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The Urban Lab of Europe !

# The BRICK-BEACH Project Journal N°1

*Project led by the City of Velez-Malaga*



**CIRCULAR  
ECONOMY**

# The BRICK-BEACH project

The **BRICK-BEACH** project seeks to use construction and demolition waste to regenerate a disappeared beach in Velez-Malaga through the development of a circular economy model. The project will create a debris treatment plant and will design an innovative process that will allow the output materials to have the granulometry and softness needed to regenerate damaged sandy beaches such as the Mezquitilla beach. Debris from local illegal dumps will be treated and used for the integral beach regeneration and its surroundings, as well for experimenting together with local businesses other innovative circular economy products. An integrated set of socio-economic and environmental restoration programmes will be implemented to complete the beach regeneration. The newly created urban space next to the regenerated beach will also be used as an opportunity to generate new tourism-related as well as environmental leisure services and activities.

## Partnership:

City of Velez-Malaga; **1 Ministry:** Spanish ministry of agriculture, food and environment; **1 regional authority:** Andalucian Regional department for the environment and land planning; **1 higher education and research institute:** University of Malaga; **1 NGO:** Aula del Mar de Málaga; **1 business sector representative:** Spanish Federation of Business Associations of Construction and Demolition Waste recovery (VALORIZA).

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# 1. Executive Summary

The EU Urban Innovative Actions (UIA) supports the **BRICK-BEACH** project of Vélez-Málaga (Spain). Its objectives are: a) the construction of a treatment plant for construction and demolition waste; b) the cleaning and decontamination of illegal dumping distributed over the municipality; c) the regeneration of the “Mezquitilla” Beach guaranteeing the defence of the population and the infrastructures against the waves as well as the recovery of the entire coastal ecosystem associated, from the repopulation of the pine and forests located in the interior until the recovery of the bordering marine meadows, and d) the development of a new commercial product suitable for new environmental applications in the context of circular economy.

The **BRICK-BEACH** started its implementation phase in July 2018, and between July-October 2018. This journal will look at the following elements:

## Project Management

In relation to the Project Management, different meetings were held which main objectives were to deploy the partnership, to agree on the internal communication system, to update the work plan and determine the role and responsibilities of partner. A Communication expert was hired and in the near future a financial expert will join the project. A good synergy and understanding exists in the project management responsible, that is absolutely crucial given the complexity of the project at a legal, administrative and logistical level.

## Communication

During the reporting period, the Communication Plan was elaborated. The main elements of it are the following: Target groups; Objectives; Communication actions, and Evaluation. The Communication Plan must pay special attention to different aspects: -to transmit properly the innovative solutions of this initiative to solve classic problems in the area and -to involve as much as possible the environmental, economic, fishermen organisations, civil society groups and associations, etc.

## C&DW Treatment Plant

Different actions have been realised to complete the project for the construction of the recycling plant:- a visit to three similar plants in Liechtenstein, Switzerland and Spain (Arecosur) - a meeting in the University of Málaga with the Urban Authority and AGRECA where it was a question of the materials to be used for the beach regeneration and the machinery to obtain it and- the definition of the elements to be part of the C&DW project plant. The plant project was finalised and submitted to the local authorities for approval together with a Business Plan that, among other aspects, proposes a model for the operation and management of the new C&DW treatment plant.

## Beach integrated regeneration

The regeneration of this historic urban beach will be an innovative experience that will promote the circular economy and the growth of environmental employment in the tourism sector. Aula del Mar has developed a draft of the so-called **Conceptualisation of the Beach** that sets the model of exploitation of the beach, activities to be carried out in it, etc. Once approved, it will be submitted to the active civil society organisations for their knowledge and observations. The project is also developing a document-**Conditioning and Environmental Restoration**- by the **Andalusian Agency for Water and Environment**. The main purpose being the development of an environment and regeneration plan including a holistic environmental impact study.

## Socioeconomic revitalisation and awareness

In reference to the socioeconomic revitalisation and awareness, Aula del Mar developed the draft **Programme for Citizen Participation Programme**, which contemplates the realisation of different actions aimed at fostering the social participation. The draft Programme is split in different phases: 1) Citizen participation programme, 2) Analysis of the new territorial planning, 3) Creation and implementation of an Environmental Volunteer Programme, and 4) Monitoring and evaluation of the Program.

Regarding the **challenges**, the first consideration to be mentioned is that the project is in its first phase of implementation. Therefore, although different actions, including draft plant plan,

draft communication plan, condition and environmental restoration draft plan, etc., have been realised, it is too early to analyse possible shortcomings and solutions to apply or propose. The second consideration is that the leadership and commitments of partners are solid and, in principle, all the conditions are present to implement the project successfully.

Currently there are no major problems related to the challenges. However, special attention must be paid to deploying the communication plan as soon as possible, together with the awareness and participation of the final beneficiaries and stakeholders to disseminate among them the objectives, challenges and expected results.

## 2. The Policy Context of the Circular Economy

### 2.1. European level

Having in mind the UN “2030 Agenda for Sustainable Development”, where one of the goals is “...to protect the planet from degradation, including through sustainable consumption and production, sustainable managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations”<sup>1</sup>, the European Commission, taking also into consideration the “Europe 2020 Strategy for smart, sustainable and inclusive growth”, adopted a comprehensive **Circular Economy Programme**<sup>2</sup>, which includes measures looking at stimulating Europe’s transition towards a circular economy, fostering global competitiveness, improving sustainable economic growth and creating new jobs. The actions proposed are covering the entire cycle including aspects related to: production, consumption, waste management, market of secondary raw materials, innovation and investments and sectorial actions in the field of plastics, food waste, critical raw materials, construction and demolition and biomass and bio-based materials.

In the **Action Plan** of the European Commission, the circular economy is defined as “an economy where the value of products, materials and

*resources is maintained in the economy for as long as possible, and the generation of waste minimized”.*

It is also important to mention other EU policies related with the Circular Economy such as: - **The 7<sup>th</sup> Environment Action Programme (EAP)**<sup>3</sup>, with three main objectives: (i) to protect, conserve and enhance the Union’s natural capital (ii) to turn the Union into a resource-efficient, green, and competitive low-carbon economy, and (iii) to safeguard the Union’s citizens from environment-related pressures and risks to health and wellbeing. – **The Environmental Technologies and Action Plan for the European Union**,<sup>4</sup> on the promotion of technologies in favor of sustainable development.– **The Integrated Product Policy**,<sup>5</sup> with the objective of considering the entire cycle that starts at the moment a product is designed to identify and manage environmental impacts associated to its useful life.– **Life Cycle Thinking (LCA)**, which, in line with the principles of integrated product policy, aims to analyze the environmental impact of products or services and assist in the decision-making regarding design. - **Ecological labels** with several European provisions (EEC Regulation 880/92 and EEC Regulation 66/2010). Its purpose is to

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<sup>1</sup> Resolution adopted by the UN General Assembly on 25 September 2015

<sup>2</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee for the Regions. Closing the loop-An EU action plan for the Circular Economy.COM (2015) 614 final

<sup>3</sup> [www.ec.europa.eu/environment/action-programme/](http://www.ec.europa.eu/environment/action-programme/)

<sup>4</sup> European Parliament resolution on the communication from the Commission to the Council and the European Parliament on Stimulating Technologies for Sustainable Development: An Environmental Technologies Action Plan for the European Union (2004/2131(INI))

<sup>5</sup> Green Paper of 7 February 2001 on integrated product policy (presented by the Commission) [COM(2001) 68 final]

make available to consumers the environmental information related to the product or service in question. - **Green Public Procurement**, in order to integrate the values of environmental sustainability in the processes of acquisitions by the public administration, as well as to favor balanced social and work conditions. - **Integrated energy policy and climate change**, which has an important relationship with waste management. Measures for the efficient segregation of waste and to facilitate that bio waste can be used as biomass or for the production of biogas. - **Green paper on the management of bio-waste**.<sup>6</sup> A document analyzing possible management alternatives for bio-waste, its impact on the environment and on people's health, as well as socioeconomic and regulatory aspects related to this type of waste.

On the other hand, and as regards the role of the cities and urban areas, the **Pact of Amsterdam (2016)**<sup>7</sup>, agreed by the EU Ministers on Territorial Cohesion and/or Urban Matters, underlines the need to integrate the urban and municipality authorities in this process as one of the main stakeholders of innovation and economy, especially since more than 70% of all European citizens are living in urban areas and with an estimation to reach 80% by 2050. The Pact of Amsterdam also adopted the **Urban Agenda for the European Union**<sup>8</sup>, which is made-up of 12 priority themes or priorities vital to the economic development and sustainability of urban areas. One of such priorities is the **Circular Economy**.

There is, therefore, a general consensus on the role that cities must play in the development of a circular economy. They act as facilitators and/or

promoters of measures and actions by which they can influence both consumers and the business sector. Moreover, the circular economy requires multi-level governance and multi-disciplinary approach in which the urban authorities and cities are called to have a real and practical role to overcome complex problems through the designing and implementation of innovative solutions to critical issues.

To address the problems of the circular economy and possible solutions at the city level, an ad-hoc **Partnership on Circular Economy** was established within the frame of the Urban Agenda for the European Union. Different meetings and workshops have been held since its creation, and some recommendations and actions have been reached. Those recommendations and actions deal with some of the most critical issues and barriers for the urban authorities: - **Better Regulation** (waste and water legislation, economic incentives, impact assessment and urban bio-resources); - **Better Funding** (circular economy funding guide and post 2020 Cohesion Policy); and **Better Knowledge** (circular city portal, urban resources centers, circular management roadmap and collaborative economy knowledge pack).

From the point of view of the EU financial support to this and related fields, it is clear that the **European Regional Development Fund (ERDF)** for 2014-2020 is the most relevant instrument at the local level (50% of the Fund has to be invested in urban areas), and will undoubtedly be for the period 2021-2027. Within the ERDF, the **Sustainable Urban Development** (article 7) and the **Urban Innovative Actions (UIA)** are

<sup>6</sup> Green Paper on the management of bio-waste in the European Union. Brussels 3.12.2008 COM(2008)811 final

<sup>7</sup> Urban Agenda for the EU. Pact of Amsterdam. Informal Meeting of EU Ministers Responsible for Urban Matters on 30 May 2016.

<sup>8</sup> Urban Agenda for the EU. Circular Economy. Draft Action Plan 09.02.2018.

the instruments designed to support actions at urban level with the main objective of generating relevant knowledge for sustainable solutions to the urban challenges.

The sustainability of the urban challenges in the European context is also supported through other financial tools, technical support and specialized networks, such as **HORIZON 2020**, which main aim is to *“take great ideas from the lab to the market... for smart, sustainable and inclusive growth... to find solutions to a vast array of challenges.”*<sup>9</sup> **ESPON**<sup>10</sup>, EU initiative which objective is to strengthen the effectiveness of the EU Cohesion Policy through the development and promotion of territorial evidence. **INTERACT**, initiative

designed to support the management of Interreg projects and *“regions work together to find solutions to common economic, environmental, social and cultural challenges”*.<sup>11</sup> **URBACT**, EU initiative which mission is to *“to enable cities work together and develop integrated solutions to common urban challenges, by networking, learning from one another’s experiences, drawing lessons and identifying good practices to improve urban policies.”*<sup>12</sup> **URBAN DEVELOPMENT NETWORK (UDN)** that is composed of more than 500 urban areas and cities across the European Union responsible for implementing integrated actions based on sustainable development strategies.

## 2.2. National and regional level

At the **national level**, unfortunately there is not yet a comprehensive circular economy strategy that gives an answer to the Circular Economy Package (2015) developed by the European Union. Nevertheless, at the moment this document is being elaborated, the Ministry of Agriculture and Fisheries, Food and Environment and the Ministry of Economy, Industry and Competitiveness, have submitted for public consultation a draft strategy<sup>13</sup> which, taking as the main reference the Circular Economy Package of the EC, establishes the lines of action on which the policies and instruments of the **Spanish Circular Economy Strategy** will focus: production, consumption, waste management, secondary raw materials, and water reuse. The strategy defines a set of strategic objectives:

- 1) Protect the environment and guarantee the health of people by reducing the use of non-renewable natural resources.
- 2) Promote the analysis of the life cycle of products and the incorporation of Eco design criteria.
- 3) Promote the effective application of the principle of the hierarchy of waste, promoting the prevention of its generation, encouraging reuse, strengthening recollection and favoring its traceability.
- 4) Promote guidelines that increase innovation and the overall efficiency of production processes.
- 5) Promote innovative forms of sustainable consumption, which include sustainable

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<sup>9</sup> European Commission. HORIZON 2020 in brief. The EU Framework Programme for Research & Innovation. 2014.

<sup>10</sup> [www.espon.eu](http://www.espon.eu)

<sup>11</sup> [www.interact-eu.net](http://www.interact-eu.net)

<sup>12</sup> [www.urbact.eu](http://www.urbact.eu)

<sup>13</sup> España Circular 2030. Estrategia española de Economía Circular 2030. February 2018.

products and services, as well as the use of digital infrastructure and services.

- 6) Promote a model of responsible consumption, based on the transparency of information on the characteristics of goods and services, their durability and energy efficiency.
- 7) Facilitate and promote the creation of adequate channels to facilitate the exchange of information and coordination with public administrations, the scientific and technological community and economic and social agents.
- 8) Disseminate the importance of moving from the linear economy towards a circular economy, promoting the transparency of the processes and the awareness of citizens.
- 9) Promote the use of common, transparent and accessible indicators that allows knowing the degree of implementation of the circular economy.
- 10) Promote the incorporation of social and environmental impact indicators derived from the operation of companies.
- 11) Consolidate employment policies that favor the transition to a circular economy, identifying new sources of employment and facilitating the creation of skills for them.

All those objectives should be coupled in parallel with other type of initiatives equal or more relevant than the ones mentioned above that could be structured, according to one of the most important foundation<sup>14</sup> on these issues in Spain, as follows:

- **Legislation:** Development and harmonization of laws and regulations at national and regional level, with the main strategic lines of European legislation, which may include key issues such as green procurement, both public and private.
- **Taxation:** Reform and definition of taxes and incentives combined with the reduction of material/energy inputs and emissions, encouraging virtuous patterns in the production and consumption phase, also considering the role of non-state/regional Public Administrations, such as cities, as well as the potential in the creation of new jobs.
- **Education:** Define short and long-term strategies, such as the introduction of educational elements for responsible consumption in all school grades, or encourage professional training systems, whether public or private, for the creation of new business models and development and the use of new technologies.

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<sup>14</sup> Status and evolution of the Circular Economy in Spain. COTEC Foundation for innovation. 2017.

<sup>15</sup> <http://www.ciencia.gob.es/>

<sup>16</sup> BOE nº 27, 31.01.2018

There are also at the state level different plans and programmes that, in one way or another, respond to the issues raised in the European circular economy package. The most relevant are the following: - **Spanish Strategy of Science and Technology and Innovation 2013-2020**<sup>15</sup>; - **Plan for Public Green Procurement of the General Administration and the Public Organisms**<sup>16</sup>; - **National Action Plan for Energy Efficiency 2017-2020**<sup>17</sup>; - **State Plan Waste Management Framework 2016-2022**<sup>18</sup>; and - **Spanish Bioeconomy Strategy, Horizonte 2030**<sup>19</sup>.

At the **regional level**, (Andalucía), the main strategic document dealing with the circular economy is the **Andalusian Strategy for Sustainable Development 2030**<sup>20</sup>, adopted on June 2018, with the main objective to accelerate the transition towards a green and circular economy. This document establishes the bases to guide public policies aimed at harmonizing economic growth and protecting the environment.

In line with the objectives of the UN 2030 Agenda, this new strategy will also update and consolidate the efforts that have been made in different fields, among them, renewable energy, ecological agriculture, reforestation and waste recycling.

The strategy will pay special attention to the creation of employment, social cohesion, competitiveness, environmental education, the gradual reconversion of unsustainable models of

consumption and production, the fight against poverty, and the integration of people and groups in risk of exclusion.

Finally, among the objectives of the strategy are those that refer to the promotion of national and international cooperation in the field of the environment, the integration of conservation in the territorial development model, the strengthening of the adaptive capacity of Andalusian ecosystems in a scenario of global change, and the organization of the territory and cities in coordination with the different administrations and agents involved.

Another strategy at the regional level that should be taken into account in the field of circular economy, is the **Innovation Strategy of Andalusia, RIS3**<sup>21</sup>, which, in order to respond to the requirement derived from the conditionality “ex-ante” to access structural investment funds, establishes 8 priority areas: 1) mobility and logistics, 2) advanced industry linked to transport, 3) endogenous resources of territorial base, 4) tourism, culture and leisure, 5) health and social welfare, 6) agro-industry and healthy food, 7) renewable energies, efficiency and sustainable construction, and 8) ICT and digital economy.

In the area of waste management, **the Territorial Management Plan for Non-Hazardous Waste Management of Andalusia, 2010-2019**<sup>22</sup>, supports the prevention, management, monitoring and control of non-hazardous waste. On the other hand, the **Prevention and**

<sup>17</sup> <http://www.idae.es/>

<sup>18</sup> <http://www.mapama.gob.es>

<sup>19</sup> <http://bioeconomia.agripa.org/>

<sup>20</sup> <http://www.juntadeandalucia.es/medioambiente>

<sup>21</sup> <http://ris3andalucia.es/>

<sup>22</sup> Decree 397/2010 of November 2

<sup>23</sup> Decree 7/2012, of January 17

**Management Plan for Hazardous Waste of Andalusia, 2012-2020**<sup>23</sup>, defines the objectives of reduction, reuse, recycling, and other forms of recovery and elimination, as well as the measures to be adopted to achieve said objectives, the means of financing and the review procedure. In addition, it contains a diagnosis that analyzes the amount of waste produced in the region and the estimation of the costs of management operations, as well as the places and facilities suitable for the treatment or disposal of this waste.

As regards the green jobs, the **Strategy for the Generation of Environmental Employment in Andalusia 2020**<sup>24</sup>, establishes as the main objective to drive the Andalusian production model towards a green economy in which the environment is perceived as a engine for socioeconomic development and its potential as a source of employment is recognized, under the criteria of the bioeconomy. Green employment is understood as both the one

related to sectors traditionally considered as environmental and the new green employment fields, as well as the greening of production processes and products in all sectors of the economy.

Finally, it is worth mentioning as well the **Andalusia Strategy of Circular Bioeconomy**<sup>25</sup>, adopted in September 2018, whose objectives are: improve the sustainability and competitiveness of the agri-food sectors, fisheries, and forestry, encouraging the use of innovative practices that favour and develop a circular economy; promote the competitiveness of industries that work with biological resources, fostering innovation, the generation of knowledge and the transfer of technology; promote the reuse of resources, water, gases, nutrients and the use of waste and vegetable waste to obtain other products, uses or energies; encourage research, innovation and qualification related to the bioeconomy and strengthen inter-administrative coordination, and synergies with other plans and work programs of different scope.

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<sup>24</sup> Agreement of the Government Council of April 12, 2016.

<sup>25</sup> [www.juntadeandalucia.es/export/drupaljda/Estrategia\\_Andaluza\\_Bioeconomia\\_Circular](http://www.juntadeandalucia.es/export/drupaljda/Estrategia_Andaluza_Bioeconomia_Circular).

## 3. Progress made by Brick-Beach Project

Although the project implementation phase should have started in April 2018, due to different administrative issues related to the final composition of the project partnership, the official start date was established on the first of July 2018.

The BRICK-BREACH project is divided into the following main areas:

- Project Management,
- Communication,

- C&DW Treatment Plant,
- “Mezquitilla” Beach integrated regeneration,
- Socioeconomic revitalisation and awareness,
- Industrial facility and maritime-terrestrial public works,
- Closure and knowledge transfer.

The most relevant advances in between July-October 2018, can be summarised, as follows:

### 3.1. Project Management

With regard to the project management, the kick-off meeting took place with the participation of all partners in which the most relevant parts of the discussion were devoted to the project status, the procedures of communication among the partners and other stakeholders, the work plan and main milestone, the telematic communication system to be used by the partners, the eligibility of the costs and the rules of procurement. To date, a telematic documentation system has been established. The main conclusion in this area is that an efficient and effective communication mechanism has been set-up, which allows a good knowledge of the progress of the different actions, as well as the strengthening of the institutional/capacity building among the partners and a better knowledge of the challenges to face during the implementation phase.

Finally, as regards the financial aspects, the Urban Authority announced that in the coming weeks the Project Financial Manager (Project FM) will be appointed, who will have overall financial responsibility of the project.

As a conclusion, a good synergy and understanding exists in the management responsibilities which is absolutely crucial given the complexity and the different legal, administrative and logistical interactions that the project implies and which represents undoubtedly one of the most important challenges. In this sense, the daily coordination and commitment of the partners together with a strong leadership and the sufficient technical support from the Urban Authority must be present as a prerequisite to finalise the project properly.

## 3.2. Communication

In the area of Communication, the main aim is to establish a systematized information system among the partners and dissemination of transparent and comprehensible progress to the target audience and the local area. A **Communication Plan** is being developed and will be ready and approved soon. Although already exist some communicative actions through the Facebook of the Urban Authority and social media tools (<https://twitter.com/brickbeachvelez>), the Communication Plan must pay special attention to different questions: - **to transmit properly the innovative solutions** of this initiative to solve classic problems in the area (the proliferation of illegal dumping of debris scattered around the municipality; the lack of a waste treatment plant

for construction and demolition; the gradual loss of some of the best beaches in the municipality and the low environmental awareness); - **to involve as much as possible the environmental, economic, fishermen organisations, civil groups and associations, etc.**, in order to reduce the reticence in front of a novel experience which will cause an important degree of nuisance during the execution of the works. It is worth to mention that the “Mezquitilla” beach is subject to an important road traffic located between two crowded urban centres from the tourist and commercial point of view, such as Torrox and Torre del Mar and very close to a fishing and recreational port (Caleta de Vélez).

## 3.3. C&DW Treatment Plant

Without any doubt, the C&DW Treatment Plant – together with the “Mezquitilla” Beach works – is one of the main engines of the project. The construction of the first demolition waste (C&DW) treatment facility in the Axarquía (Málaga) region represents an essential infrastructure for the development of a circular economy initiative and the elimination of illegal dumping in the area. Therefore, the design of the plant will incorporate innovative research for the separation of gypsum from waste, and successful experiments for the production of recycled fine-grained recycled. The waste will be mostly processed from the local roofing industry, new construction works and small renovation work on housing. The C&DW plant will serve the different municipalities of the region and facilitates compliance with the current legislation that regulates the production and management of construction and demolition waste. The application of the recycled product in

the regeneration of urban beaches demands high quality controls in their technical characteristics, but also opens wide economic and commercial possibilities in the environmental sector of the circular economy.

Different actions have been realised to complete the project plant. First of all, a visit to three similar plants in Liechtenstein, Switzerland and Spain (Arecosur) was realised by the Urban Authority and relevant partner to verify *in situ* the operation and results of these type of waste treatment plants and more precisely the procedure for obtaining the different materials of the C&DW, as well as the granulometry obtained.

Secondly, a technical meeting was held in the University of Málaga with the Urban Authority and AGRECA where they discussed the materials to be used for the beach regeneration and the machinery to obtain it; the definition of the type of plant; the establishment of nomenclature of

materials; the granulometry classification and the establishment of necessary tests.

The C&DW project plant has been elaborated taking into account the requirements mentioned above, and paying special attention to the versatility to finally obtain a plant that can be

adapted to the different types of waste and stones to be used, once the process is completed, in the beach. Together with the project plant, a Business Plan proposing a model for the operation and management of the new C&DW treatment plant has been elaborated

### 3.4. “Mezquitilla” Beach integrated regeneration

The regeneration of this historic urban beach, with previously recycled and eroded aggregates, will be an innovative experience that will promote the circular economy and the growth of environmental employment in the tourism sector, and that can be exported to other Mediterranean urban areas. The complete erosion of the beach of Mezquitilla meant the disappearance of the coastal ecosystem associated with it, therefore its environmental restoration is considered as one of the pillars of the project of integral regeneration of the beach. Once the biotope has been regenerated, recovery of the biocenosis will be completed, responding to the thematic objectives of preserving and protecting the environment, promoting sustainability and the quality of employment, favouring the recovery of local fishing grounds.

The **Aula del Mar** partner developed a draft of the so-called **Conceptualisation of the Beach** which sets the model of exploitation of the beach, activities to be carried out in it, etc. Once assumed by the Urban Authority, it will be submitted to the active civil society organisations of the area for their knowledge and observations.

Together with the conceptualisation of the beach, the project is developing the **Conditioning and Environmental Restoration** actions whose first step has been the establishment of a multidisciplinary working group within the **Andalusian Agency for Water and Environment** in cooperation with **Aula del Mar**. The main purpose being the development of an environment and regeneration plan including a holistic environmental impact study.

In parallel, **Aula del Mar** has realised a draft **Environmental Diagnostic with a SWOT analysis** that was presented in the Coordination Group. The document makes a detailed analysis of the environmental situation in the area through a description of the geography, hydrography, climatology and bioclimatology, geology, biogeography, potential vegetation, real vegetation and fauna. It also provides a description of the socioeconomic environment (demography, characteristics of the population, socioeconomic analysis and economic structure and business activity), environmental indicators and citizen participation. Finally, it presents some fields on environmental problems, the SWOT analysis, and a proposal for future strategies in the area.

### 3.5. Socioeconomic revitalisation and awareness

Among different activities to be realised within this area (business creation programme and cooperative company “Recycling Culture”), the

**Programme for Citizen Participation Programme**, contemplates the realisation of different actions aimed at fostering the social participation by

making available to the project participatory, communicative and sensitizing techniques that, in a complementary manner, can reinforce the results of the project. With the ultimate purpose of enriching the contributions (technical and environmental) made by the professionals integrated in the technical team and to try that the new beach model reflects the diversity of ways of understanding the environment from the point of view of its inhabitants.

The draft Programme is split in different phases: 1) Citizen participation programme. 2) Analysis of the new territorial planning. 3) Creation and implementation of an Environmental Volunteer Programme, and 4) Monitoring and evaluation of the Program.

As already mentioned above, the socioeconomic revitalisation and awareness campaign should be elaborated and implemented in a coordinated manner with the Communication package.

The beach that will result from the regeneration works is a singular one. It won't look exactly like other beaches. This can initially result in distrust by neighbours, tourist and other stakeholders. If this is not properly addressed, the project could be successful from a technical point of view but fail because of lack of acceptance. To avoid the possibility of rejection, it is necessary to involve all relevant stakeholders and generate ownership through a programme of activities drafted and implemented with a participatory approach addressed to all the "users" of the beach. This beach will be an opportunity to promote a wider adoption of more sustainable practices and should be a singular "scenario" for some of them to take place. In this sense, with the support of the project, a **new company with a cooperative structure** will be created. The field of activity of this company will be related to recycling and circular economy.

## 4. Brick-Beach Implementation Challenges

The first consideration about the challenges for the Brick-Beach project is that the period covered to analyse them is quite limited, since the project start date was on July 1, 2018. Thus, the analysis

of the challenges must be preliminary and based on indicators that have to be confirmed in subsequent journals.

### 4.1. Leadership for implementation

Regarding the leadership in the implementation of the project, the first consideration worth mentioning is the strong leadership by the Urban Authority, especially by the Councillor for Business and Employment that, from the first moment, has exercised such leadership with the strong collaboration of the project partners, all aware of the innovative nature and the need for close cooperation in order to successfully manage the project, especially when different organizations from different organizations at local, provincial, regional and university levels must articulate their different responsibilities

within a project with a high innovative content and with an important environmental, economic and social impact in the area. The fact of having multidisciplinary organizations and managers is certainly a challenge, although at the same time it also represents an opportunity that, at least till present, deserves a positive consideration taking into account the actions carried out in the reporting period.

Notwithstanding the foregoing, it is important to be aware of the fact that in upcoming dates (May 2019), municipal elections will take place in Spain and that this could alter what was said previously.

### 4.2. Smart Public Procurement

The public procurement phase will take place from the start of 2019. Thus, there is no indication till now that this aspect represents a challenge for the project. In any case, as most of the partners belong to the public administration they are acquainted with the public procurement aspects

and consequently it is difficult to consider this as a real challenge. The main concern in this point is the task is time consuming due to the evaluation and selection of the final beneficiaries in the different tenders that could create a certain delay in the implementation of the project.

### 4.3. Organisational arrangements within urban authorities to deliver integrated innovative projects

It is absolutely true that, integrating different departments within a single organization

to implement a project, is always difficult without, first of all, a strong leadership and,

second, without a good communication system. This is even more evident when it comes to innovative projects and the participation of different organizations from different administrations. It is about changing the organizational culture of institutions that usually work vertically to a model where the project is the one that determines the intervention of each department. The resistances are evident.

However, and bearing in mind that the project is in the initial stage of implementation, it is worth noting that until now the project is well integrated in the relevant departments and units of the municipality, at least at the level of knowledge. Being aware of this challenge, the Urban Authority, in order to reduce the possible shortcomings, will periodically invite the main managers of the relevant units to the project meetings with the aim of increasing their involvement and commitment.

#### 4.4. Participative approach for co-implementation

Regarding the participatory approach, up to the present, and given the strong leadership and commitment of the partners, participation is more than optimal. The system of established meetings, as well as the exchange of information approved among the partners, allows considering that there is no risk as to a possible deficiency in such participation. It is true, however, that in the

coming weeks a communication process must be initiated with other stakeholders in order to make the fundamental elements of the project known. Although it was expected that this process would have started just after the first Steering Committee, for several reasons it has not been carried out to date.

#### 4.5. Monitoring and Evaluation

Monitoring and evaluation is often a little bit put aside or neglected when preparing and implementing projects. Some times the selection of indicators are done in an inappropriate way mixing impact and outcome indicators. Currently, the BRICK-BEACH project includes a series of indicators in the field of environment, solid waste, nature and biodiversity, research and innovation, productive investment and ICT and productive investment and sustainable tourism. However, a thorough analysis, with the appropriate methodology, in relation to the different impact, outcome and output indicators; source of verification and assumptions in

relation to the general objective, specific objectives and concrete actions, is still to be carried out within the Steering Committee. In this sense, it is important to tackle this issue as soon as possible with, for instance, a specific workshop within the SC to integrate the logic of intervention with the mentioned elements. It is also urgent and important to establish a common database with useful information related to outputs and results. Both statistical information (quantitative) and satisfaction degree of projects beneficiaries (qualitative) must be taken into account by the monitoring and evaluation plan.

#### 4.6. Communication with targets beneficiaries

Without any doubt, communication with the final beneficiaries is one of the most important elements

for the successful implementation of a project of these characteristics. The project partners are

fully aware of this requirement and, therefore, the communication plan adequately addresses the essential aspects of the communication objectives for the final beneficiaries. It must be taken into account that, due to the complexity of the project and the diversity of stakeholders and beneficiaries, special care must be taken to involve all of them from the very beginning, making them participants in the challenges and benefits that it implies. Thus, it is recommended to launch as soon as possible as it was scheduled a **“Launching Forum”** with representatives of

all target groups settled in Vélez-Málaga and local/ regional media, presenting the overall project strategy and activities. **Round Tables** with NGOs and neighbourhood associations must be organised as well to analyse the main implications and impact of the project activities. Finally, it is also very important to pay attention to the fact that, given the high innovative and experimental component of the project; it is crucial to underline these aspects so as not to create unrealistic expectations, high hopes or misleading images.

## 4.7. Up scaling

The scaling up of the project can be analysed from different point of views involving the technical and innovation solutions and the strategic and programming aspects:

### - *Innovative solutions*

From the **local perspective**, the installation of a debris plant in the region may be used for the regeneration of other stretches of coast, the restoration of the landscape of closed quarries, their use as raw material in the manufacture of ceramic material or be used as filling in civil works and building. As well, the cleaning, decontamination and sealing of the illegal debris dumps can be extended to the rest of the municipalities of the Axarquía region. The regeneration of the “Mezquitilla” beach will cover a coastal strip length of 800 meters, reason why, in case of being a successful experience, it will be able to be extended to the remaining 2,450 meters of urban beaches that share the same problematic situation. At **regional and national level**, the recovery of the sea grass will involve a feasibility study with different phanerogam species. Its conclusions will allow the repopulation of other stretches of the coast

of the Eastern Costa del Sol with a greater degree of success, benefiting the surrounding ecosystem and the fishing sector, while acting as an important CO2 sink. The eroded recycled aggregate can be classified and marketed according to its nature, providing a greater added value. The process and demonstration of the feasibility of gypsum separation from C&DW will be of particular interest in the sector at the national level.

It is evident that from a technical-innovative point of view, if the project is successful, it represents a clear example of circular economy applied to a real and concrete problem and that could be replicated and/or adapted to the same or similar circumstances throughout of practically the entire Mediterranean coast.

### - *Strategic and programming*

From the point of view of the extension (mainstreaming) for programming (regional and national) to, for example, the strategic and operational programmes supported by the structural funds of the European Union, it is fundamental that, as in the case of BRICK-BEACH, the partnership is composed of regional or national organizations that, through their experience,

can reflect in their programming processes innovative projects or strategies. The financial, administrative and political decisions –especially like in the case of Andalusia, with capacity and competence to decide on investment projects– must be supported by successful projects and ideas easy to be replicated and applied. The

BRICK-BEACH Urban Authority, together with the partners, should establish specific measures to streamline the project, especially at regional, national and European level, through the existing networks, to present, explain and promote the concept, the results and experience of the project in the frame of the circular economy strategy.

## MAPPING BRICK-BEACH AGAINST THE ESTABLISHED UIA CHALLENGES

Challenge	Level	Observations
1. Leadership for implementation	Medium	Although at present the leadership is consistent at all levels of the project implementation, the risk associated with the future municipal elections (May 2019), could affect it.
2. Public procurement	Low	There is not indication till now that this aspect represents a challenge for the project. Since most of the partners belong to the public administration they are familiar with the public procurement aspects and consequently, for the moment, it is not considered a real challenge.
3. Integrated cross-departmental working	Low	Till present, the project is well integrated in the relevant departments and units of the municipality, at least at the level of knowledge. The Urban Authority, in order to reduce the possible shortcomings, will periodically invite the main managers of the relevant units to the project meetings with the aim of increasing their involvement and commitment.
4. Adopting a participative approach	Low	Up to the present, and given the strong leadership and commitment of the partners, participation is more than optimal. The system of established meetings, as well as the exchange of information approved among the partners, allows considering that there is no risk as to a possible deficiency in such participation.
5. Monitoring and evaluation	Medium	Currently, the project includes a series of indicators in the field of environment, solid waste, nature and biodiversity, research and innovation, productive investment and ICT and productive investment and sustainable tourism. However, a thorough analysis, with the appropriate methodology, in relation to the different impact, outcome and output indicators; source of verification and assumptions in relation to the general objective, specific objectives and concrete actions, is still to be carried out. The intention is to organise as soon as possible a specific workshop within the SC to deal with this issue.

Challenge	Level	Observations
6. Communicating with target beneficiaries	Medium	The project partners are fully aware of this requirement. Due to the complexity of the project and the diversity of stakeholders and beneficiaries, special care must be taken to involve all of them from the very beginning. Thus, it is recommended to launch as soon as possible, as it was scheduled, a <b>“Launching Forum”</b> with representatives of all target groups. Given the high innovative and experimental component of the project; it is crucial to underline these aspects so as not to create unrealistic expectations, high hopes or misleading images.
7. Up scaling	Low	From the innovative, strategic and programming point of view, the BRICK-BEACH project, if successful, has all the chances of being easily integrated at local, regional, national and European level. The innovation solutions, the integration of the environment aspects and the expected economic impact, are elements that play in favour in this sense.

## 5. Conclusion

- The BRICK-BEACH project is dealing with a quite complex situation where different aspects have to be taken into consideration: absent of a waste treatment plant in the area, a non existing beach due to environmental issues to be recovered, a important population living in the area, etc. To tackle these problems innovative activities are scheduled with the support of the EU.
- The project is just in its first four months of implementation and consequently it needs more time to see the first results in the field. Nevertheless, the partners have initiated their duties from the very beginning of the implementation phase (draft treatment plan, draft communication plan, laboratory tests, draft conceptualisation of the beach, etc.).
- In the next reporting period, the treatment plant should receive the corresponding legal licenses, and all relevant administrative requirements should have been completed. Likewise, the conceptualization of the beach and the regeneration of the environmental impact assessment must have been completed. The illegal dumping landfill will be also completely mapped and the cleaning process initiated. As concern the socioeconomic revitalisation and awareness, the designing of the recycling cooperative will be developed and the first steps on its functioning will be done. Finally, the awareness activities, being an on-going activity, will continue its implementation with specific actions in line with the Communication and Awareness Plan.
- From the point of view of project management and up-scaling activities, in the next reporting period, the relevant indicators for overall and specific objectives and results must be analysed and agreed by the partners in order to well define the monitoring and evaluation activities. As well, a set of concrete actions to up-scaling the project should be decided and implemented.

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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