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The Urban Lab of Europe !

The BRICK-BEACH project Journal N° 3

Project led by the City of Vélez-Málaga



**CIRCULAR
ECONOMY**



The BRICK-BEACH Project

The **BRICK-BEACH** project seeks to use construction and demolition waste to regenerate a disappeared beach in Velez-Málaga 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-Málaga
- Spanish Ministry of Agriculture Fisheries, Food and Environment
- Andalusian Agency for water and environment
- University of Málaga - 1 higher education and research institute
- Aula del Mar de Málaga - NGO
- Andalusian Association of Business of Construction and Demolition Waste recovery (AGRECA)

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1. EXECUTIVE SUMMARY

This third Journal of BRICK-BEACH project, reports on the advancement of the project till October 2019, and focuses on the activities realised in different areas, main challenges and findings.

BRICK-BEACH has continued its implementation in different areas (the regeneration of the area adjacent to the beach of Mezquitilla; the laboratory study on the materials to be used for the regeneration of the beach; the communication and awareness campaigns aimed at neighbours and certain target groups, etc.). It can be affirmed that, in general, as regards these activities, they develop adequately and in line with the initial plans foreseen in the project. Without a doubt, the progress made in the project is still advanced thanks to the high professional level of the technical team and those responsible for the organizations and institutions associated with the project, even though some significant difficulties have been faced.

The greatest difficulties of the project are basically located at two different although interrelated levels.

The first obstacles has a technical-administrative nature and consists of the significant accumulated delay in obtaining the environmental authorization prior to the launch of the public tender for the key element of the project: the recycling plant for construction materials that once in operation will provide the necessary material for the recovery of the Mezquitilla beach. It seems that the most realistic forecast places the obtaining of the environmental authorization in March 2020.

The second level of difficulties that the project is facing is of a political nature. In fact, in recent months the city council of Vélez-Málaga itself has questioned the suitability of the location of the recycling plant causing some confusion in the partners, associations and stakeholders and questioning the leadership capacity in the implementation of the project. In the absence of a technical report that determines the possible new location of the recycling plant, the truth is that, as of the date of this Journal, this aspect of BRICK-BEACH is the most problematic and worrisome of the project.

Taking into account all of the above, as well as the necessary deadlines for the launch and decision of the relevant public tenders and the term of implementation of BRICK-BEACH, the project's time frame to carry out all the actions is an increasingly difficult challenge. Concerning the procurement issues, despite the knowledge and experience of the project partners in the public works bidding activities, it is evident that to fulfil all the requirements of the environmental authorities, launch the public tender, select the winners and execute the work in the next two years is much more than a normal challenge.

An element that should be highlighted is the important number and level of communication and awareness actions organised for the associations and interest groups in the zone. The degree of knowledge of the objectives of BRICK-BEACH is very high and the expectations created in the area and its environment at all

levels (economic, educational, tourism, etc.) is quite relevant. The political problems mentioned above are, however, having a negative impact among neighbourhood associations that could lead to a certain degree of frustration regarding the announced and unfulfilled objectives.

Despite everything described above, the technical level of the team responsible for the implementation of BRICK-BEACH and the commitment of all its partners makes it possible to rely on the project's ability to overcome the obstacles and difficulties mentioned.

As a conclusion, BRICK-BEACH is in a critical moment due to different issues: the delay in obtaining the environmental authorizations, its impact on the bidding process and, above all, the issue regarding the location of the recycling plant that should be solved as soon as possible. On the other hand, the activities related to the administrative management, the communication to the final beneficiaries, as well as the dissemination and of the project have continued at a good pace and with very positive results.

2. BRICK-BEACH: Rethink the basics and challenges

In view of the developments of the project in recent months, it seems necessary to make a small reflection on what BRICK-BEACH represents and the real challenges it faces. In the two previous Journals, a special emphasis was placed on what the circular economy represented, as well as the characteristics of a project supported by the Urban Innovative Actions Initiative of the European Union. It was underlined that a circular economy project involves achieving a comprehensive vision and approach to address a specific problem and apply solutions that include environmental, sustainable, economic, commercial and cultural points of view. Taking into account the events of recent months, it is absolutely necessary to make a greater effort of communication, explanation and conviction to all levels, but especially to the top representatives of the municipality of Vélez-Málaga, of the essential elements of the BRICK- BEACH and the risks and challenges it faces.

BRICK-BEACH is not a classic project. It brings together a series of characteristics that make it special from many points of view: Its innovative and pilot nature (circular economy), the composition of its partnership, the involvement of different administrations (local, regional, national, European), the expected results (recovering a missing beach with construction

waste), the financial support of the European Union or the time for its execution (3 years), makes BRICK-BEACH a complex and difficult project to implement. In this sense, the essential element to accomplish properly the project is a clear and strong leadership that, as will be seen in more detail below, is being questioned with the risk and the increasing challenges that BRICK-BEACH will face.

BRICK-BEACH is in a critical moment in which essential activities, namely the construction of the recycling plant and the regeneration project of the coast and beach, together with the relevant environmental authorizations, are the key elements that will determine the project implementation as a whole. Within the time frame established for its execution, and once administrative authorizations have been received, the project managers will have to make a substantial effort to launch the tenders, select the winners and execute the corresponding works, and all this, before the end of the BRICK-BEACH project established by mid-2021. Clearly, the challenges facing BRICK-BEACH require strong leadership, an effective coordination capacity and a realistic communication to the society and stakeholders at the level of the challenges outlined.

3. PROJECT NEWS: The activities in the last six months.

The previous Journal number 2 covered the period from December 2018 till March 2019, while the present one (Journal 3) covers the period from April till the end of October 2019. In this Journal 3, the focus is put on the status and

activities carried out in relation to the recycling plant project, the studies and analyses realised around the Mezquitilla beach and the new communication activities with civil society as a whole.

3.1. The Waste Recycling Plant and the impact of regional and municipal elections.

From the point of view of administrative procedures, once the recycling plant project was submitted to the relevant regional authorities (Delegación Territorial de Medio Ambiente de la Junta de Andalucía) in the previous period (November 2018), legal environmental authorizations are still awaiting. The delay in the analysis and approval of this project by the administration responsible for issuing the corresponding environmental authorization, inevitably leads to a significant delay in the execution of the construction of the plant. In this sense, the last regional elections in Andalusia that took place in December 2018 and its impact on the configuration of a new administration, together with an important accumulation of files, are presumably the reasons of such delay. This situation will affect not only the whole BRICK-BEACH project, including the recovering of the beach of the Mezquitilla, but also, and given the absence of a solid waste recycling plants in the area, the correct treatment of waste produced by citizens and companies.

Notwithstanding the foregoing, and in order to advance as much as possible in the construction of the plant and not unnecessarily delay the

execution of the project, it was decided to tender separately the supply of the machinery of the plant by initiating the administrative contracting procedures. At the same time, a geotechnical study of the land where the installation of the recycling plant is planned which is determined by the need to establishing the type and foundation conditions for the construction of the plant. To this end, field work consisting of dynamic and continuous penetrations was realised together with mechanical probes with continuous control extraction, reaching the provisional conclusion of the poor soil quality in the surface layers and proposing different solutions that should be analysed in the coming weeks. At the same time, the project of the private transformation centre for the supply of electricity to the recycling plant has been elaborated.

In parallel to the above, two important studies related to the recycling plant have also been carried out: the Technical Plan for Waste Management of the plant, and the Study on the Acoustic Impact of the plant once in operation. Through the first, the management system considered suitable is analysed and proposed, as well as different elements such as the

characteristics of the aggregates, legal requirements, the implementation strategy, a SWOT analysis, etc. The acoustic study, on the other hand, concludes that the projected plant in the planned rural environment should not produce noise pollution levels above the limits specified in the applicable legislation on potentially affected sensitive uses, under the conditions of operation described, and therefore no specific corrective measures are proposed.

At this point, it is necessary to mention the situation created in relation to the physical location of the recycling plant within the plenary of the municipality of Vélez-Málaga, project leader. After the municipal elections that took place in Spain last April, there was no substantial change in the composition of the municipal council and, consequently, the risk included in the previous Journal about the possible impact that such elections could have on the BRICK-BEACH project and its leadership, in principle, should not take place. However, despite determining the location of the recycling plant in an area located relatively close to Mezquitilla, which facilitates the transport and efficiency of beach recovery, the plenary session of the

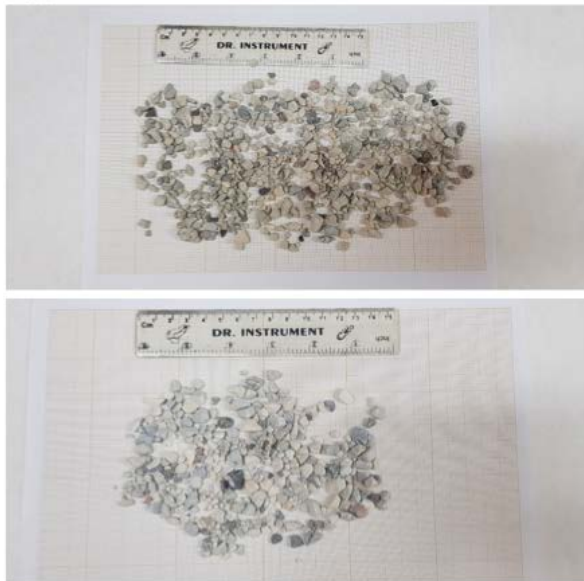
municipality decided to analyse the possibility of relocating the recycling plant in an industrial area located at a greater distance than originally planned. If this possibility finally becomes a firm decision of changing the recycling plant location, it would imply an even greater delay than that already estimated in previous Journals and a very high risk of impossibility of carrying out the project in the scheduled time. A relocation of the plant would imply practically a new project with analyses and studies different from those elaborated so far and, logically, new administrative authorisations and new tender dossiers and public procurements that would entail the non-realisation of the BRICK-BEACH project within the established deadlines, as well as a negative impact with respect to its financing.

The news collected in the local and provincial media related to political and neighbourhood oppositions regarding the original location of the plant for various reasons - environmental, noise, dust in suspension, etc. -, together with associations that strongly support the project BRICK-BEACH, are putting the project at the centre of a political confrontation that is certainly damaging its implementation.

3.2. Improving the materials for the beach and...

Regarding the materials to be used for filling the “Mezquitilla” beach, the University the Málaga (UMA), partner of the project, continued to make different analysis and laboratory test to improve the quality and roundness of the bricks and concrete, basic materials to be used in the recycling plant. More specifically, during the reporting period, the UMA carried out sphericity (roundness) tests for different dry materials. That is, without the use of metal balls for this purpose

and without water. The result of these tests leads to the conclusion that the degradation of ceramic materials is greater than the rest of the materials, being the most optimal for the purpose of the project concrete and mixed materials. In addition, the production of material for the beach without metal balls and without water would allow for more continuous production while significantly reducing production costs.



3.3. Environmental restoration of “Mezquitilla” beach

One of the complementary actions envisaged in the BRICK-BEACH project is the regeneration and environmental recovery of the plot adjacent to the “Mezquitilla” beach of about 10,500 square meters, by reforesting it with species appropriate to the characteristics of the area and the enabling of a service area (showers, toilets, picnic tables, playgrounds, etc.) that serves as a support for the beach and visually integrates with it. In this regard, la Agencia de Medio Ambiente y Agua (AMAYA) developed an environmental regeneration plan for that area.

The main conclusions and recommendations of this study can be summarized as follows:

a) Vegetation

Given the special conditions in which the area of action is located and taking into account that the objective is to obtain a raised tree canopy under which it can be developed leisure activities, the main tree proposed is the pine tree (*pinus pinea*), which is adapted to the salinity conditions typical of coastal areas and capable of generating a wide cup in his adult state.

As well, it is proposed to accompany the pine (*pinus pinea*) with other tree species such as carob (*ceratonia siliqua*), the olive tree (*olea europaea var. Sylvestris*) and the tare (African tamarix). It is recommended to enrich the plantation with forests of shrub / scrub species typical of these environments like coscoja, lentisco, aladierno, palm, myrtle, rosemary, lavender or thyme, all of them, species that can be habitually acquired in plant nurseries. If possible by availability in nursery, it would be interesting to incorporate typical plants from the region of the Axarquía as: *Limonium malacitanum*, *Intermediate calicotome to*, *Cytisus arboreus subsp catalunicus* o *Maytenus senegalensis*. As for the format of the plant to be planted, it is proposed, both for tree species and for shrubs / scrub, plant supplied in a container or pot. This plant can be supply at any time of the year and is available in a multitude of sizes, proposing the planting with specimens that present the greatest possible size, depending on the availability of the nursery, during the first years, until the implantation is ensured.



b) Topography and terrain movement

The central area of the plot is elevated by a layer of compacted granular material (graded) from the use of this area as a place to gather materials for urbanization works in 2009 and for the construction works of the roundabout and improvement of the National Highway CN-340a, during the year 2014. It is an area of about 3,700 m² of extension and an average thickness of 40 cm. This layer of compacted soil prevents planting in it any kind of woodland or scrubland, so it will be necessary to remove it. The removal of this layer of material will generate a volume of 1,482 m³ of compacted terrain, which will be partially used to cover the current ditch that runs parallel to the road and as a base to the wooden platform that will be located next to the parking.

c) Demolition and waste materials

The actions of dismantling of road elements and demolition of the current sidewalks will consist of:

- Disassembly of the 4 existing street lamps in the section of action and transfer to municipal offices.
- Disassembly of vertical signal (parking signal) and its relocation.

- Demolition of the 372.19 m² sidewalk section, between the beginning of the plot and the zebra crossing that gives access to the roundabout.
- Removal of the perimeter fence.
- Removal of debris and other existing elements within the plot.
- Removal of plant debris.

d) Protection fence

In the area of the bottom of the plot a new fence will be placed, replacing the one that has been removed, that delimits the area of public use of the urbanizations built on the slope. The total length of this fence is 192 m. The fence to be placed will be a variant of the known as “expo type”, formed by technological wooden posts of similar colour to the new pavement, arranged in a row.

e) Parking area

Once the current sidewalk and the road elements that were on it have been removed, the parking area will be extended to allow parking of vehicles in parallel. The design of this parking area is based on curved lines that allow blurring its boundaries and integrating the road and parking

into the surroundings. The parking spaces will have a variable length when adapted to this irregular design. Finally, at the boundary that separates the parking strip from the new sidewalk (length 150 m), 76 bollards will be placed 2 meters apart, preventing vehicles from invading the pedestrian zone.

f) Pavement

Following the parking strip, the new pavement will be installed, which will consist of a technological wood flooring, a state-of-the-art material that resists moisture, is non-slip, is easily cleaned and does not change colour with radiation solar, which makes it perfect for outdoor paving. This material realistically reproduces the texture and appearance of wood, but is made of high-quality plastic polymers from recycling. Its composition ensures its durability and zero maintenance. This material is worked in the same way as traditional wood, without the need for special tools.

g) Interior trays

From the new technological wood flooring, they will be projected into the interior of the plot several paths that will branch out and give access to the different areas of the plot. These trails will also be of technological wood, although to reduce the cost of them project based on assembled modules on the basis of compacted graded of 20 cm thickness.

h) Low road pipe extension

The pipe that currently collects surplus storm water that spills on the plot and on the road and that is located in the area with the lowest elevation of the plot, its south-west end, will continue. The remains of land and vegetation that accumulate inside the existing pipe section that crosses under the N-340 road will also be cleaned with pressurized water. This section of

pipe has a length of 20 m and is currently completely filled.

i) Elevated zebra crossing

It is planned to place 1 zebra crossing, which facilitates the crossing between the beach and the service area. This elevated pedestrian crossing will have a trapezoidal cross section. The regulations establish that they must have a central raised area 10 centimetres high and four meters long with two vehicle access ramps. These ramps will be 2.5 meters for areas of limited circulation at 50 km / h. The edge of the ramp, that is, the distance between the asphalt and the beginning of the ramp, should not exceed 5 millimetres, important to avoid material damage to vehicles.

j) Irrigation

The species to be planted have been selected among native species adapted to the climate of the area, which will minimize their water requirements. However, the use for the planting of potted specimens and with greater size forces to be attentive during the first years of the water needs of the plant since they are specimens with greater difficulties of implantation. It is expected that it will be necessary to provide two or three annual irrigations of support in the summer months, during the first 4-5 years. For this, the area has been equipped with a network of irrigation points that allow the water needed by the trees to be supplied by connecting hoses with a maximum length of 30 m. Specifically, 6 irrigation nozzles will be placed at the indicated points.

In the area near the beach, 2 showers will be installed to support beach users. The shower water will be reused as an irrigation contribution to the wooded area, since a recyclable water volume of 500 l / day (50 people / day x 2 showers x 5 l / use = 500 l / day) is estimated during the



summer months. This water, reintroduced in the plantation through a drainage network at an ideal depth for its use by the trees, will allow to offer an additional water supply in the months in which it needs it most.

k) Toilet module and module for shower and dress

In the central area of the plot, there will be two wooden cabins where the bathrooms that admit beach users will be located. These modules are designed and built for outdoor use using autoclaved wood, and both its materials and its finish are high moisture resistance, easy cleaning and high durability (non-porous materials that do not absorb odours, non-slip type in the floors and coatings of water-repellent melamine and high-pressure laminate in interior walls). The toilets are highly resistant to vandalism. The interior pipes are hidden in a double wall to prevent theft or breakage. One of the cabins will be for toilets adapted to people with disabilities.

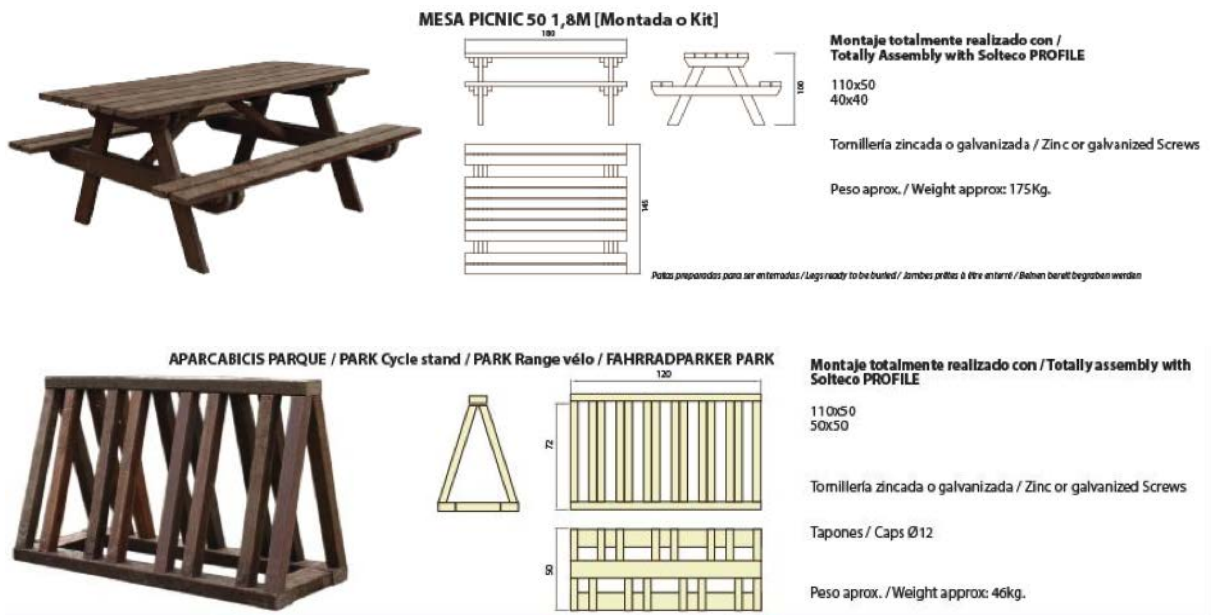
l) Urban furniture

The installation of the following furniture is contemplated:

- Picnic tables: 15 wooden picnic tables, made entirely of technological wood from recycled plastics.
- Bench: 5 wooden benches, made entirely of technological wood from recycled plastics.

- Bins: 4 bins, made entirely of technological wood from plastics recycled.
- Bike rack: 8 bike rack modules made entirely of technological wood from recycled plastics.
- Ping-Pong tables: 2 vandal-proof outdoor ping-pong tables, with a gaming surface of regulatory measures, finished with gel-coats of antichoc and antigraffiti properties, achieving total protection against deterioration.
- Chess tables: 3 vandal-proof outdoor chess tables, prepared to withstand corrosion and weather conditions, since the structure is thermo plasticised.
- Children's games area: In the area of the plot that borders the current installation of the City Hall Day Centre, an area for the installation of children's games will be prepared. The children's play area will have a quadrangular shape of 17.7 x 12.5 meters, with chamfered corners, will occupy an area of 221 m², a perimeter of 60.4 m, and the base of it will be a layer of sand without compacting 30 cm thick, bounded by a wooden curb that contains the sand inside.

The environmental restoration of the Mezquitilla beach -both in its maritime zone and on terrestrial- is logically subject to the relevant permits and authorizations of the corresponding regional and national authorities.



3.4. Socio-economic activities and networks awareness

During the reporting period, activities aimed at disseminating the objectives of the project among the stakeholders, as well as the socio-economic promotion of the area and its actors, have continued their way. One of the key elements of the success of the BRICK-BEACH project is the involvement and commitment of civil society as a whole with respect to the objectives and expected results. In this sense, the municipality of Vélez-Málaga together with Aula del Mar (partner responsible for this activity), have carried out a set of seminars / workshops to disseminate the project, which has had high

attendance and interest from the participants. The response and comments received in these workshops demonstrate the great interest that the project of renovation of the Mezquitilla beach is awakening. Citizens are waiting for the concretization of a set of activities and expectations are at a peak. It is also worth mentioning that this interest does not only come from the areas adjacent to the beach but goes much further, having received questions regarding the project of other coastal cities, associations and individuals.

More specially, the main activities developed during the reporting period were the following:

- **XXVI Week of the Sea**

Within the framework of one of the most important events on the coast of the province of Malaga, the so-called XXVI Week of the Sea, which took place at the end of March 2019 and in where different issues related to conservation and environmental challenges were addressed concerning the sea coast as a whole; the BRICK-BEACH project was presented to a wide audience. In it, there was the opportunity to share with the assistants and representatives of different organizations (Mediterranean Cooperation Centre of the International Union for the Conservation of Nature UINC, Spanish Institute of Oceanography, Maritime-Marine Cluster of Andalusia, Foundation CEI.Mar, Ministry of Agriculture, Fisheries, Livestock and Sustainable

Development of the Junta de Andalucía) the objectives and expected results of the BRICK-BEACH project.

- **World Oceans Day**

On the occasion of the celebration of the World Oceans Day sponsored by the United Nations, the BRICK-BEACH project organized on June 8, a day of awareness and action in collaboration with two neighbourhood associations (Bay Lakes Neighbours Association and Association of Mezquitilla) on the beach of Mezquitilla with an active participation, above all of the youngest, in different actions of cleaning the beach, elaboration of sculpture protesting marine pollution, workshops for children to claim a healthy beach in the Mezquitilla area and a workshop of identification of marine species typical of the area.



- **OECD Roundtable on the Circular Economy in Cities and Regions**

Within the first Roundtable on the Circular Economy in Cities and Regions organized by the OECD (July 2019), the city of Vélez-Málaga presented to the participants the BRICK-BEACH project and actively participated in the exchange of experiences with other circular economy projects in Europe. The purpose of this event revolved around the following objectives: to provide a platform for exchanging knowledge in cities and regions, to advise cities, regions and national governments in the formulation and implementation of policies related to the transition from a linear to a circular economy; and to provide a consultation mechanism to co-produce a framework of indicators to design, implement and evaluate circular economy strategies.

- **European Week of Regions and Cities**

On October 9, 2019 in the frame of the European Week of Regions and Cities held in Brussels, the BRICK-BEACH project participated in the session organised by the Urban Development Network (UDN) in which it had the opportunity to present the first achievements and lessons in front of a wide audience of urban practitioners

- **BRICK-BEACH Awareness Day**

On September 12, 2019, an awareness day of the BRICK-BEACH project was held on the Lagos Boardwalk near the Mezquitilla beach itself, which had as its main destinations citizens and tourists of the area. The objective of this day was to present and publicize the European pilot project for the restoration of coastal habitats and the promotion of the circular economy related to the recycling of demolition and construction waste, as well as to promote knowledge of marine biodiversity of the Vélez-Málaga coast and good citizen practices In the coast.



PROGRAMA BRICK-BEACH
DE SENSIBILIZACIÓN AMBIENTAL DE CIUDADANOS Y TURISTAS

Litoral de Vélez-Málaga
Paseo marítimo de Lagos
(detrás de la antigua Capilla Escuela)
12 de Septiembre 11:00-14:00 h.

ACTIVIDADES:

- Taller marino "Tesoros de la orilla"
- Taller de residuos y reciclaje "El monstruo de la contaminación"
- Elaboración participativa de un decálogo de buenas prácticas ambientales en la playa.



Organizan:



- **Meetings with different interest groups**

The BRICK-BEACH project managers are perfectly aware of the crucial need to involve civil society in the environment in the implementation of the project. In this sense, a whole set of meetings with different associations and interest groups

have continued to take place throughout the reporting period.

Tourism entrepreneurs of the Costa del Sol

At the end of March 2019, a meeting was held at the National Parador of Nerja with a group of business associations of the tourism sector (AEHCOS, National Tourism Parador of Nerja, Hotel Nerja Club, Department of Tourism of Nerja, Narixa, Unión Toboso) and in which the heads of the BRICK-BEACH project were present in order to publicize the project and collect the proposals and concerns of business representatives. The main concerns and suggestions expressed by the participants can be summarised as follows:

- Possibility of transporting RCDs from the whole region to the treatment plant.
- Concern about the limitation of activities to be carried out in the new beach.
- Possibilities to establish some kind of collaboration with the implementation of the project.



- Concern about the potential effect of the spills on the beach.

Cultural and sports associations

There is no doubt that the activities raised by the project on the Mezquitilla beach will have a highly cultural, leisure and sporting dimension. In this sense, and with the aim of publicising the project, collecting the opinions and answering the questions of this group, a meeting was held last April in Vélez-Málaga, (Mercado de San Francisco). The associations were as follows: - Urban Cultural Association of the Axarquía; - Fotarte; - Torre del Mar Beaches Running Club; - Sport Fishing Club of the Axarquía; - Axarquía Basketball Club; - Torre del Mar Handball Club; - Vélez-Málaga Athletics Club; - Axarquía Table Tennis Club; - Formaxcop; and - Canoeing Manolo Rejano (Nerja).

Among the main questions raised by these groups, the following appear:

- Concern about the insufficient amount of aggregate in the area to cover the volume necessary for the beach.
- Placement of surveillance cameras.
- Possibility of having sports facilities on the plot.
- Institutional support for the organisation of activities.

Educational associations

On May 30, 2019, a meeting was also held with a group of cultural associations, including the associations of parents of students (AMPA), in which relevant aspects of the project were addressed: the main challenges, the relevance and the innovative nature, the objectives pursued, the partnership and context and expected results. The associations presented

were the following: - EDUCATECH, AHIMSA, AMPA La Molineta del CP La Gloria, AMPA IES Almenara; - AMPA CEIP Maestro Genaro Rincón La Caleta, - AMPA Reñidero CEIP Augusto Santiago Bellido; - AMPA CEIP Las Naciones, - AMPA CEIP Vicente Aleixandre Torre del Mar, - AMPA CEIP El Romeral, - AMPA CEIP Juan Herrera Alcusa; - AMPA CEIP La Axarquía.

The aspects mentioned as points to be taken into consideration were the following:

- Perform more awareness activities with students.
- Recreational and games installation for children.
- Beach free of facilities and infrastructure.
- Smoke free beach.
- Summer cinema for children.

Social associations

On June 20, a meeting was held with a group of social associations (Afadax, Afax, Amivel, Anne, Málaga Acoge, Adapa, Lucera, Amaprex, and Guide As), in which the objectives and expected results of the BRICK-BEACH project were presented. After the presentation, a wide debate was held on the interests and expectations of these associations that can be summarised as follows:

- Wooden walkways to the shore of the beach adapted for reduced mobility persons.
- On the plot, walkways adapted to the tables, so that they are all connected to the path.
- Showers adapted for reduced mobility people.
- Parking areas for reduced mobility persons.
- On the shore, placement of amphibious chairs to facilitate the bathroom for people with reduced mobility.

- Placement of water poles.
- Parking surveillance realised by members of these associations to promote integration.

Foreign residents associations

Given the high number of foreign residents in the area, it has been considered relevant to also involve associations of foreigners among the stakeholders that must be informed of the objectives and progress of the project as a whole and more specifically of the regeneration and economic revitalization of the Mezquitilla beach. In this sense, in June 2019, a meeting was organized with the following associations: - Shanty Coro International El Morche; -German and International Dance Club; - Royal British Legion Benjarafe; -Nerja Lions Club (Lions Club Nerja); -Club 50 plus mobil e.V.; - Lux Mundi Center; and - • TAIL - Torrox-Costa.

The most demanded request of these associations, can be summarised as follows:

- Use of the Interpretation Centre for cultural activities aimed at foreigners, with the beach as its main axis.
- Translation of all the signage that is placed, both on the beach and on the plot, at least in three languages, Spanish, English and German, in order to reach as many people as possible.
- Organise international gastronomy activities with marine products to make it known to local and residents of different nationalities.
- **Educational and entrepreneurship workshops**

In the period under report, different awareness activities have been carried out mainly aimed at school-age children. The responsible for the

project are absolutely aware of the need to involve the youngest in projects and initiatives of this nature. The results of these workshops have been extremely positive and the participation of minors in the dissemination of the objectives of the project, as well as the cleanliness of the Mezquitilla beach, absolutely exemplary.

Another workshop of the groups with which dissemination and analysis tasks have been carried out has been that of business entrepreneurs. In fact, different meetings have been held with potential entrepreneurs interested in carrying out projects that meet the criteria of the BRICK-BEACH project. It means, business proposal related to the circular economy and recycling. As a provisional result of these workshops, some business initiatives are emerging as possible projects to be carried out in the Mezquitilla beach area. The most interesting business ideas are the following:

- Blue Centre of interpretation of the natural and cultural heritage of Mezquitilla.
- Environmental diving activities, fauna and flora monitoring, collaborative cleaning of seabed and responsible consumption of local fish and seafood.
- Water sports activities of kayaking and paddle surfing and environmental awareness and volunteering.
- Recovery centre for endangered marine species.
- Aquaponics experimentation, production and training centre.



3.5. BRICK-BEACH management

Project management can be considered as one of the most positive elements of the project, despite the circumstances mentioned above. Monthly meetings continue with all its partners, with an active and committed participation to the objectives and expected results. Delays in regional and national authorisations for the implementation of certain activities (recycling plant, beach regeneration), however, are implying a complicated situation in the day-to-day project management.

With regard to the communication of the activities and results of the project, it is expected that in the near future the hiring of a communication company will be realised, which, given the problematic context of certain elements of the project (location of the plant recycling) and its impact on local media; a boost in the communication plan, approved by the project leader, and an improvement in the image of the project and the social and economic advantages of the BRICK-BEACH project, is absolutely necessary.

4. OLD AND NEW CHALLENGES AND RISKS TO BE FACED

The BRICK-BEACH project, due to its innovative nature, the diversity of partners and administrations involved, the sometimes different political interests, and the expected impact on an area of high concentration of population,

continues to face old and new challenges, which requires an effort of creativity and flexibility from all stakeholders. The main challenges and difficulties can be summarised as follows:

4.1. Construction of the treatment plant and public procurement delay.

As already mentioned extensively in Journal 2, the characteristics of the construction project of the recycling plant, along with other elements (national and regional elections), as well as the administrative burden that the regional administration of the Junta de Andalucía has accumulated and recognised by the regional administration itself, is at the origin of the delay of the relevant environmental authorization (Unified Environmental Authorisation) and that the project as a whole accumulates a significant delay.

Similarly, in the previous Journal 2 it was already anticipated that the situation described above could lead to the beginning of the recycling plant's activity in the first quarter of 2020. Unfortunately, everything seems to indicate that this date may suffer a new delay. All this in a context in which, the physical location of the recycling plant, is being questioned by some political forces in the town.

Given this situation, it is clear that there is an urgent need to speed up the proceedings before

the relevant authorities in order to obtain the environmental authorization as soon as possible. It should also be borne in mind that, if such authorization is positive, it is also possible that it is accompanied by palliative measures that must be taken into account and integrated into the corresponding public tender.

Concerning the procurement issues, it is relevant to mention that despite the knowledge and experience of the project partners in the public works bidding activities, it is evident that to fulfil all the requirements of the environmental authorities, launch the public tender, select the winners and execute the work in the next two years time is much more than a normal challenge.

Despite all the above, if as expected the environmental authorization is adopted in the coming weeks, it will surely represent an unlocking of the situation and a boost in the implementation of the project, including the unlocking of the location of the recycling plant.

4.2. Beach Regeneration and public procurement delay

The actions of regeneration of the beach and its surroundings involve the regeneration of the

“Mezquitilla” beach and the works on the beach and equipment of its environment. So far, the

activities carried out are those related to the preliminary studies of the works on the coast and the beach, as well as those related to the conceptualization of the beach and its adjacent areas, bathymetry, environmental quality, geotechnical, coastal dynamics, etc. After the delivery of the environmental restoration project of the surroundings of the Mezquitilla beach to the

environmental authorities (08/29/2019), in the near future, the complete project for the regeneration of the coastal zone will be finalized and submitted to the relevant authorities in order to obtain, before the tendering of the works, the corresponding authorizations. All this will represent a boost in the execution of BRICK-BEACH in one of the most important activities of the project.

4.3. Leadership and political conflicts

The situation indicated in Journal 2, regarding the local elections that took place in Spain and how it could affect the project, initially and given the results of the elections did not have an impact that could be considered negative in terms of project leadership. However, and as noted previously, unexpectedly, the council of Vélez-Málaga municipality decided to consider the possible relocation of the recycling plant, with the consequences indicated and questioning the implementation of the project within the

established deadlines. It is clear that one of the actions that must be carried out and aimed at mitigating the situation described above, is the realization by the municipality of Vélez-Málaga of a didactic work and explanation to all the parties involved - including the government partners of the city council- of the very nature and characteristics of the Urban Innovative Actions, circular economy, legal commitments, execution period, consequences of the non-execution of the project, impact on society, etc.

4.4. Communicating with target beneficiaries

Communication with the final beneficiaries has continued at a good pace in the period analysed and, in general, the response of the different neighbourhood, economic, social, cultural, educational associations, etc., is being very positive. However, two elements should be taken into account in future actions. In the first place, and having in mind the possible protest of some neighbours close to the location of the recycling plant, it would be necessary to develop some communication actions specially addressed to this group in order to clarify the doubts and answer the questions and comments they could make regarding the project and the

impact of the recycling plant in the area planned for its construction. Secondly, and taking into account the prompt incorporation of a communication company into the project, a larger campaign than the one realised so far should be established, in order to make the general public aware of all the dimensions of the BRICK-BEACH and not only to the more concerned neighbours. Finally, it is important to maintain a constant rhythm of information on the development of the project with complete transparency regarding the vicissitudes and the execution times of the project.

4.5. Up-scaling

The problem that tries to tackle the BRICK-BEACH project is not exclusive to the area in question.

On the contrary, the high population density of the coastal areas, the impact of the construction

sector, the waste that this industry generates in many ways disorderly, the high number of tourists during the summer, the climate change and its effects on beaches and coasts, are common problems throughout the Mediterranean coast. In this sense, requests for information continue to be received from other municipalities along the coast, interested in the proposed project and solutions.

The BRICK-BEACH project is committed to continue disseminating the results on a larger scale than the local one. Both the national and regional administration are currently in the programming phase of the European Structural and Investment Funds for the period between 2021-2027. Without a doubt, within the priority programming axes, actions such as BRICK-BEACH

is an example that can be taken into consideration for its replication on a larger scale. In this sense, the BRICK-BEACH project, as a circular economy project, can and should be present in the debates, seminars and working groups that are constituted, presenting its objectives, results and methodology at the national and even European level.

The recent participation of the BRICK-BEACH project in two European events such as the European Week of Regions and Cities (October 7-10, 2019) and the first Round Table on circular economy in regions and cities organized by the OECD (July 4 of 2019), in which they had the opportunity to present the experience of the project, are two clear examples of the will and commitment of the BRICK-BEACH project managers in disseminating it.

MAPPING BRICK-BEACH AGAINST THE ESTABLISHED UIA CHALLENGES

Challenge	Level	Observations
1. Leadership for implementation	High	The leadership of the project and its level of implementation are being questioned due to the decision of the city council to analyse the relocation of the recycling plant. Although the municipal elections of last April have not substantially changed the composition of the government team, the lack of political agreement recently emerged in the government team of the city council, represents a greater risk and challenge in terms of its capacity of carrying out the BRICK-BEACH project within the established deadlines. This situation should be solved as soon as possible in order to place the BRICK-BEACH project on the path of its implementation and not at the centre of a political debate that should have been resolved in the genesis of the elaboration of the BRICK-BEACH project.
2. Public procurement	High	BRICK-BEACH is an UIA complex project with relatively large-scale capital expenditure and interventions that requires a lengthy procurement process and previous administrative authorisations. The delay on getting the environmental authorisation and the uncertainty on the final location of the recycling plant affects negatively the project implementation in due time, representing 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, is inviting 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	At the level of the project partners, the system of monthly meetings and “ad-hoc” meetings when necessary, as well as the system of communication and transfer of relevant documents is working properly promoting a fluid participation of all project partners.
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, given the high delay in different activities, the monitoring and evaluation is a challenge for the project. A complete reprogramming of the deliverables, taking into account this situation, is necessary.
6. Communicating with target beneficiaries	Medium	Communication activities, especially those aimed at neighbourhood associations, educational, social, etc., represent one of the strengths of BRICK-BEACH. Nevertheless, there are some risks that must be treated properly. The first is related to the high expectations created among residents close to the beach and the possible frustration if they are not reached. Secondly, the apparently protest of some neighbours regarding the location of the recycling plant. Both elements represent a real risk for BRICK-BEACH that must be deal as soon as possible.
7. Up scaling	Medium	BRICK-BEACH, due to its innovative nature, the problem it addresses, the potential impact on the environment and the expected final benefit for citizens, has all the elements to be transferable at regional, national and even European level. However, given the risks and challenges mentioned, it is possible that BRICK-BEACH may finally be perceived as a problematic project for the main beneficiaries, which should be taken into account when promoting its transferability.

5. LESSONS LEARNT

After more than a year and a half since the start of the BRICK-BEACH project, different lessons can be drawn that, in some cases, should be taken into account in the coming months.

The first lesson that can be extracted to date is that an innovative project in the field of circular economy such as BRICK-BEACH requires a deep analysis of advantages and inconveniences prior to its proposal and launch. The establishment of working groups and, in short, the realization of an ex-ante analysis, is a fundamental condition to reinforce the success options of a project of this nature.

The second lesson that can be drawn, although it seems obvious, is that a political consensus of at least the government partners, embodied in some kind of formal agreement, is absolutely necessary. Projects such as BRICK-BEACH, with an evident impact on the living conditions of many residents and neighbours of the areas and with emblematic actions such as the regeneration of Mezquitilla beach, require clear, transparent and stable political agreements that are not subject to political fluctuations.

Many times has been mentioned the complexity of the BRICK-BEACH project. This complexity can be noticed, among other aspects, in the public procurement and more precisely in the environmental requirements to be issued by the regional and national authorities for both the recycling plant and the beach regeneration previously to the public tenders. In this respect, the main lesson learnt has been that practical administrative issues and legal aspects should be taken into consideration earliest and in any case

before establishing the final project and contractual timeframes. This is a complex bureaucratic process which requires months and, as already mentioned, a stable political context within the public entities themselves.

BRICK-BEACH is a project that involves a significant number of partners, neighbours and residents of different areas of the municipal territory. Likewise, the media impact that is reached, its innovative character and the high expectations created in terms of its final results, makes the communication of its objectives and actions one of the most important aspects that require greater attention. In this sense, another lesson that can be extracted so far from the BRICK-BEACH project, is the need to design and implement a communication strategy with a more didactic character, presenting the risks and challenges that must be addressed and targeting the public in general and the political and economic interest group.

Finally, another lesson that can be extracted so far from the BRICK-BEACH project is that not all projects are the same. In effect, the BRICK-BEACH project is a UIA project and, like all other UIA projects, subject to financial, implementation and limited time rules for its execution. The fundamental difference is that BRICK-BEACH includes a high number of public tenders for works submitted all of them, as it cannot be otherwise, to the relevant prior administrative authorizations. In this sense, the time of three years to carry out all the actions and achieve the expected results taking into account the challenges and risks mentioned in previous pages, is simply almost impossible to achieve.

6. CONCLUSIONS

The main conclusions for this Journal 3 can be summarised as follows:

- BRICK-BEACH is in a critical moment and with a high degree of uncertainty. Although the municipal elections last April did not represent an important change in the municipal government team, surprisingly, one of the fundamental elements of the project, such as the location of the recycling plant, is questioned within the own team of the city hall government. If we add to this the accumulated delay in obtaining the environmental authorization for said plant, the panorama is quite worrying. Notwithstanding the foregoing, the project partners have continued to work on the preparation of different studies related to the construction of the plant in the planned area (geotechnical study, electricity supply, Technical Plan for Waste Management of the plant, and the Study on the Acoustic Impact).
- The University of Malaga has continued with the tests and analysis of materials to be used for beach regeneration, as well as the Environment and Water Agency (AMAYA) has carried out the plan for the environmental regeneration of the land adjacent to the beach. In the coming weeks, the coast regeneration project will be completed once the relevant studies related to bathymetry; environmental quality, geotechnical characteristics and coastal dynamics have been finalised. Unfortunately, there are also very important delays in this area, which will imply a risk of not executing the BRICK-BEACH project within the established deadlines.
- In relation to communication activities, during the analysed period, a large number of events have been carried out aimed at neighbourhood, cultural, educational, social associations, etc., together with participation in large-scale seminars such as those organized by the OECD (Roundtable on the Circular Economy in Cities and Regions), the European Week of Regions and Cities or the World Oceans Day. In those events, recommendations and proposals have been collected from the attendees that, as far as possible, will be taken into account when preparing the project related to the activities to be developed in the beach and surroundings.
- The project management is undoubtedly one of the strengths of BRICK-BEACH thanks to the professional team and the commitment of its components, as well as the participation of the project partners. Regular meetings and the communication system continue to function smoothly and effectively. However, and due to the accumulated delay in administrative authorizations and their impact on the bidding of works, as well as the situation created in terms of the location of the plant, is representing a risk in the smooth running of such management. A reprogramming of activities and results is highly recommended.

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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