not binding parameters to respect but just examples are taken from European databases in this first phase of exploration of each Pilot. With the continuing development of the project, parameters will be clearer for each Pilot, based on its specific context, and therefore leaving the selection open would benefit the choice from the Sea Forum or the Speaker for the leaving of each Pilot.

Figure 11. Sustainability parameters

[6] European Environment Agency

Governance parameters

The fourth and last parameter concerns the Governance aspect of urban regeneration processes and their replication. The importance of the pillars analysed before requires a strong administration and leadership body that takes the responsibility of carrying on a regenerative project. The identification of the right profile of a similar body is yet to be found, and one of the objectives of this work package (WP4) is to better understand who the players are in the co-design thinking approach that should take charge of these projects and how they should collaborate and behave – something that we will discuss later in the document. As far as the territorial kit is concerned, governance parameters divide into Society and Institutions fields of investigation[7]. Society is related to the cultural participation of the community in the life of the city, and therefore with the capability of the government to make the city attractive for people inside and outside the area. Institutions instead have more to do with the quality of the governance, so the level of performance it shows, its adaptability to changes, its empathy toward the community and its ability to favour a co-design approach to deal with challenges.

[7] JRC European Commission

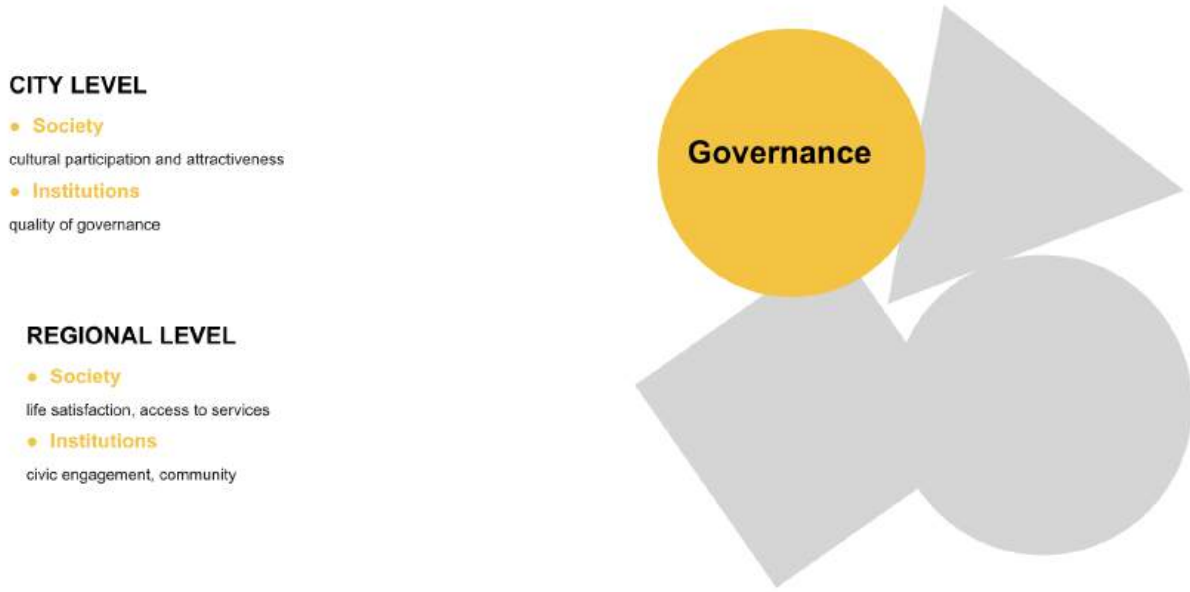

Figure 12. Governance parameters

In conclusion, the territorial identity card is a powerful tool for comprehending the distinct identity and requirements of a metropolitan area. This tool provides a comprehensive overview of the community's challenges and opportunities by capturing data on the community's key geographical features, local stakeholders, leading sectors, and relevant projects. This information can be used to design effective policies and programs that promote governance, culture, inclusion, and sustainability, thereby ensuring a high quality of life in the present and the community's continued vitality for future generations.

5.4. Design Thinking approach

Replicating successful urban regeneration processes is a difficult task that requires a transparent, adaptable methodology. The use of design thinking to map the areas, involve people, generate ideas, prototype solutions, and evaluate results has shown great promise. This methodology is implemented

using a co-design approach that involves multiple actors within a territory (co-Design Thinking), following the path paved by WP2 work, ensuring that the resulting solutions are tailored to the community's needs and aspirations.

Design thinking is an approach to problem-solving that emphasizes empathy, creativity, and experimentation. It fosters the participation of community members, local authorities, and other stakeholders in the design and implementation of urban regeneration projects through a collaborative and iterative process, and for this reason, it could be added to the co-design approach as a further layer to have more precise guidelines on how to carry on regenerative processes. It is a methodology for managing individual-centred innovation, which takes inspiration from the typical tools of designers integrating them with the possibilities provided by technologies to achieve economically sustainable successful solutions.

Design Thinking is based on the coexistence and mutual influence of three pillars that merged together to foster innovation, respectively people's needs, technological opportunities and economic sustainability.

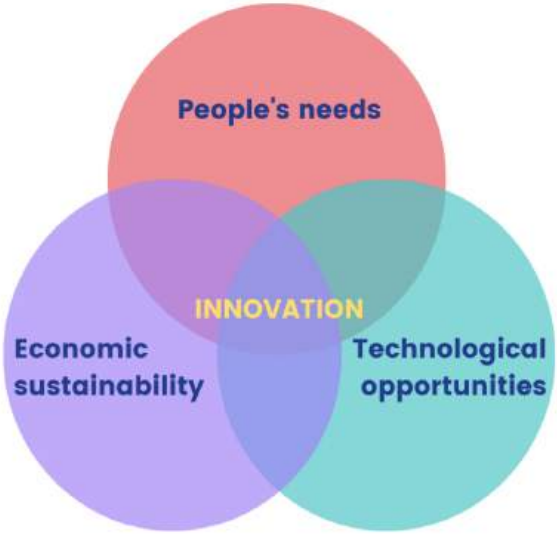

Figure 13. Three pillars of Design Thinking

This method can be used to map the urban areas in need of revitalization and to identify the most significant challenges facing the community. Once the areas and challenges have been identified, design thinking can be used to engage individuals in the process of ideation. This strategy emphasizes co-creation and collaboration to ensure that the resulting solutions are tailored to the community's specific needs and aspirations. The design thinking methodology also emphasizes prototyping solutions, allowing stakeholders to test the viability of various ideas through experimentation. This strategy is particularly effective in the early stages of the design process because it allows stakeholders to explore a variety of potential solutions and identify the most promising ones.

The design thinking methodology concludes with an evaluation of the project's results to ensure that the implemented solutions achieved the desired outcomes and had a positive impact on the community. This evaluation process is crucial to the success of urban regeneration projects because it provides stakeholders with a feedback loop that enables them to refine their approach and improve the results of future projects.

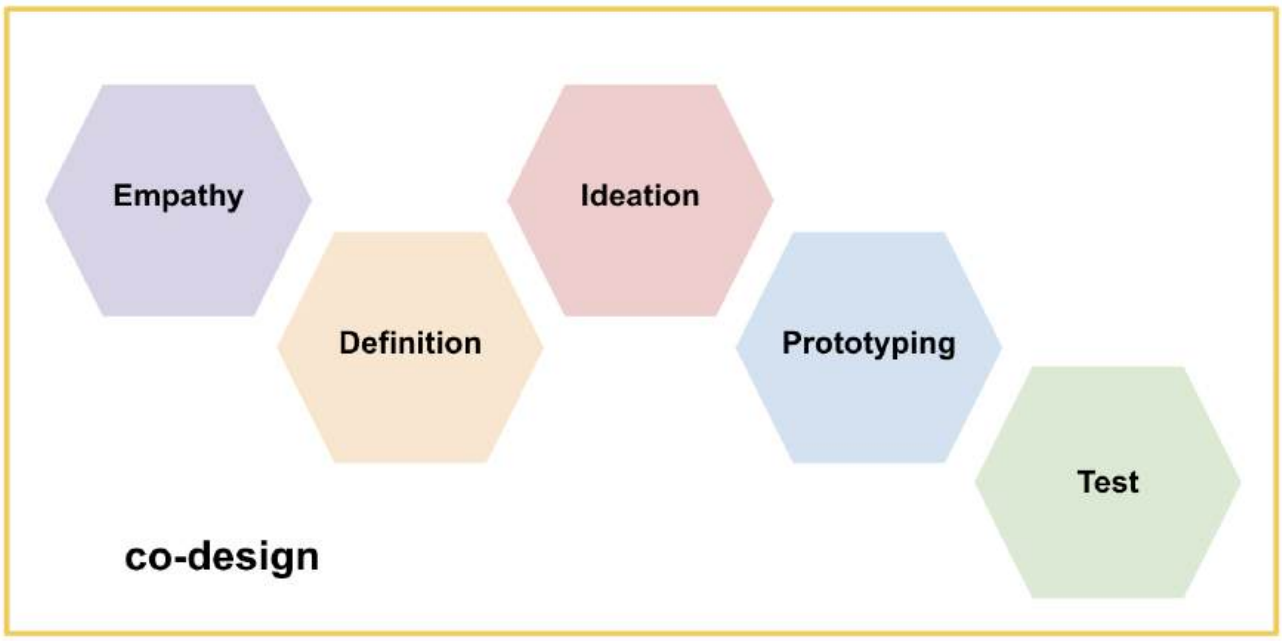

Figure 14. Stages of co-Design Thinking approach

A second step carried out in the formulation of this methodology concerns more directly the actors, the stakeholders involved in a regenerative process. As mentioned before, a cornerstone of this approach is the concept of co-design at the base of any possible intervention. The co-design must be open to every human and (representatives of) non-human beings participating in the life of the city; therefore, all these players must be an active part of the process. To have a clearer idea on who these actors are, we outlined a list of the stakeholder groups potentially involved in a co-Design Thinking process.

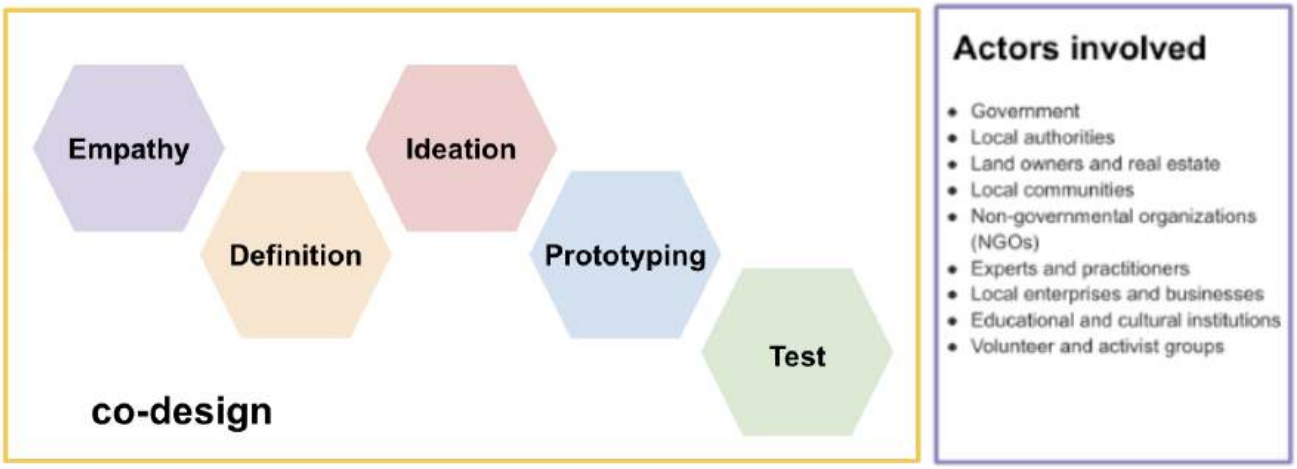

Figure 15. Actors involved in co-Design Thinking process

From a very practical point of view, the methodology presented is meant to give clear steps and guidelines to carry out the Drops related to each Pilot, taking into account the differences and peculiarities of each context.

The five phases can provide tools useful to include different stakeholders in the process, from a co-design perspective. Of course, the number and typology of tools is potentially infinite, every city could need a particular set of them. Therefore, we focused on an initial selection of a few key tools that must be part of the process, to respect the point of view of human and non-human actors.

Empathy

The first phase is the Empathy one, which concerns the analysis of the territory (including nature) and the people who live there. Empathy is the foundation of effective design thinking methods. In the context of the Bauhaus of the Seas Sails replication strategy, it is essential to empathize with the solution's end users in order to develop projects that are meaningful, inclusive, and context specific. By embracing empathy as a fundamental step, we can gain invaluable insights, challenge

assumptions, and design regenerative projects that are truly tailored to the needs, aspirations and lived experiences of the communities we intend to serve.

The key tools identified in this phase have to do with the observation and interviewing process. Consider a fictitious coastal city, "Seasideville," that intends to replicate a successful regeneration project from another coastal region. Before beginning the replication process, the city decides to conduct a comprehensive empathy-driven test to understand the perspectives of the end users and ensure an approach that best fits its context.

Users Observation: The Pilot team begins by immersing themselves in the daily activities of the Seasideville coastal community. They observe and record how individuals interact with the coastal environment, taking note of activities, routines, and obstacles. By observing user actions closely, the team gains insight into the specific needs, behaviours, and patterns that influence the design of the project.

Territory Exploration: To gain a deeper comprehension of the local context, the team investigates the physical and social aspects of Seasideville. They investigate the community's distinctive coastal characteristics, cultural heritage, economic activities, and social dynamics. This investigation helps to identify opportunities and limitations, informing the replication process and guiding the localization of the solution.

Users identification: before proceeding to the next step of interviews, it is necessary to divide the population into extreme and mainstream users. Mainstream users refer to the average type of population in that particular territory, while extreme users refer to those few particular exceptions, which could be related to a different need in the accessibility of places, or in different ways of living in the city based on cultural aspects.

Extreme Users Interviews: The team conducts interviews with extreme users, individuals who represent the community's fringes. These users may include fishermen, environmental activists, or marginalized groups with needs or points of view. By conducting interviews and actively listening to interviewees' experiences, aspirations, and obstacles, the team gains valuable insights that might

have been overlooked or underrepresented. This ensures that the process of replication addresses the diverse needs and concerns of all community members, even non-human members.

Mainstream Users Interviews: Using the insights gained from extreme user interviews, the team conducts interviews with mainstream users, who represent the larger community. Residents, local business owners, community leaders, and other stakeholders are interviewed. These interviews, both qualitative and quantitative, explore the preferences, expectations, and desires of most users to ensure that the replicated solution resonates with the majority and promotes widespread acceptance and support.

Finally, the team analyses and synthesizes the collected data in light of the observations, territory exploration, and user interviews. They identify common patterns, themes, and pain points and extract meaningful insights that inform the design thinking process's subsequent phases. This analysis lays the groundwork for ideation, prototyping, and iterative testing of the regenerative project to ensure that it meets the needs and aspirations of the community.

Definition

The Bauhaus of the Seas Sails project relies heavily on the phase of design thinking known as "definition." The tool at the centre of this phase is the definition of user personas. This process is essential for understanding the goals and motivations of the individuals involved in the replication process, given the insights gained during the empathy phase. The definition could be a phase where to also include the Sea Forum, the Ocean Ambassadors and the Speaker for the Living, in order to decide together the direction to follow from that point onward.

From an operational point of view, building on the previous example, the team conducts a comprehensive review of the analysis and synthesis performed during the empathy phase. They review the observations, findings from the territory exploration, and user interview insights. This

review refreshes their knowledge of the community's requirements, pain points, aspirations, and obstacles.

On the basis of the analysis review, the team begins to develop stakeholder groups,, which are fictitious representations of various community users or user groups. Regarding the regenerative project, each persona is characterized by its objectives, motivations, preferences, and behaviours. The Pilot team creates distinct personas that reflect the diversity of stakeholders, ensuring that the entire community is represented.

The team creates detailed profiles for each persona thanks to the information received during the interviews, including demographic information, goals, objectives, challenges, and key characteristics. These profiles bring the personas to life, allowing the team to better comprehend the replication process's specific objectives and desired outcomes. The profiles may include personas such as a local fisherman concerned with sustainability, a young entrepreneur enamoured with coastal aesthetics, or a community leader committed to inclusiveness.

The team verifies the developed personas by soliciting feedback and input from stakeholders, such as members of the community and domain experts, Sea Forum and Ocean Ambassadors. This validation procedure ensures that the personas reflect the goals and motivations of the community's actual members.

With the personas in place, the team reunites in a workshop or focus group with all the members involved to examine each persona's defined objectives and identifies commonalities and potential conflicts. This exercise ensures that the replication process is designed to meet the diverse expectations of different stakeholders by aligning the project's objectives with the community's needs and aspirations.

Incorporating the specific needs and desires of the identified personas, the team revises and refines the project's objectives based on the persona analysis and alignment exercise. This step serves as a framework for the subsequent phases of the design thinking process by ensuring that the objectives are realistic, attainable, and impactful.

Ideation

The exciting phase of the design thinking methodology is the ideation phase, where diverse perspectives and creativity converge to generate innovative solutions. The goal is to foster a dynamic and inclusive environment that generates new ideas and culminates in a selection of the best concepts that align with the needs identified in earlier phases.

Brainstorming Session Setup: The team organizes a brainstorming session that promotes open communication, fosters creativity, and guarantees equal participation. Brainstorming is meant to be made in person, but digital tools are available too, such as Miro or Mural. Organizers foster a positive and collaborative atmosphere by providing materials such as sticky notes, whiteboards, and markers and facilitating ice-breaker activities.

Idea Generation: Participants are encouraged to share their ideas and observations regarding the replication procedure. Encouraged by a non-judgmental environment, all ideas, regardless of how wild or unconventional, are welcome. The emphasis is on quantity and variety, enabling participants to build upon one another's ideas and generate new concepts.

Idea Clustering and Categorization: After the brainstorming session, the team clusters and categorizes the generated ideas according to their similarities and themes. This procedure aids in the identification of overarching concepts and areas of concentration within the replication procedure, ensuring that the selected ideas address the specified needs and objectives.

Idea Selection: Using the defined needs and objectives as a guide, the team evaluates the clustered concepts and selects the most promising and practicable concepts. When making the final decision, they consider sustainability, inclusivity, aesthetics, and scalability. The selected ideas should align with the aspirations of the community while addressing the challenges identified in earlier phases.

The selected ideas are further developed into concrete concepts by outlining their key characteristics, potential consequences, and implementation strategies. The team collaborates to refine and iterate the selected concepts, ensuring their viability and compatibility with the project's overarching vision.

Prototyping

Once the winning concepts have been chosen, it is time to begin prototyping. One factor to consider is the level of realism, which can be low, medium, or high in comparison to reality. Second, one can choose between analogue and digital prototyping. The goal is to create tangible representations of regenerative projects that accurately capture the envisioned solutions and allow for further refinement and feedback.

As a first step, the Pilot team considers the fidelity level appropriate for the prototypes. Quick and inexpensive, low-fidelity prototypes provide a basic representation of the concept. Prototypes with a medium level of detail and functionality closely resemble the final product. High-fidelity prototypes are interactive and highly realistic, simulating the actual user experience. The team evaluates the project's requirements and goals to determine the optimal fidelity level.

The team assesses the advantages and disadvantages of analogue and digital prototyping techniques. In analogue prototyping, cardboard, paper, or modelling clay are utilized to create tangible representations. Digital prototyping simulates interactions and functionality using software tools. To determine the most appropriate method, the team considers cost, speed, adaptability, and feedback requirements.

As mentioned before, the team can choose the right way to prototype from three options:

If the team opts for low-fidelity analogue prototypes, they create crude, inexpensive, and quick models with readily available materials. The purpose of these prototypes is to test fundamental functionalities, collect feedback, and refine the concept without investing substantial resources.

If the team decides on medium-fidelity digital prototypes, they create simulations or wireframes that closely resemble the final solution using software tools. These prototypes provide a more accurate depiction of the project, allowing users to navigate the experience and provide valuable feedback for future iterations.

If instead, the team opts for high-fidelity hybrid prototypes, they combine analogue and digital components to create representations that are immersive and realistic. This method provides a realistic user experience by simulating key functionalities and interactions to collect extensive feedback and further develop the concept.

Throughout the prototyping phase, the team solicits feedback from stakeholders, end users, and subject matter experts. They conduct user tests, interviews, and observations to determine the product's strengths, weaknesses, and improvement opportunities. This iterative process enables the prototypes to be continuously refined and iterated based on user feedback.

Testing

The final stage of the presented methodology concerns the test of the solution proposed. In this phase, the solution is presented to the public to assess its usefulness and observe how people interact with it. This provides the opportunity to receive feedback and make necessary adjustments. By engaging with the public, the project team can ensure that the implemented solution meets the needs and expectations of the community.

The Pilot team organizes a public event or exhibition to showcase the implemented regenerative solution. This may include demonstrations, visual presentations, interactive displays, or any other suitable method of effectively communicating the features and benefits of the solution.

As the public interacts with the solution, the team engages with users actively, encouraging them to explore and provide feedback. Observations are made regarding how individuals interact with the solution, their level of engagement, and any potential obstacles. This real-time feedback and observation aid in identifying improvement opportunities and possible enhancements.

The team conducts user surveys and interviews to collect more comprehensive feedback. Participants can be surveyed to collect their overall impressions, levels of satisfaction, and suggestions for improvement. The team can gain a deeper understanding of specific aspects of the solution through in-depth conversations with a subset of the solution's users.

The team collects and analyses both quantitative and qualitative feedback from user surveys, interviews, and observations. They synthesize the feedback to identify recurring themes, successful areas, and improvement areas. This analysis provides a basis for making informed decisions regarding the solution's refinement.

Using the insights gained during the testing phase, the team refines and enhances the implemented solution in an iterative manner. They weigh the feedback received from the public against the project's predetermined needs and objectives. The solution is made more effective, user-friendly, and in line with community expectations through iterative refinement.

The testing phase establishes a continuous feedback loop, allowing the team to refine and improve the solution even after its initial implementation. By maintaining contact with the public and incorporating their feedback, the team ensures that the solution remains adaptable to changing requirements and can be continuously enhanced over time.

5.5. Model cyclicity: the importance of iterative loops

The uniqueness of each city and the complexity of the challenges they face may necessitate iterative loops within the process, despite the linear appearance of the presented replication model. Design Thinking, as a flexible and iterative methodology, allows for feedback and adaptation based on the community and Sea Forum's insights.

The phases of the replication model proposed for the "Bauhaus of the Seas Sails" project are empathy, definition, ideation, prototyping, and test. Nonetheless, it is essential to recognize that the context of each city in the real world may introduce variations and challenges that necessitate iterations and adjustments along the way.

With its iterative nature, Design Thinking provides a framework that enables teams to learn from feedback and adapt their solutions accordingly. It recognizes that the initial understanding of the problem and proposed solutions may not completely align with the needs and expectations of the

community. Consequently, incorporating loops into the model enables continuous learning and improvement.

The Sea Forum, as a representative body of the greater community, plays a crucial role in providing insightful feedback and perspectives. To assess the efficacy and applicability of the solutions, it is essential to collect feedback from community members and stakeholders during the testing phase. Feedback from the Sea Forum and the community may reveal unanticipated obstacles, unmet needs, or opportunities for further improvement.

In response to the received feedback, the replication model incorporates iteration. It permits teams to revisit earlier phases, such as empathy and ideation, to reframe problem statements, generate new ideas, or refine existing ones. This iterative approach fosters a continuous feedback loop that ensures the solutions continue to be responsive to the changing context and community needs.

Design Thinking's adaptability enables project teams to navigate the complexities and uncertainties that arise during the replication process. It promotes an attitude of experimentation, learning, and adjustment. By embracing feedback and iteration, cities can address gaps, make course corrections, and implement solutions that are more effective and tailored to their specific contexts.

The replication model's loops are viewed not as setbacks or failures, but as opportunities for growth and improvement. They provide the means to incorporate community voices and Sea Forum insights, making the replication process more inclusive, responsive, and effective.

In conclusion, the replication model recognizes the potential need for loops and iterations, allowing teams to revisit and revise their understanding, ideas, and solutions in response to feedback from the community and the Sea Forum. This iterative approach, which is inherent to Design Thinking, ensures that the solutions developed for the "Bauhaus of the Seas Sails" project are continuously refined, aligned with the needs of each city, and capable of addressing the unique challenges faced by each city.

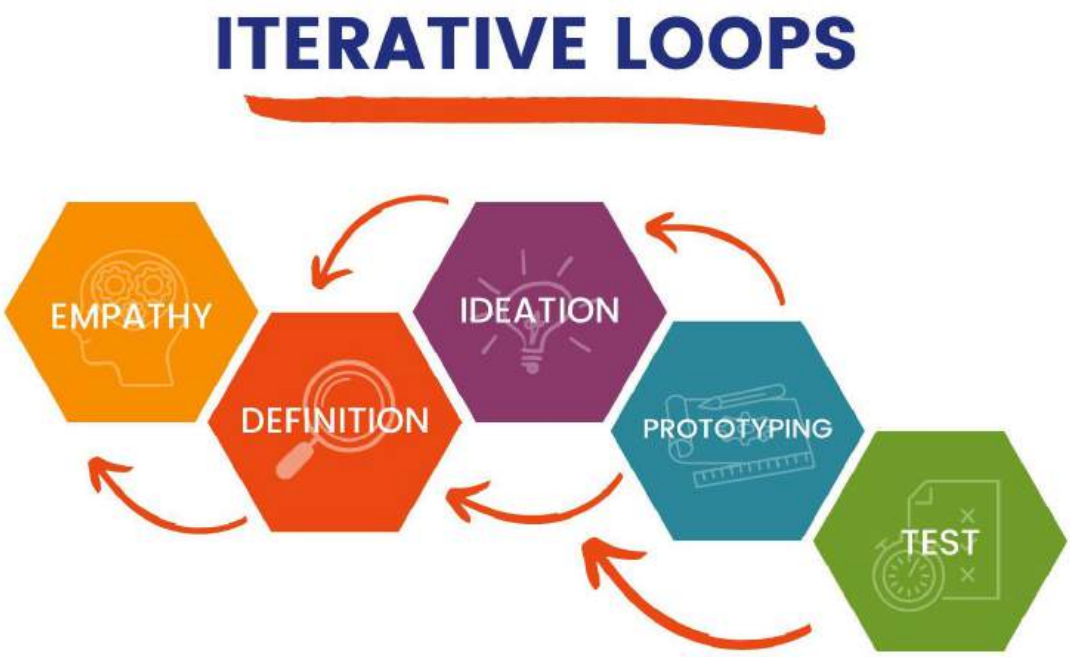

Figure 16. Replication methodology loops

6. Defining leadership for regenerative processes

6.1. Key features of the right leader

The success of any urban regeneration process is highly dependent on the leadership of the individual or group advancing the project. To successfully replicate regeneration processes, it is necessary to

identify the personality traits that enable a leader to navigate the complexities of such a project[8]. Particularly, empathy, a focus on the future, collaboration, and adaptability are essential qualities that every leader must possess. Perhaps the most essential characteristic for a leader in an urban revitalization process is empathy.

To ensure that the resulting solutions are tailored to the community's specific needs, it is essential to comprehend and connect with its needs and aspirations. This requires a thorough understanding of the community's history, culture, and traditions, as well as a willingness to listen to and learn from all community members' voices. Another essential characteristic of a leader in an urban regeneration process is a focus on the future. Effective leaders must be able to envision a better future for the community and devise strategies and solutions that move the community in the direction of that vision[9].

In pursuit of a brighter future, this requires a willingness to take risks, experiment with new ideas, and embrace change. Collaboration is also crucial for a leader in an urban revitalization effort. Effective leaders must be able to collaborate with a variety of stakeholders to develop and implement solutions to the complex challenges facing contemporary cities. This requires excellent communication skills, the ability to establish trust and rapport with others, and a dedication to finding common ground. Finally, adaptability is essential for a leader in the urban revitalization process[10].

The ability to adjust plans and strategies in response to new information and to learn from mistakes is crucial for the success of any urban regeneration project. This requires a willingness to experiment, try out new methods, and be receptive to feedback and criticism. In conclusion, the ideal characteristics for a leader in an urban regeneration process are empathy, a focus on the future, collaboration, and adaptability. These essential characteristics enable leaders to comprehend the specific needs and aspirations of the community, to envision a better future, to collaborate with

[8] Forbes, *"5 Attributes (And Benefits) Of Values-Based Leadership"*, 2021
[9] Centre for Creative Leadership, *"The 10 Characteristics of a Good Leader"*, 2023
[10] Indeed, *"10 Key Leadership Behaviors for Effective Leaders"*, 2023

others, and adapt to changing circumstances in pursuit of their objectives. With the right leadership in place, urban regeneration projects can be replicated successfully in communities across the globe, resulting in sustainable, inclusive, and resilient cities that meet the needs of all their residents. Following our methodology framework, the skills and mindsets of the right leader can be divided into the five stages outlined, to show how each phase requires a specific set of behavioural features that must be personified by the leader or leaders of a replication process.

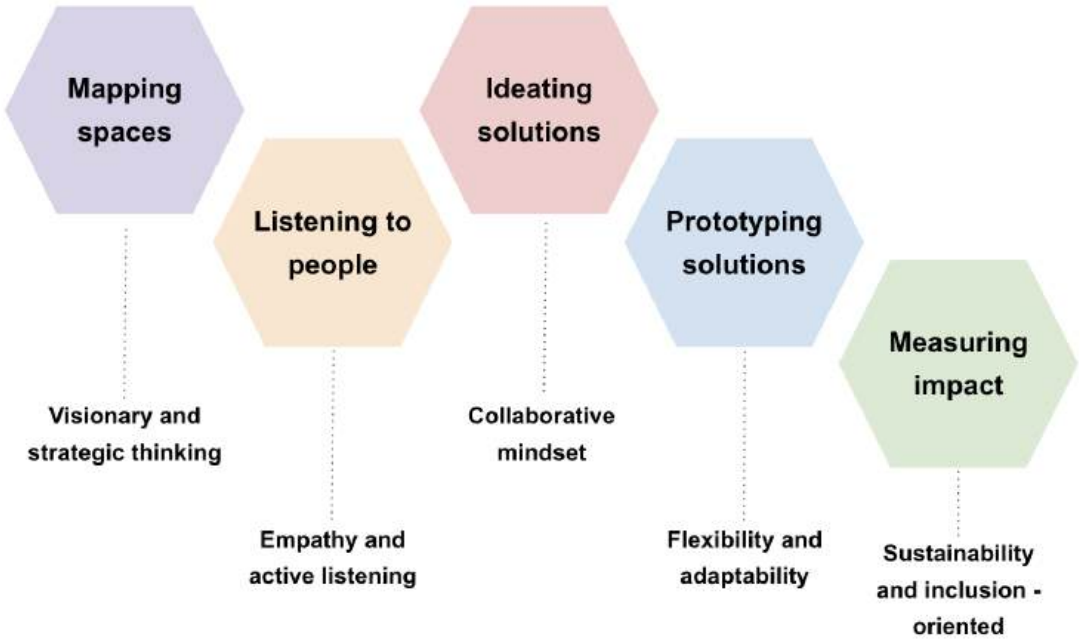

Figure 17. Features required for leaders

6.2. Leading non-human beings: a Zoöp based approach

The current Bauhaus of the Seas Sails replication manual has provided a series of guidelines on how to carry out regenerative processes in the Pilots involved, according to the features of each context

and the actors involved. The role of Sea Forum has been addressed, as well as the engagement of the whole community. Nonetheless, there still is a factor which has not been considered.

The Bauhaus of the Seas Sails' replication strategy builds on the Zoöp principle, which highlights the significance of considering the perspective of nature and non-human beings in regenerative processes, with the intention of protecting and giving a voice to those entities that are frequently unheard. Recognizing the intrinsic value of nature and the interdependence of all living things, the Zoöp principle seeks to incorporate their needs and well-being into project decisions and implementation.

In the context of the Bauhaus of the Seas Sails project, each participating city appoints a Speaker for the Living, who plays a crucial role in ensuring that the voice of non-human beings is not only acknowledged, but also actively considered in the project's development. The Speaker for the Living is a champion for nature, advocating for its preservation and coexistence in coastal regions. In a collaborative perspective as the one promoted by the Bauhaus of the Seas Sails, the Speaker for the Living will therefore reinforce the role of the Ocean Ambassador and the Sea Forum. For the same reason the role of the Speaker for the Living might be enlarged to other participants rather than fostering an individual participation, creating a sort of group of Zoöp representatives.

By incorporating the Zoöp principle, cities in Bauhaus of the Seas Sails can realize numerous advantages. First, it promotes a more holistic and inclusive approach to sustainability by recognizing the intrinsic value of nature and non-human beings as coastal ecosystem stakeholders. It facilitates a broader comprehension of the impact of human activities on the environment and encourages the development of environmentally conscious solutions.

Incorporating the Zoöp principle also fosters biodiversity, maintains ecological equilibrium, and promotes the overall health of coastal regions. Cities can develop regenerative projects that respect the natural environment and foster long-term ecological sustainability by listening to and considering the needs of non-human beings. An important criterion to mention here is that these representatives need to have local environmental knowledge.

The Zoöp principle aligns with the project's goal of implementing inclusive, sustainable (in all its three meanings) and aesthetically pleasing regeneration solutions. The Bauhaus of the Seas Sails cities can ensure that the perspectives and interests of non-human beings are adequately represented by actively involving the Speaker for the living in project discussions and decision-making processes. This partnership between the Speaker for the Living, the Sea Forum, and other city-based actors promotes a comprehensive and multidimensional approach, considering the diverse stakeholders involved.

Ultimately, the ethical and ecological dimensions of the Bauhaus of the Seas Sails project are enhanced by the Zoöp principle. It recognizes the importance of protecting and respecting the natural environment and non-human beings along the European coastlines while pursuing sustainable development and regeneration. By adhering to the Zoöp principle, the project can aim for a more harmonious and balanced relationship among humans, nature, and the larger ecosystem.

7. Technologies for replication

7.1. Monitorization Technology

Technology plays a crucial role in the replication of urban regeneration projects by providing a variety of tools and platforms that allow communities and organizations to collect, share, and analyse data in real time[11]. Specifically, platforms and apps for mapping the territory and data collection are essential tools for ensuring the success of replication initiatives. Critical to the replication of urban regeneration projects, mapping applications enable community members and stakeholders to collect and share information regarding their local environment, infrastructure, and social dynamics. Using these applications, communities can map the physical and social characteristics of their area, identify areas of strength and weakness, and create strategies to enhance the overall quality of life. These mapping applications can also be used to identify and track key stakeholders, such as local

[11] European Commission, *"Reconquering public spaces by interlinking design, inclusion, and sustainability"*, 2021

businesses, community organizations, and government agencies, making it easier to collaborate and form partnerships based on shared objectives. The collection of data is another crucial aspect of urban regeneration replication efforts.

By collecting data on key indicators such as employment rates, crime rates, and housing prices, communities and organizations can gain a better understanding of the challenges facing their region and develop targeted solutions to address specific problems. Technology platforms and applications make it simple to collect, store, and analyse data, thereby facilitating the identification of trends, monitoring of progress, and real-time adjustment of strategies.

Overall, it is difficult to overestimate the relevance of technology in the replication of urban revitalization projects. From applications that map communities in identifying key stakeholders and areas of need, to data collection tools that enable targeted solutions to challenges, technology is essential to the success of urban regeneration projects. As replication efforts continue to expand and evolve, it is likely that technology will play an even larger role, providing new and innovative tools that enable communities and organizations to construct sustainable, inclusive, and resilient cities for all residents.

One example of technologies used to monitor, map, and collect data about a certain area is the WeGlad case study. In particular, WeGlad is a mobile app developed to fight the problem of architectural barriers inside a city, to guarantee all citizens' inclusion, accessibility and safety. It allows users to spot architectural barriers in public places and share them with the community so that everyone has a real-time overview of the best route to follow. This is one of the many cases perfect to explain how technologies could be used for the well-being of the entire society and policymakers to take proper actions toward sustainability, inclusion and beauty.

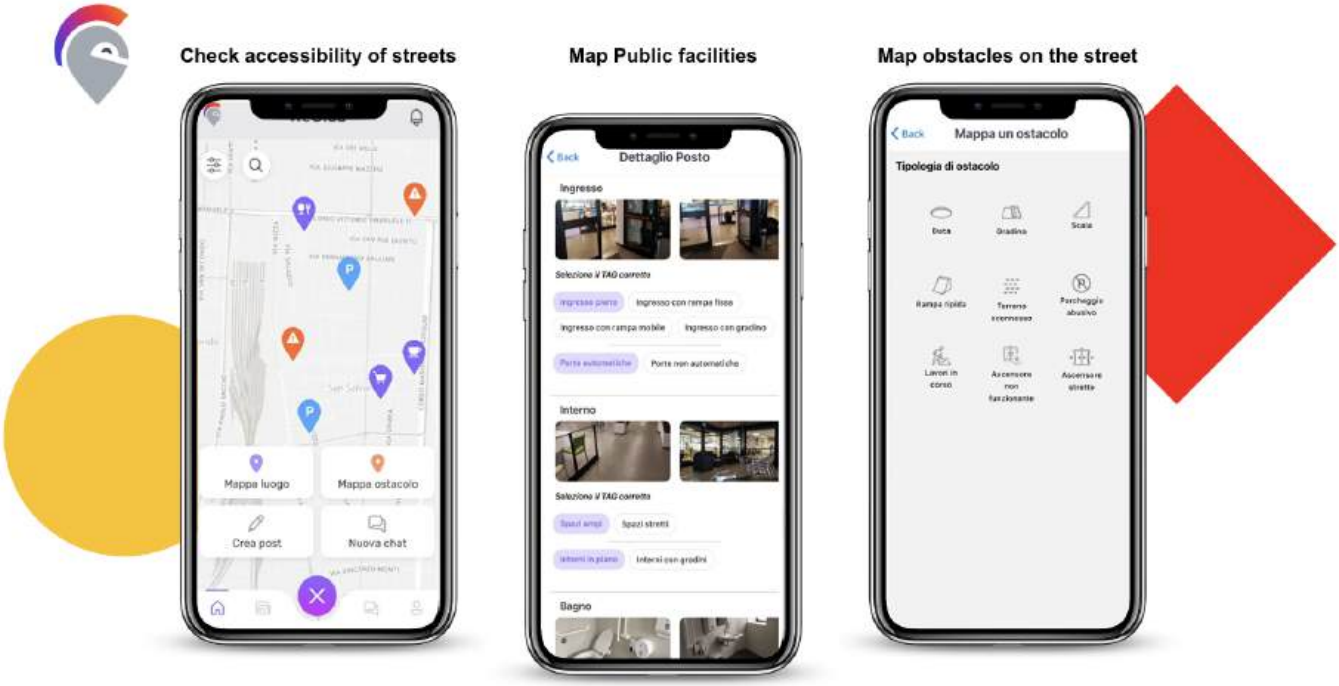

Figure 18. WeGlad case study

7.2. How knowledge will be shared

In a project such as Bauhaus of the Seas Sails knowledge sharing is essential for fostering collaboration, fostering innovation, and ensuring the successful replication of solutions. Participating parties include stakeholders, specialists, community members, and project teams, all actors that need to be integrated together. In addition, technologies can be utilized to improve the efficacy and efficiency of knowledge-sharing procedures. Sharing knowledge can be fostered in several ways, here we propose some methods to this aim.

Collaborative Platforms: Utilize online collaborative platforms, such as project management tools, shared document repositories, and communication channels, to facilitate the exchange of knowledge between project teams, stakeholders, and subject matter experts. These platforms can facilitate real-

time collaboration, file sharing, discussions, and access to pertinent project information, thereby promoting transparency and facilitating effective communication.

Workshops and Conferences: Organize workshops, conferences, and seminars where stakeholders, experts, and community members can share information, experiences, and best practices. These events provide opportunities for in-depth discussions, networking, and the cross-pollination of ideas, fostering a culture of learning and innovation by encouraging active participation.

Community Engagement: Utilize interactive workshops, focus groups, and public consultations to emphasize community engagement. This enables community members to share their local knowledge, perspectives, and aspirations, contributing to a more inclusive and contextually relevant body of knowledge. Engaging community members as co-creators and active participants in the knowledge-sharing process fosters a sense of ownership and ensures that solutions are tailored to meet their specific requirements.

Expertise and Experience Sharing: Facilitate the sharing of knowledge between experts and stakeholders by organizing expert panels, webinars, and knowledge-sharing sessions. Experts can share their specialized knowledge, research findings, and lessons learned from similar projects, providing project teams and stakeholders with valuable insights and direction. This exchange of knowledge enhances the collective body of knowledge and promotes ongoing education.

Digital Tools: Utilize digital technologies such as online forums, social media platforms, and web-based collaboration tools to expand the reach of knowledge sharing initiatives. These tools facilitate asynchronous communication, enabling participants to contribute and access information at their convenience. Online communities and forums provide spaces for ongoing discussions, question-and-answer sessions, and resource sharing, thereby creating a virtual hub for the exchange of knowledge.

Documentation and Case Studies: Create and distribute project documentation, reports, and case studies that capture the project's insights, methodologies, and results. These resources serve as valuable references for future replication efforts, allowing other cities and communities to learn from

the project's accomplishments and difficulties. The documentation may be disseminated via online platforms, project websites, or printed copies distributed at workshops and conferences.

Demonstrations and Showcases: Conduct on-site demonstrations, showcases, and exhibitions so that stakeholders, policymakers, and the general public can directly observe and learn about the implemented solutions. These demonstrations provide interactive experiences and visual representations, making complex concepts more accessible and fostering a deeper comprehension of the project's goals and accomplishments.

By combining these knowledge-sharing approaches and leveraging appropriate technologies, the Bauhaus of the Seas Sails project can establish a robust and inclusive knowledge-sharing ecosystem. This ecosystem enables the exchange of expertise, experiences, and best practices, facilitating the replication of sustainable and regenerative solutions across European coastal areas.

7.3. Managing feedback across work packages

As anticipated above, a collaborative and iterative approach is required to ensure effective feedback from different work packages (WP) during the implementation of projects by each Pilot city. As for the sharing of knowledge, feedback exchange could happen in many ways.

Creating channels dedicated to communication and collaboration between the various WPs could be effective in establishing regular exchanges. This may involve routine meetings, email updates, shared document repositories, and collaborative project management tools. These channels facilitate the exchange of information, updates on progress, and feedback among WPs.

Cross-WP workshops and reviews could be a further possibility. These sessions may be designed to provide project updates, facilitate the exchange of ideas, and solicit feedback from each WP. It enables stakeholders to comprehend the progress, difficulties, and successes of other WPs, fostering the cross-pollination of ideas and knowledge.

Similar to the previous solution is the creation of cross-WP working groups with members from multiple WPs. These groups can meet regularly to discuss and address specific issues or challenges

that necessitate cross-work-package collaboration. By collaborating, the groups can identify areas for improvement, share their expertise, and offer feedback based on their individual perspectives.

With no doubt feedback mechanisms must be integrated into the project structure and into each WP's project management processes. This may include regular checkpoints, milestone reviews, and evaluation sessions involving members of other WPs. By incorporating feedback loops into the project's framework, the city's implementation team can collect insights, identify areas for improvement, and make the necessary adjustments to ensure that all work packages are aligned with their respective goals and objectives.

In the future steps of the project, during years 2 and 3, it might be useful to utilize the activities conducted under WP5, which are centred on evaluating and measuring the impact of projects. The evaluation process can provide valuable feedback and insights regarding the efficacy, results, and potential for improvement of each project. Incorporating the results of the evaluation activities into the feedback loop would facilitate the implementation of future projects and to foster continuous improvement.

Sharing findings through communication and dissemination (WP6) would also ensure that the outcomes and progress of each WP are shared and communicated between Pilots. This facilitates knowledge sharing and transparency among the stakeholders involved in the various work packages. The dissemination efforts may include workshops, conferences, publications, and online platforms in order to reach a larger audience and collect feedback from project stakeholders.

As an external group offering opinions and contributions to the project, the Sea Forum can serve as a useful source of feedback. Engage members of the Sea Forum in project reviews, workshops, or focus groups to collect their perspectives on the implementation's progress, obstacles, and potential for improvement. Their diverse perspectives can enrich the feedback process and help identify any development gaps or opportunities.

By implementing these strategies, the Pilot cities will be able to facilitate a robust feedback process, ensuring that insights and lessons learned from various work packages inform and enrich the

implementation of projects. This collaborative approach promotes cross-pollination of ideas, goal alignment, and continuous improvement throughout the lifecycle of a project.

7.4. A geospatial platform for the replication strategy

The geospatial platform developed by Delta Pilot in WP5 is a valuable tool that enhances the comprehension and visualization of the areas of each city that are subject to activity. It offers a geographically based representation of the project's scope, enabling stakeholders to investigate and analyse the spatial context of the initiatives.

It can supplement and improve the dissemination of information in the context of the replication manual by enriching the previously proposed territorial identity card, to have a collective and shareable database for Pilots' initiatives. By integrating the geospatial platform with the replication guide, it is possible to provide an interactive and visual representation of the project's progress and impact across multiple cities.

Moreover, the geospatial platform can serve as a point of reference for stakeholders accessing the replication manual, enabling them to locate and navigate the specific areas of focus in each city with ease. This graphic aids readers in comprehending the geographical context and spatial distribution of the regenerative projects, thereby fostering a deeper comprehension of the replication strategies being implemented.

Additionally, the geospatial platform can be used to display the collected and analysed data for each city. By incorporating the concept of territorial identity cards into the geospatial platform, it is possible to create a comprehensive and centralized repository for the project's most vital data points. This includes environmental indicators, community demographics, infrastructure information, and other relevant datasets. The territorial identity card can serve as a concise summary of the key characteristics and data associated with each city, making the information more accessible and usable.

By leveraging the geospatial platform and integrating it with the territorial identity card, stakeholders can easily access and navigate the data, thereby gaining insights into the unique contexts and characteristics of each city. This enables them to make informed decisions, identify potential replication opportunities, and comprehend the relationship between specific aspects of regenerative projects and the unique characteristics of various cities.

In general, the geospatial platform provides a potent visual tool that enhances the replication manual by providing an interactive representation of the project's scope and development. By incorporating the concept of a territorial identity card, the platform becomes even more valuable, allowing stakeholders to access key data in an intuitive and easily accessible manner. These elements contribute to a comprehensive understanding of the project's replication strategies, fostering collaboration and facilitating the successful implementation of regenerative initiatives in diverse European coastal regions.

8. Governance, administration, and leadership

8.1. Three key roles: governance, administration, and leadership

Urban regeneration is a complex and multifaceted process that requires strong and effective administration, governance, and leadership. Although these three players may appear similar, they each play a unique role in the regeneration process, and it is essential to understand their contributions and how they can collaborate for the benefit of society[12]. Governance refers to the structures and processes used to make decisions and implement policies. Effective governance is necessary for urban revitalization because it provides the framework for collaboration and

[12] MDPI, Land, *"A Comprehensive Review of Urban Regeneration Governance for Developing Appropriate Governance Arrangements"*, 2021

coordination among various stakeholders, including government agencies, community organizations, and private sector partners. In addition to ensuring that resources are used efficiently and effectively, and that the needs of all stakeholders are considered, strong governance structures are essential. Transparency, accountability, and citizen participation are essential components of effective governance[13]. This implies that governance structures must be open and inclusive, allowing community members to have their voices heard and participate in the decision-making process. Effective governance also requires a commitment to accountability, with clear processes in place for monitoring and evaluating the performance of various stakeholders and for ensuring the use of resources in a responsible and ethical manner.

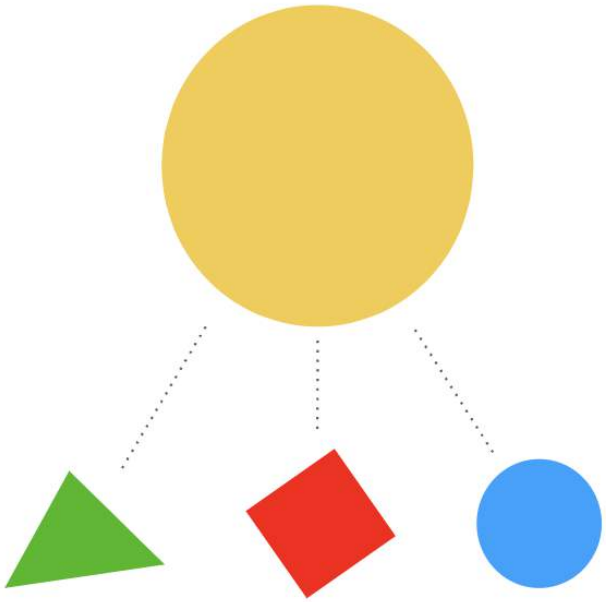

Figure 19: Relationship between Governance and the three pillars

[13] European Commission,"*Strategie di Sviluppo Urbano Sostenibile*", 2020

Administration is the administration and implementation of policies and programs. Effective administration is crucial for urban revitalization because it ensures that policies and programs are implemented in a timely and efficient manner and that resources are utilized efficiently. This requires strong management skills and a dedication to collaboration and coordination with various stakeholders. In contrast, leadership is the capacity to inspire and motivate others towards a common goal.

Urban regeneration requires effective leadership because it requires the ability to bring together diverse stakeholders, establish trust and rapport, and develop a shared vision for the future. In order to achieve the best outcomes for the community as a whole, effective leaders in urban regeneration must also be able to navigate complex political and social dynamics and to balance the needs of different stakeholders. Governance, administration, and leadership each play unique roles in urban regeneration, but they are interdependent and interconnected. Effective governance requires strong administration and leadership, as well as citizen and stakeholder engagement[14].

Effective administration requires well-defined policies and objectives, as well as the capacity to collaborate and communicate openly with a variety of stakeholders. And effective leadership requires an in-depth understanding of the community's needs and aspirations, as well as the capacity to work collaboratively and effectively with various stakeholders. Governance, administration, and leadership must work together in a coordinated and collaborative manner in order to achieve the best outcomes in urban regeneration. This requires a commitment to transparency, accountability, and citizen participation, as well as a shared vision for the future. It also requires a willingness to experiment, innovate, and learn from both successes and failures in order to continuously improve the urban regeneration process and create inclusive, resilient, and sustainable cities for all residents.

[14] European Journal of Operational Research, *"Managing community engagement: A process model for urban planning"*, 2017

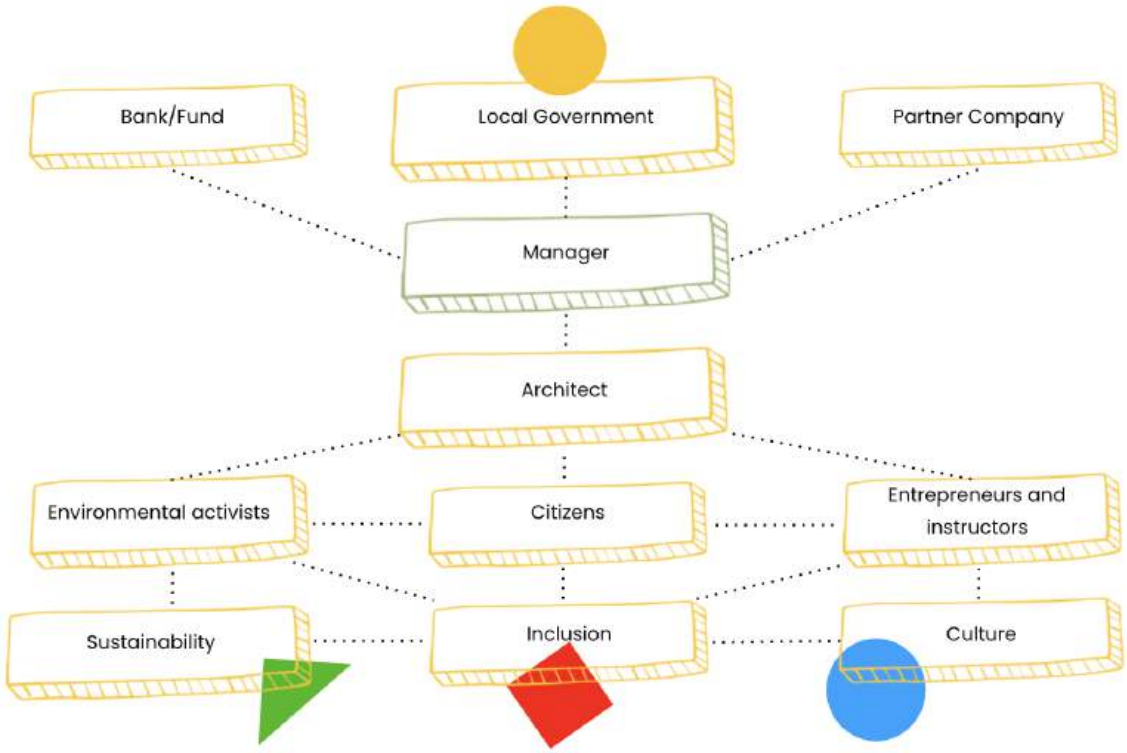

Figure 20. Governance structure in a co-Design Thinking approach

8.2. Cooperation for long-lasting relationships

In order to foster cooperation and collaboration in the implementation of the Bauhaus of the Seas Sails project, it is essential for European coastal cities to develop long-lasting relationships.

Promoting networking and partnerships among coastal cities will be fundamental. One way to achieve this could be by facilitating regular meetings, conferences, and workshops where city representatives can share experiences, exchange ideas, and build relationships. These platforms provide opportunities for city officials, project teams, and stakeholders to establish connections, identify areas for collaboration, and explore common goals.

Alternatively, Pilots could promote knowledge exchange and mutual learning by facilitating the exchange of experiences, best practices, and lessons. This can be accomplished through organized study visits, peer-to-peer learning sessions, and the creation of virtual platforms for knowledge sharing. Cities can strengthen their collective knowledge base and improve their implementation strategies by gaining insight from one another's successes and difficulties.

Cities must be encouraged to work together to address shared challenges and implement common solutions through collaborative projects. This may involve collaborative research endeavors, pilot projects, or resource-sharing agreements. By collaborating on specific projects, cities can capitalize on their respective strengths, pool resources, and have a greater impact.

Policy will play a crucial role in this purpose. Promoting policy alignment and advocacy efforts among coastal cities would address shared concerns and influence regional or national policies. Cities can amplify their collective voice and exert more influence on decision-making processes by aligning their agendas and advocating for shared priorities. This collaborative approach strengthens their position and enables them to address systemic challenges more effectively.

Another way could be establishing a platform or network designed specifically for continuous communication and collaboration between coastal cities. This can translate into an online platform, a community forum, or a dedicated website where city representatives, project teams, and stakeholders can interact, share updates, exchange ideas, and seek support. Consistent communication ensures that relationships are maintained and that collaboration continues throughout the duration of the project and beyond.

Pilot cities could facilitate funding and resource-sharing mechanisms to support their sustainability efforts. This may entail the creation of funding pools, the establishment of grant programs, or the facilitation of the exchange of resources, expertise, and technologies. Cities can collectively overcome obstacles and expedite the implementation of sustainable solutions by pooling their resources and dividing their financial burdens.

Marketing has its role too. Collaborating on joint marketing and promotional activities would promote the Bauhaus of the Seas Sails project and the accomplishments of participating cities. This may involve organizing joint events, participating in international conferences and expos, or utilizing digital platforms for collective promotion. Cities can attract attention, inspire others, and strengthen relationships by showcasing their collective efforts.

European coastal cities can foster long-lasting relationships and establish a collaborative framework for implementing sustainable and regenerative projects by adopting these approaches. These connections not only increase the efficacy of the Bauhaus of the Seas Sails project, but also contribute to a broader culture of cooperation and shared learning among cities seeking positive change.

9. Evaluation and measurement

9.1. Indicators for evaluation and measurement

The following measurement and evaluation process, which includes the definition of indicators and the establishment of a monitoring and evaluation plan, will be further implemented and carried out by Work Package 5 during the upcoming phases of the Bauhaus of the Seas Sails project. Work Package 5 is specifically dedicated to the evaluation and measurement of the project's impact and effectiveness.

It is essential to measure the final performance and impact of urban regeneration projects in order to assess their success and identify areas for improvement. When assessing the effectiveness of urban regeneration projects, it is essential to consider various factors, such as culture, sustainability, inclusion, and governance.

Culture refers to the social, economic, and environmental factors that influence the way in which people live and work in a specific location. To assess the impact of urban regeneration projects on culture, it is necessary to consider factors such as the preservation of historic and cultural landmarks,

the promotion of local arts and culture, and the creation of community spaces that encourage social interaction and engagement.

Sustainability refers to urban regeneration projects' long-term environmental viability and resilience. In order to measure the impact of urban regeneration projects on sustainability, it is essential to take into account factors such as the use of water, renewable energy, the reduction of carbon emissions, the production of waste, the promotion of green spaces and public transportation, the development of energy-efficient and environmentally friendly buildings and infrastructure, amongst others.

Inclusion refers to the ability of all community members, regardless of race, gender, or socioeconomic status, to participate fully in the urban regeneration process. To assess the impact of urban regeneration projects on inclusion, it is essential to consider factors such as the participation of community members in the planning and implementation process, the availability of affordable housing and public services, and the promotion of diversity and equity in every aspect of the project. Governance refers to the structures and processes used to make decisions and implement policies. To measure the impact of urban regeneration projects on governance, it is necessary to consider factors such as the transparency and accountability of decision-making processes, the involvement of community members in project governance, and the effectiveness of governance structures in ensuring that resources are used efficiently and effectively.

A variety of quantitative and qualitative indicators can be used to assess the efficacy of urban regeneration projects. Quantitative indicators may include the reduction of greenhouse gas emissions, the expansion of green spaces, and the creation of affordable housing units. Qualitative indicators may include measures of community engagement and participation, the perceived impact of the project on quality of life and well-being, and the extent to which the project has contributed to the preservation and promotion of local culture and heritage. Ultimately, measuring the impact of urban regeneration projects requires a comprehensive and integrated approach that considers a variety of cultural, environmental, social, and governance-related factors. This allows for the evaluation of the project's success and the identification of areas for improvement, ensuring that

urban regeneration projects continue to meet the needs and aspirations of the community over the long term.

9.2. Monitoring replication strategy

Monitoring the above-mentioned replication strategy is essential for ensuring its efficacy, identifying areas for improvement, and tracking progress toward the desired outcomes. In the monitoring process a pivotal role would be played by those actors inside the co-design framework that can exercise a certain governance and leadership role. In particular the Sea Forum and Ocean Ambassadors would surely participate in the process to share directives and perspectives to each Pilot, in order to ensure a smooth implementation which is coherent with the needs of the city.

The first thing to do in order to be able to monitor a replication strategy is to establish distinct objectives and define specific indicators that can be used to evaluate the strategy's success. These indicators should align with the objectives of the Bauhaus of the Seas Sails principles and the desired replication outcomes. Indicators could include, for instance, the number of cities that successfully replicated solutions, the level of stakeholder engagement, and the impact in terms of sustainability and inclusivity.

Conducting regular progress reviews would then allow Pilots to evaluate the replication process against the predefined objectives and key performance indicators. These reviews can be conducted at specific intervals or milestones, enabling an evaluation of the progress made, the identification of bottlenecks or areas requiring additional support, and any necessary adjustments to the replication strategy. Reviews of progress would favour shared reflections on the replication process and make decisions based on the received feedback.

Throughout the process, stakeholders cannot be forgotten. Engaging with stakeholders involved in the process of replication would allow Pilots to collect feedback on their experiences, obstacles, and suggestions for improvement. This can be accomplished via questionnaires, interviews, focus groups,

or workshops. Actively soliciting feedback from stakeholders ensures their perspectives are considered and their voices are heard, thereby facilitating a more inclusive and collaborative replication process.

Any of the processes suggested in the following strategy cannot bypass iteration. Data and collected feedback can be used to adapt and improve the replication strategy as required. As challenges and opportunities emerge during the replication process, it is crucial to be adaptable and responsive, adjusting the strategy as necessary to optimize results. Continuous monitoring enables iterative adaptation and guarantees that the replication strategy remains dynamic and aligned with ever-changing needs and contexts.

By implementing a robust monitoring framework that includes these elements, the replication strategy can be monitored effectively, allowing Pilots to track progress, identify areas for improvement, and ultimately ensure the successful replication of sustainable and regenerative solutions across European coastal cities.

9.3. Compliance with International standards

The methodology presented for urban regeneration projects is intended to align with international benchmarks for measuring success and impact, such as Key Performance Indicators (KPIs), Environmental, Social, and Governance (ESG) metrics, and the Sustainable Development Goals (SDGs). KPIs are commonly used to evaluate the performance of businesses and organizations, and they can also be applied to urban regeneration initiatives.

By establishing clear and measurable KPIs for such factors as energy consumption, carbon emissions, and community engagement, it is possible to track progress and identify areas for future improvement. ESG metrics are employed to assess the environmental, social, and governance impacts of businesses and organizations. In the context of urban regeneration projects, ESG metrics can be used to evaluate the project's sustainability, its impact on the local community, and the efficacy of governance structures in ensuring that the project is managed transparently and responsibly.

In 2015, the United Nations adopted the Sustainable Development Goals (SDGs), which provide a framework for sustainable development that encompasses a variety of economic, social, and environmental factors. The methodology presented for urban regeneration projects is aligned with the Sustainable Development Goals, with a particular emphasis on Goal 11: Sustainable Cities and Communities. Considering factors such as community engagement, sustainability, and inclusion, the methodology aims to contribute to the long-term achievement of the SDGs. To ensure that the methodology complies with these international standards, it is essential to establish clear and measurable success and impact indicators and to evaluate progress against these indicators on a regular basis. By doing so, it is possible to ensure that the methodology aligns with the values and priorities of the global community and maximize the impact of urban regeneration projects on the local community and the world at large.

Figure 21. Compliance with main international standards

10. Conclusion

An overview of the city of the future and how to replicate its model

Collaboration, community engagement, and sustainability are highlighted in the methodology presented for urban regeneration projects. It is possible to create regenerative cities that prioritize the needs and well-being of their residents while also contributing to the achievement of shared international standards such as KPIs, ESG metrics, and the SDGs by involving a diverse range of stakeholders in a co-design approach based on design thinking. The resilient, sustainable, and inclusive city of the future is one that is designed for regeneration[15]. It is a city where all residents have access to basic services and infrastructure, where green spaces and public amenities abound, and where innovative solutions are implemented to combat climate change and social inequality. To replicate this model, it is crucial to establish the appropriate governance, administration, and leadership, with an emphasis on collaboration, transparency, and accountability. In addition, it is essential to utilize technology to facilitate data collection, mapping, and evaluation, and to establish measurable success and impact indicators. Ultimately, the regenerative city of the future is one that prioritizes the needs and well-being of its residents while also contributing to the attainment of internationally agreed-upon standards for sustainable development. We can create a more sustainable, equitable, and prosperous future for all by replicating this model in cities across the globe.

[15] World Bank Blogs, *"Urban regeneration – a catalyst for inclusive and sustainable cities"*, 2019