



Good Practices Catalogue

for International Knowledge Exchange

13 Good Practices
in valorization of
water-linked heritage
from 5 European locations

Good Practices Catalogue

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Introduction by Delft University of Technology

This document presents a catalogue of good practices in valorization of water-linked heritage from five European locations: the Municipality of Aarhus (DK), the Province of Alicante (ES), the Municipality of Breda (NL), Ister-Granum cross-border region (HU-SK) and the Municipality of Ravenna (IT). The good practices were identified as part of the Interreg Europe project "WaVE" (Water-linked heritage Valorization by developing an Ecosystemic approach). The project is concerned with the development of integrated adaptive reuses of water-linked cultural heritage sites in human settlements, both at the local and regional scales. The project capitalizes on interregional knowledge exchange to help improve policy instruments for integrated valorisation of cultural heritage related with water, to spark new ideas for engagement of stakeholders in this process, and to raise awareness of the potential of water-linked heritage to bridge different policy agendas, from place-making, to environmental protection, economic development and climate adaptation.

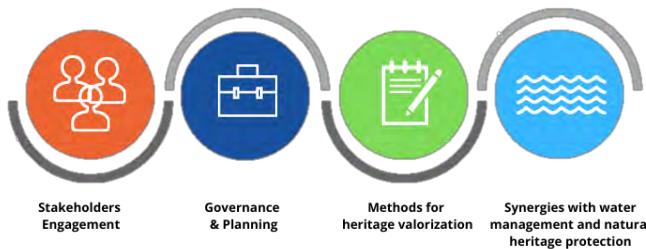
This catalogue brings together thirteen good practices identified by the participants of the WaVE project in their respective areas. The good practices were classified according to four thematic foci.

First is **stakeholder engagement**, which played a central role in the WaVE project. By stakeholder engagement we understand efforts to broaden the participation of citizens and other key stakeholders, from the private, public and non-governmental sectors, in valorisation of heritage. Practices related to this theme are concerned with participatory practices, story-telling around heritage to develop shared understandings, attract attention of stakeholders and galvanise participation, establishment of dialogue between parties affected or affecting heritage valorisation, means to foster new cooperations around heritage and to co-creation knowledge with stakeholders.

The second theme reflected in the good practices presented here is **governance and planning**. This theme relates to aspects of inter-institutional cooperation, multi-level governance (that is cooperation across levels of government and across the public, private and civil society sectors), and strategic planning (understood as efforts to foster and exploit synergies across policy sectors and agendas and/or between interventions implemented in different areas). This theme also encompasses practices that are linked to local (urban) planning practices (land use issues, zoning, regulation, etc.), dimensions of process management, and financing models (e.g. aspects of public-private partnership, combinations of funding streams).

The third theme reflects the core focus of the WaVE project, that is **innovative approaches and practices in valorisation of water-linked heritage**. This category includes a variety of practices not only at protection of cultural heritage, but using it as a vector for place-branding, identity-building. The practices in this category also can combine efforts in valorising both the tangible aspects of heritage (building, public spaces, infrastructure) and its intangible aspects, such as shared stories, local ways of doing things, traditional social, economic or cultural practices, methods of cultivating land, etc.

The final theme covered by the good practices collected in this catalogue refers to seeking synergies between protection and valorisation of cultural heritage in the built environment with efforts and policies to manage water, reduce flood risk, mitigate climate change impacts and protect or restore the natural environment. This theme reflects the **holistic and eco-systemic approach** to heritage valorisation that the WaVE projects strives to promote.



In practice, as will be evident from reading this catalogue, many of the good practices cut across several of the themes identified. These overlaps illustrate well the potential for generating synergies between the thematic foci of good practices and integrating various policy goals and agendas through innovative approaches to water-linked heritage as a vector for broader transformation of cities and regions.

	1. Stakeholder engagement	2. Governance and planning	3. Methods for heritage valorisation	4. Synergies with water management and natural heritage protection
Includes...	Participatory practices, story-telling, dialogue, co-creation, co-operation approaches, etc.	Inter-institutional co-operation, multi-level governance, strategic planning, local planning, process management, financing models	Innovative methods for valorising cultural heritage, place-branding, identity building, valorising both tangible and intangible aspects of heritage, etc.	Practices that cross the policy sectors boundaries to seek synergies between heritage valorisation and water management and natural environment protection
The Adriatic Sea, a Shared Heritage				
Aqua Phone Festival				
Vega Baja Artichoke				
Blue Routes				
Bridge Guard Residential Art				
Urban Mediaspace				
The uncovering of the River Aarhus				
Provincial Water Board				
(Re)development in Dialogue				
Redoute				
SACHER project				
Theseus project				
Water Museum of Esztergom				



1. **Adriatico Mare Comune**

**The Adriatic Sea:
a shared heritage**



1. Adriatico Mare Comune (The Adriatic Sea: a shared heritage)

“When the vision is created based on the residents' input, this brings the whole community on board and it will have the needed support and be a lot easier to achieve the desired results. Without vision and goals, the municipality will be a ship without a rudder — it will be going aimlessly in all directions without reaching any planned destination. (Simona Melchiorri - Head of the European Policy Office in Cervia (RA), Italy)

1.1 Detailed information

Cervia is a seaside town in the province of Ravenna, located about 20 km south of the province Capital. It includes four sea-side resorts along its 10 kms of sandy beaches: Milano Marittima, Pinarella, Tagliata and Cervia. Its origins date back to the greek times and over the centuries it has always been famous both for its commercial activities (the port, the saltponds and the entertainment) and for its natural protected heritage (the saltponds included in Po Delta Park of Emilia-Romagna Region is considered as Site of community importance (D.M. 65/00), Ramsar zone for the protection of wild birds (D.M. 13/7/81) and Natural reserve for animals (D.M. 31/1/79); the pinewood – NATURA 2000 area). Based on the city planning buildings are subject to strict urban regulations, favouring the conservation of the pine forest and green areas between each new construction.

The main challenges were:

1. protection, preservation and promotion and touristic valorization of the cultural heritage connected to sea and salt production, that is protection of the existing tangible and intangible heritage and its systematical exploitation through a series of measures, in order to develop and revive a common tourism product.
2. fight of flooding phenomena, coastal erosion, salt intrusion, subsidence, etc. to protect populations, the environment and infrastructure through a sustainable approach to their preservation and management
3. ensuring navigability and access to the port throughout the year, thus allowing at the same time thriving maritime economy and environmental sustainability.

By focusing on the identity of the town and by enabling community participation, the Municipality managed to implement the vision of the former political administration and faced all the existing challenges - environmental protection, climate adaptation, promotion and valorization of historical and cultural water-linked heritage, both tangible and intangible - by converging different projects, funded by different European programs, ERDF ROP funds, EMFF, EAFRD, or other national and regional funds.

The main goal was to preserve the beauty of the town and at the same time to improve its attractiveness and inclusiveness so as to create new opportunities and trigger new developments and energies. They focused on three specific objectives:

- recovering and evaluating the identity of the town, by preserving local traditions but at the same time opening to innovation
- using culture as outdoor contamination of the town
- urban regeneration starting from the town symbolic elements (town centre, the canal, the lighthouse) in order to exploit their economic and tourist potentials

Starting from the old salt-warehouses located on both sides of the canal (used in the past to carry the salt from the saltponds in order to be stored and shipped) the Municipality has undertaken an urban regeneration plan aimed at reappraising and reusing all of its water-linked heritage.

Citizens were the common stakeholders of all implemented projects, as well tourist operators (hotel keepers and shopkeepers). Also, tourists were direct/indirect beneficiaries of all the projects.

Other stakeholders – differentiated based on the tackled thematic issue – included: public authorities and their staffs, sailors, fishermen, students, category associations, cultural associations, volunteer associations.

As far as the interventions in the port area are concerned, the fishermen, and nautical operators were the main stakeholders as the implementation of the projects affecting the port required also a reorganization of the fishing activities by means of a new municipal regulation. Some negotiation was therefore required. The main goal was to reorganize the fishing activities in order to better integrate them with the other economic activities, in the frame of urban regeneration.

Conflicting opinions are registered among citizens and economic operators on the experimental technique used to keep the canal bottom dragged, but the experiment (being a pilot area of a LIFE funded project) is not completed, so the opponents are currently waiting to prove they are right.

Excellence Centre was established within Arca Adriatica project, gathering stakeholders from different town sectors, such as fishermen, sailing centres, cultural associations, tourist associations. They committed themselves to support the administration in the implementation of the activities foreseen in the project. They therefore regularly met in thematic issue committees, based on their specific interests and competence, bringing their positive contribution, under the Municipality coordination.

Within the Culturecovery project, citizens were involved in workshops on cultural intangible heritage and schools involved in an international contest (including a video challenge). Also, this experience proved to be very positive.



1.2 Resources needed

The overall funding, including co-financing where foreseen, amounts to ca. 5.5 million euros. Almost all the Municipality's departments have been involved in one or more projects, each based on the specific competence, ranging from Tourism to Culture, Urban Planning, Environment. The European Policies office has been involved in all projects in all of the phases from application to final reporting. The average number of staff was 4 people per project

1.3 Evidence of success

We deem it a good practice because starting from its long-term vision the Municipality has managed to act on different aspects of the town regeneration and to overcome all emerging challenges, by converging different projects funded by different European and/or national projects.

The role of the stakeholders was fundamental as the engagement was a co-creative one, that is stakeholders were not only informed or consulted but they had an active part in the decision-making process and the Municipality took into considerations their positions.

1.4 Challenges encountered

The main challenges encountered during the implementation of the different projects were the following:

- minimal internal coordination problems (Municipality's internal staff is limited and everybody is already overburdened with daily activities)
- need to meet and deepen dialogue with some stakeholders, referring to fishermen, in order to reduce their distrust as in some cases the intervention would directly affect their activity. So, it was important to explain benefits of the operation
- the main difficulty was represented by matching the needs and times of the European projects with the specific provisions of the Italian Public Procurement Code. For example, whenever a candidate appeals against a contract award the Code foresees a 3-month time for the review, but the project does not allow such time extension. The same problem arises when a company of a Temporary Group of Tenderer Enterprises goes bankrupt during the implementation of the projects. The times foreseen for the replacement heavily affect the project working plan. Such challenges have been encountered and luckily overcomed by Cervia's Municipality.
- As far as participatory activities are concerned, it is important to "keep alive" the attention and satisfaction of participants through the whole project implementation, as the participation is voluntary based. Despite the positive background, this activity is not obvious and easy to implement as such, because of any possible internal organisational issue, or any external constraints due to possible problems encountered during the project implementation
- Whenever you touch the private activities, there might be externalities which could negatively affect the project implementation. For this reason, where necessary, consultations prior/during the project preparation is important



1.5 Potential for learning or transfer

We deem this practice as potentially interesting for other regions, namely for small and medium-sized towns, as it offers a comprehensive and successful valorisation approach.

Through a skilful involvement of all the Municipal departments and collaborative engagement of local stakeholders the town has managed to attract funds and invest in environmental protection, climate adaptation, promotion and valorization of historical and cultural – both tangible and intangible - water-linked heritage.

The practice is highly transferrable as it is based on EU funded projects. Basically, starting from a clear local planning (transposing EU-national-regional indications), the related planning tools and policies were developed, the “hard” investments were prepared, and the matching and merging “soft” actions were built (ref. cooperation projects). It can be considered as methodology applicable in other territories. Moreover, the outputs of the cooperation projects are transferrable as conceived as such within the projects themselves.

1.6 Further information

<http://www.comunecervia.it/aree-tematiche/europa-e-relazioni-internazionali/progetti-di-cooperazione/progetti-di-cooperazione-in-corso.html>

WHY DID WE CHOOSE ADRIATICO MARE COMUNE?

We deem this practice as potentially interesting for other regions as it offers a comprehensive and successful valorisation approach. Through a skilful involvement of all the Municipal departments and collaborative engagement of local stakeholders the town has managed to attract funds and invest in environmental protection, climate adaptation, promotion and valorization of historical and cultural – both tangible and intangible - water-linked heritage.

[Stefania Gambi - European Policy Office – Municipality of Ravenna, Italy]



2. Aqua Phone Festival



2. Aqua Phone festival

“ The AquaPhone cultural festival contributes to the preservation and valorisation of an intangible heritage. It features literature from Hungary and Slovakia and acts as a cultural bridge between the nations that have been isolated from each other’s

2.1 Detailed information

AquaPhone Festival takes place on both banks of the Danube, in Esztergom (HU) and in Štúrovo (SK). It not only features literature from Hungary and Slovakia but also acts as a cultural bridge between the nations that have been isolated from each other's shared histories by totalitarian rule. The purpose of the AquaPhone event is to revive an old custom that was spread in the early 50s of the last century. It crosses borders, cultures and languages on the Danube.

The Maria Valeria bridge crosses the Danube connecting Štúrovo in Slovakia with Esztergom in Hungary, it is 500 meters long. The bridge was built in 1895, at a time when the cities of Esztergom and Štúrovo (then known as Parkan/Párkány) both belonged to the Austro-Hungarian monarchy, of which Slovakia had been a part for centuries before it started to assert its own language against the dominant Hungarian in the nineteenth century. After World War I, Parkan/Párkány became a border town in the new Czechoslovak Republic, one of the largest number of cities and territories Hungary had lost. They weren't returned to Hungary after World War II either. Many Hungarians (and Germans) were forcibly expelled, further exacerbating the trauma. The bridge was severely damaged by German air raids in 1944. The connection between Esztergom and Štúrovo was severed for 57 years, and it wasn't until the early 1960s that a ferry started to carry people and cars to and fro. The Hungarian population was reduced to a minority, and relations between the two countries remained fraught for decades. Tensions also marked the first few years after the end of communism in 1989.



The Slovak and Hungarian governments agreed to rebuild the bridge at the last minute at the end of the millennium, as EU funding was about to expire. Opened in October 2001, the bridge has reconnected the two cities. Apart from its practical use, it represents a key moment of reconciliation between Slovakia and Hungary. It has become a symbol of peace and a symbol of cultural cooperation that connects the city of Štúrovo in Slovakia with Esztergom in Hungary.

It took nearly sixty years for Slovakia and Hungary to agree to rebuild the bridge. Of course, the bridge was not to blame for the fact that the two countries couldn't find a way to communicate. It was the absurd policies of the totalitarian regimes that made matters more difficult, stopping people from travelling and visiting each other.

However, **friends and relatives found a way to talk to each other**. They went to the opposite banks of the river, preferably in windless conditions—the early morning or early evening—and exchanged news, sometimes even coded messages. Water could be relied on to carry the sound—when a dog barked on the Esztergom side, it could be clearly heard on the other side in Štúrovo, except that the bark might have taken up to two seconds to cross the Danube, which is half a kilometre wide at this point.

The **AquaPhone performance refers to this phenomenon**, honouring all the lives whose secrets had at one time been entrusted to the Danube, recalling this testimony of people's yearning to talk together, and of their inventive genius bridging borders and distances under difficult conditions. It not only features literature from Hungary and Slovakia but also acts as a cultural bridge between the nations that have been isolated from each other's shared histories by totalitarian rule.

It is a 1-hour **cultural event with its accompanying events** held in June each year and organized by the Cultural Associations of Štúrovo and the Surrounding Area (Párkány és Vidéke Kulturális Társulás). The initiator and the inventor of the event is Karol Frühauf. Originally it was planned to organise the event only once, in 2006, but because of its success it has been organised in each year since 2006.

During the event Slovakian and Hungarian poems, dialogues are read on opposite sides of the river while musicians improvise along. The public can only hear the chaotic soundscape, as it arrives – late – on the other side. Today, beside of the AquaPhone performance there are other accompanying cultural events in both cities.



It is a **multilingual event**. Reflecting on past and present social conditions, the organizers of the event in each year ask different German, Hungarian and Slovak artists to write a literary work (e.g.: a poem, a dialogue) which are always translated into the other two languages. The event **reflects on a past situation** where the Danube and the river surface have their own communication functioned as a channel.

The main **beneficiaries** of the event are the local inhabitants in Esztergom and Štúrovo, but also tourists can enjoy this free-of-charge event.

The main **stakeholders** are the organiser of the event (Cultural Associations of Štúrovo and the Surrounding Area), Karol Frühauf, who fond the Štefan and Viera Frühauf Fonds is mentoring and sponsoring the event, the Municipality of Štúrovo, Municipality of Esztergom, the authors of the poems and dialogues, the artists and musicians who are performing during the event. All stakeholders are supporting the event.

22 Resources needed

Cca. **8-10 persons** are actively participating in the organisation and implementation of the event. 1 among them is working 8 hours/day, 5 day a week in May, and June, the others are helping him during in the implementation. They are all **volunteers**.

Different authors are asked in each year to write a literary work. The texts are read by speakers on both sides of the Danube and crossing it in the original language and in translations (Hungarian, Slovak and German versions). The original language of these works is Hungarian in one year, Slovak in other. It is always accompanied by improvisations on cello and clarinet by 2 Swiss musicians, from one is playing in Esztergom, one is Štúrovo. The musical amplification of the event is provided free of charge in each year by a company from Bratislava.

The **total cost** of the The Aqua Phone festival, together with its side events, including a creative literary course for high school students and adults on the day before the Aqua Phone; an author-writer meeting and lecture; a Book Festival with participation of publishers from Slovakia, Hungary, and Germany, a cultural exhibition and a concert of a local bands on the day of the Aqua Phone is **28000 eur/year**.

The main **sponsor** of the project is the **Štefan and Viera Frühauf Fonds**. In each year 2 Swiss musicians create a musical improvisation for the literary works and they provide the musical background of the event. Their costs (including their fees, travel costs and accommodation costs) and the fees of the poets and writers of the literary works is 20 000 Eur/year. It is fully paid by the main sponsor.

The “Párkány és Vidéke Kulturális Társulás (**Cultural Associations of Štúrovo and the Surrounding Area**)” takes on the responsibility for the organisation of the event and does the marketing and promotion, what's cost is cca. 6000 eur/year. The **Municipality of Štúrovo provides** cca. 10% the total budget of the project.

2.3 Evidence of success

The project is **popular among local inhabitants and also tourist** who love culture, especially in the Slovak side of the Danube, but in 2019 the event got higher marketing also in Esztergom, so compared with the previous years there were more participants also from Esztergom.

Tangible results:

- The Aqua Phone has been organised 14 times together its accompanying events
- 14 different well-known Hungarian and Slovak authors wrote a literary work about the Danube and about bridging and connecting people
- The event was fully video documented in each year
- Alfred Zimmerlin and Markus Eichenberger Swiss musicians created a music for the event 14 times
- Cca. 500 people participate in the event and its accompanying events each year, from both side of the river
- A book was published (Title: AquaPhone Štúrovo–Esztergom 2006–2015) about the first 10 years of the event, including also the idea behind the Aqua Phone and the history of the Bridge, Esztergom and Štúrovo

This practice **contributes to the preservation and valorisation of an intangible heritage**. The intangible heritage is a difficult period of people who were isolated from each other by the River due to the consequence of the war destroying the bridge. The Aquaphone event preserve the memory of this period as heritage and act as a warning sign for not making the same mistakes in the future. This practice is a special way of storytelling.

2.4 Challenges encountered

Challenges: As the Aqua Phone performance is open –aired the main challenge of the practice is the weather. Potentially it can cause some problems in the implementation, but in reality there were no real problems because of it. The event was organised every year. In the 1st Aqua Phone it started to rain in just that moment when the event started. Before the end of the performance the rain stopped and a double rainbow appeared over the Danube. As the idea beyond the event is to connect Esztergom and Štúrovo one of the challenges is how to do that. Another challenge is to figure out how to involve more participants as nowadays this type of arts attracts few people. Potentially the event can be expanded with more accompanying events, what would attract more people as the basic infrastructure is given for that (e.g. there is place at the bank of the Danube for more participants.), but the organisers (who are volunteers and belonging to older generations) currently not aiming to increase the attendance. Maybe if the 2 municipalities (the Municipality of Esztergom and the Municipality of Štúrovo) would give more support for the organiser, and there would be a co-organiser also in Hungarian side this could be achievable...

Lessons learned: In the first years the organisers faced with some difficulties related to the organisation of the event, because they did not have any experience on that field, but they have solved these issues quickly. The promotion of the event was not sufficient in Esztergom until 2019, as the organisers are from Štúrovo and there was only ad-hoc cooperation between the Párkány és Vidéke Kulturális Társulás (**Cultural Associations of Štúrovo and the Surrounding Area**) and the Municipality of Esztergom and the local DMO in Esztergom, so there were less participants from that side, than from Slovakia.

There are no negative externalities

2.5 Potential for learning or transfer

Organising a similar event is quite **easy and can be done almost everywhere**, but should be connect somehow to local traditions, history, other kind of heritages. It can be a way of remembrance of an important historical event, or can draw attention to a forgotten tradition, natural or cultural heritage through art.

The practice is one-transferable in places where there is a river, or other kind of waters, especially if this is a natural border between two countries or regions.

We think that organising a region-specific event is a way of storytelling and can be done almost everywhere.

The innovative character of the practice is that it transforms a habit of people in a historical period into an art performance presented in the current period. This is an innovative and a positive way of remembering and preserving intangible heritage. This practice is a storytelling method which applies art and water. This practice is adaptable as not strongly place specific, not requires huge financial resources for implementing and sustaining it. In addition, it can be applied in whole Europe, especially in the once Soviet block of Europe which was especially effected by isolation during the war and the Communist period (people had to immigrate, families were separated, minorities deported, country borders changed and closed for years etc).

The 3 main adaptable elements of the practice are:

- 1) a historical story related to the isolation by a water body
- 2) a water body which distinguish human settlements (river, lake, channel, sea bay)
- 3) sound based art performance

It would be a better practice if the cooperation would be better between the Hungarian and Slovak actors and if there would be also a co-organiser in Esztergom and if it would have more intensive promotion.

2.6 Further information

<https://www.transartists.org/article/learn-language-your-neighbour>

<https://newsbeeper.com/slovakiaeng/sturovo-brehy-danube-will-connect-aquaphone-again/>;

https://www.danubeculturalcluster.eu/sites/danubeculturalcluster.eu/files/attachment/2018/aquaphone_invitation_20180417.pdf

WHY DID WE CHOOSE AQUA PHONE FESTIVAL?

The Aqua Phone Festival was chosen, because it contributes to the preservation and valorization of an intangible water-linked heritage. Moreover, it is an inexpensive and special way of storytelling and its idea can easily be done almost everywhere



A large aerial photograph of agricultural land, likely artichoke fields, showing rows of green crops and several small buildings or irrigation structures. The land is divided into various plots by roads and walls.

3.
Vega Baja
Artichoke
a product of
traditional irrigation



3. Vega Baja Artichoke Brand

“ Promotion of a brand -Vega Baja Artichoke- around the traditional irrigation system as key element for the sustainable economic development of the region, by creating opportunities for agro-alimentary industry, gastronomic tourism and environmental education

3.1 Detailed information

The lower basin of the river Segura, called Vega Baja region, has an arid Mediterranean climate, dry and with shortage of water resources, although suffers notorious flood events. The area is a relict wetland, characterized by shortage of slope and shallow ground water table.

Almoradí is a mid-sized town of around 20,000 inhabitants located in the heart of Vega Baja, that has suffered its latter flood in September 2019. It was an extremely harmful event that led the town without electric and water supply for days and that even took two human lives.

The most important heritage in relation to water in this region is the traditional irrigation system, an ingenious, complex and labyrinthine build, designed in order to irrigate with a continuous reuse of water.

Traditional irrigation is performed by inundation. This technique had bad press nowadays because it is supposed to be highly inefficient, but it is not with the management strategies developed in this area: water is distributed by a complex system that allows irrigation by inundation and at the same time drains the farmland recovering the irrigation surplus that is reused downstream. This way water is reused four or even five times before it reaches the river mouth and prevents soil salinization by washing down salts.



The heritage related to this system is then both the infrastructure –tangible heritage– and the know-how developed in the area during centuries –non-tangible heritage. However, it is not well known by the civil society and it is usually thought that a lot of water is wasted.

Furthermore, traditional irrigation areas can be used to mitigate floods. Last extreme events had activated the alarm, and so the Administrations have created multidisciplinary expert teams in order to evaluate alternatives and act on soil use management, enabling floodable zones in the farmland areas.

The creation of the brand Vega Baja Artichoke (Alcachofa Vega Baja) has been a game changer for the area, favouring economic development, and rising awareness of the values of irrigation for the area.

The artichoke, which has gained recently reputation as one of the ‘superfoods’ according to its nutritional properties, has become the best ambassador of the agriculture of this region. It is also somewhat a gourmet product, highly appreciated for some recipes in which its round mass of pointed parts like leaves are scraped/discard, using only the soft heart, and so there is a gastronomic offer around it in the area.

The practice reaches its objectives with a set of concrete actions:

- Creation of an association to promote the brand. The annual membership fee is 500 €.
- Collaboration of public and private stakeholders.
- Marketing investment to give visibility to the brand: web page, social media, recipe books (paper and online), ambassadors of the product (usually “mediatic” chefs), etc.
- Annual exhibition that gathers over 20,000 people at Almoradí.
- Educational tours for students.

The main stakeholders and beneficiaries of the practice are:

- Almoradí City Council.
- Irrigation associations.
- Business linked to agriculture and gastronomy.
- Regional Government.

The associations of irrigation farmers welcome all the activities hosted by the public administrations to help their activities. Therefore, stakeholders support the practice and no important conflicts have arisen. Moreover, the City Council plans to create a “Cultural Park” around traditional irrigation and its products, and especially but not exclusively the artichoke, to valorize the area and its environmental values.

The City Council is very interested in improving land management to confront climatic challenges by creating strengths, in broadcasting the good practices of sustainable traditional irrigation and in adding value to the agriculture products by mean of branding them.

The civil society also is very receptive to initiatives that increase the value of local products and create leisure opportunities.

This particular moment seems to be optimal to promote these kind of sustainability strategies in an area prone to global climate change effects.

The Water Dept. of Diputación de Alicante has played a very important role during the last three decades in the management of water resources of the province, focused in urban water supply and sanitation. During the last decade, awareness about irrigation agriculture and its role in land use management has grown in the organization. A specific call for funding has been created to support the improvement in the efficiency in irrigation. In addition, after the last flood events, it is also concerned with the land use management in the area. Therefore, it has signed in January 2020 a public-private collaboration agreement with an enterprise (Suez Spain) to develop a platform for the analysis and response optimization against floods in Vega Baja, and the role of irrigation infrastructures will be analysed.



JOYA DE LA HUERTA

3.2 Resources needed

Human resources, as the stakeholder analysis reveals, are always key to success in these kinds of initiatives. Therefore, the good practice requires human resources at various levels. At the same time, part of the good practice itself is to create synergies between the available human resources.

First and foremost, human resources were gathered creating a core team (basically formed with members of the City Council and of the producers) to manage the stakeholder's groups and to find a proper and consensual approach. In this case, the assessment of the Regional Government had an important role in the definition of the type of brand to create.

Afterwards, it is important to create a constellation of stakeholders to promote and support the strategy of valorization. The creation of the Artichoke Vega Baja association and the recruit of members has been another key resource of the project.




Regarding financial resources, funding has been required to accomplish the marketing actions. This investment has included public and private funds. The basic costs are of maintenance (web page, news) are funded by the memberships. Some extra campaigns and events (election of ambassadors, etc.) are held with the collaboration of the City Council. The annual exhibition is funded also by the City Council but has a direct return of the inversion due to the high commercial activity that brings to the municipality.

In the future, if the practice is going to grow and to broaden its scope there will be higher funding requirements for activities such as:

- The kick off and maintenance of a visitor centre. An initial public investment would be likely necessary, but its maintenance cost ought to be supported, at least in part, by the inputs it makes from visitors and sponsorships of producers.
- Civil works required to redevelop floodable areas.
- Conditioning cycle paths, including informative panels about water management.
- Actions to adapt the environment for leisure and visits.

Going beyond the financial and human resources needed, one of the enabling conditions that made the practice possible has been the existence of a team of public workers with technical skill in the areas of water, environment and land management that have been involved in the project.

Also, the skills of the farmers that have inherited and assimilated an ancient know-how of water and soil management. Some practices are from the Muslim age in Spain –over 500 years ago- and the first written laws about water management for irrigation in the area belong to the king Alfonso X 'El Sabio' during the 13th century.

3.3 Evidence of success

The most evident results of the practice are obviously related to the production of the artichoke and its elaborated products. The branding strategy has achieved that:

- The Vega Baja region is one of the most important producers of Spain, their artichokes are known by their quality and lead the sales abroad.
- The cultivated surface in Vega Baja is over 2,000 ha that produce 25,000 tons per year.

- This area is responsible for over the 50% of the national sales abroad.
- The area has a very healthy canning industry, that goes beyond artichoke products.

The City Council of Almoradí has been playing an important role developing actions to valorize the area in the near future. An old farmhouse has been restored and conditioned to create the visitor centre/museum on agriculture. It will have experimental plots with different varieties of artichoke and other vegetables of the area, traditional farming tools on display, offering leisure activities through routes connecting water heritage elements and formative workshops related with traditional irrigated agriculture and the gastronomy of its products. It will help to valorize the area creating new uses (leisure, sport, education, tourism), increase the economic opportunities (favoring the local food industry: restaurants, local markets...) while preserving the traditional land uses, that are sustainable and play a role in protection against extreme climatic events.



Linked with this idea of the traditional agriculture as an element to manage the land with environmental sustainability, the importance of the maintenance of traditional ditches networks to use efficiently water resources and to protect territory against floods is now gaining.

The sensibility towards the issue has also reached the enterprises of the sector, such as Suez Spain. As a result, Diputación of Alicante has gone into a partnership with the water supply and treatment enterprise Suez Spain, to implement the 'Smart River Basin' technology that will:

- 1) Analyse the main defense infrastructures to protect/mitigate the effects of floods, especially in urban areas, and evaluate the potential alternative measures to improve the resilience against extreme events.
- 2) Develop an Early Alert System to improve response capability to these events.
- 3) Implement a Hydric Information Management System to design strategies to increase resilience against extreme climatic events and to guarantee the water to the users of the area.

3.4 Challenges encountered

The main challenge has been to redeploy an economic sector that was depressed and around which there was a feeling that it was something of the past.

In the pre-plastics era, the Vega Baja area was specialized in the production of hemp for clothing. After the crisis of hemp, some crops such as the artichoke seemed to be a good alternative, and were popular during the 60's and 70's. Afterwards the increase of the service sector left the farms abandoned.

Therefore, this tendency had to be reversed. The way to do this has been to promote an image of modernity to the product and to reinforce the links between the producers and the sector of alimentation, including the most influential chefs in the area. In addition, the fashion of the healthy food, and a marketing in this sense, has been a catalyst of a new era for this crop in the area.

Now, the challenge for the future is to attract more private investment and to create new opportunities of business in the sector of the gastronomy (tourism, education, etc.).

3.5 Potential for learning or transfer

The transferable aspect of this practice is that other regions in Europe should discover and understand the traditional water management solutions as a vector for cultural/economic opportunities and for the sustainable land use.

Potential for learning from this practice is high, as long as it includes a wide range of elements and stakeholders usually present in water resources management in agricultural areas with water-linked heritage.

Of course, the experience with product itself (artichoke) would not be directly transferrable to other locations and climates. But the idea of strongly branding traditional products and marketing them according to new tendencies and fashions is clearly transferrable.

A very interesting idea of the branding in this case is that the idea of a protected designation of origin or a protected geographical indication has been explicitly avoided. The reason is that a commercial brand gives more flexibility to the producers to import and transform artichokes from other areas, without the restriction that those schemes of geographical indications and traditional specialties have.

Some activities are growing around the valorisation strategy. For example, currently there are visits for scholars where they discover traditional agricultural practices and the artichoke as a healthy product that, in a workshop, they are allowed to manipulate, cook and eat. These visits also create a sense of pride for the products of the land, and so have an identitarian component.

At last, linking the traditional land uses to the environmental sustainability and explaining the population the complex relationships that exist around anthropized ecosystems, are also inspiring ideas to share.

3.6 Further information

<http://www.almoradi.es/turismo/entorno-natural/>
<http://www.alcachofavegabaja.com/la-marca/>

WHY DID WE CHOOSE VEGA BAJA ARTICHOKE BRAND?

We chose the Vega Baja Artichoke Brand as a good practice because it shows how branding the artichoke, a product of traditional irrigation, can change a whole area, favouring economic development (production, exportation, gastronomy...) and rising awareness of the values of the Vega Baja traditional irrigation system



4. **Blue Routes**

Alicante's
hydrogeological
heritage



4. Blue Routes

“ Blue Routes: Guides to Alicante’s Hydrogeological Heritage are suggestions for touristic, hiking and bike routes in the province where the visitor is invited to learn about water heritage

4.1 Detailed information

The province of Alicante possesses a rich and varied geological and hydrogeological heritage, characterised by the presence of numerous unique enclaves. A large part of them are identified and included in different studies and publications prepared by the *Diputación Provincial de Alicante* (Provincial Council of Alicante, DPA), the *Instituto Geológico y Minero de España* (Spain Spanish Geological Survey, IGME) and other research groups. However, since the information has been collected in an unfocused manner, it has not until now been processed homogeneously or systematically, and there are very different selection or presentation criteria and no assessment into the relative importance of each location.

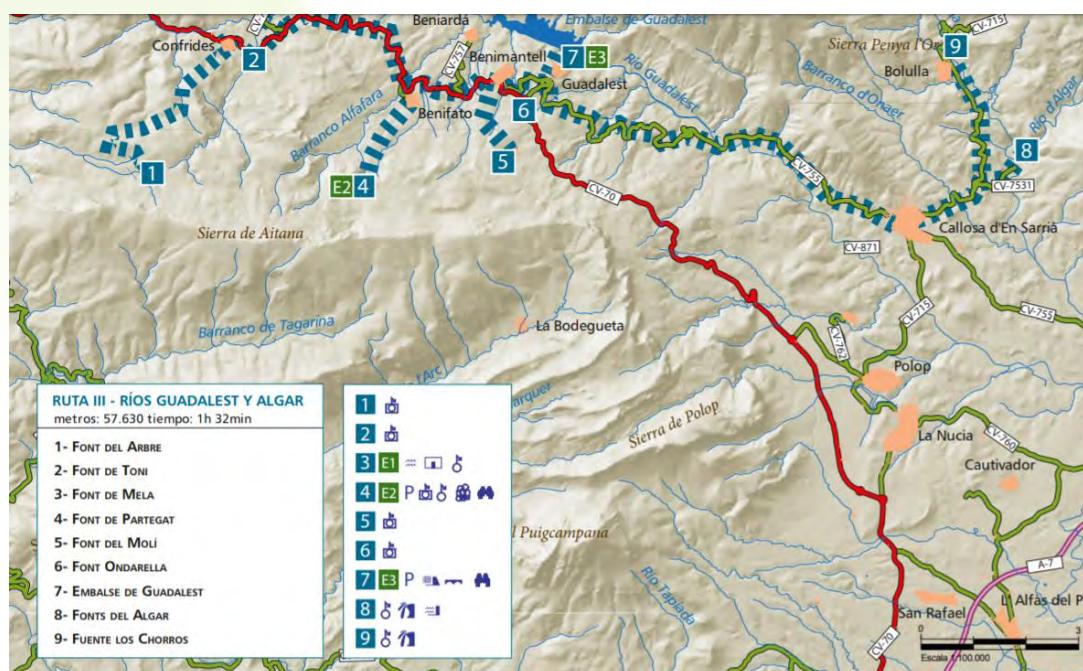
One of the objectives of any characterisation and assessment of natural heritage is to foster its preservation and sustainable use. An extraordinary contribution to this objective is that the general public has knowledge of its value and its suitable form of use and enjoyment, and so its exposure becomes a key factor for its present and future preservation.



To obtain effective exposure, however, the information must be presented clearly, in an attractive and well-structured manner, whilst incorporating the most modern and cutting-edge communication techniques. The increasing demand for guides and products on natural heritage for use during leisure and free time by a wide range of people, and the increasingly more frequent use of new technologies, led to design two interconnected products: two free guides, in printed and pdf format, which include routes covering selected Places of Hydrogeological Interest (PHIs) forming Alicante’s Natural Hydrogeological Heritage, and a web page with all the information.



For more than 30 years, DPA and IGME have joined forces to boost knowledge of the geological and hydrogeological aspects of Alicante. Blue Routes Guide to Alicante's Hydrogeological Heritage has arisen out of the close and longstanding collaboration between the IGME and the DPA on matters of groundwater. Both organisms have collaborated in this project for the appreciation for the hydrogeological heritage of the province of Alicante by means of an orderly, homogeneous and joint methodology that would contribute to its preservation through its most educational, imaginative and topical exposure.



4.2 Resources needed

On 4 October 2010, in the scope of an initial Framework Agreement, which was subsequently renewed, the “2010-2013 Specific Cooperation Agreement on groundwater, between the Instituto Geológico y Minero de España and the Diputación Provincial de Alicante” was signed, with a work programme that included an activity dedicated to the study of the hydrogeological heritage of the province of Alicante. It led to an extensive and detailed report (the Hydrogeological Heritage Project of the province of Alicante) and the subsequent informative thematic guides and web page.



Conoce las Rutas Azules de Alicante

La provincia de Alicante esconde sorprendentes parajes en los que el agua es un espectáculo y paisajes de singular belleza esculpidos por el agua a través de los siglos. Las Rutas Azules es una propuesta para que el viajero descubra estos valores naturales y para que los alicantinos conozcamos y disfrutemos mejor de nuestro patrimonio hidráulico.

Una serie de rutas con especial atención al papel del agua y del ciclo hidrológico e hidrogeológico en la provincia. Esta riqueza hidráulica no alcanza únicamente a sus recursos de agua, sino al paisaje que ésta ha modelado; siendo la naturaleza de los ríos vertientes al Mediterráneo una de las características más importantes pues diferencia claramente los ambientes contemplados en estas rutas.

The IGME is a Public Research Agency under the auspices of the Ministry of Economy and Competitiveness. Among its functions, research to improve knowledge and protection of aquifers can be highlighted, together with advice to Public Administrations and the development of scientific and technical studies used to implement new technologies. As fruit of its extensive work over the last few decades, the IGME has amassed vast geological and hydrogeological knowledge of the province of Alicante, combined with notable experience in the scope of studies regarding the different facets of its geological heritage.

For its part, the Water Department of the Diputación Provincial de Alicante (DPA), responsible for characterising the status of provincial water resources and providing Local Administrations with technical advice, has played a leading role in the diffusion of information about the wealth of provincial water, producing notable publications that contain elements of immense wealth for the heritage, among which special mention should be made of the Water Map of the Province of Alicante, the Hydrogeological Map of the Province of Alicante, and the Provincial Springs (parts one and two). All these clearly show to what extent Alicante has a superb hydrogeological heritage.

These two main stakeholders (Diputación and IGME) have also collaborated intensely with municipalities to design the routes and to document them. In addition, local farmers and hiking associations have been enthusiastic collaborators for the guide. The selection and rating of the heritage value of each site has been done with polls and enquires to a number of experts from different institutions.

Therefore, the basic resources to develop this practice has been the technical staff from the two main stakeholders, with some externalized work such as the editing and printing of the guide and the development of the web page.

4.3 Evidence of success

The Blue Routes have had an important touristic and educative impact in the province, which it is shown in some figures such as:

- Over 110,000 visits to the web page since its launch in 2016.
- Over 5,000 copies of the guide distributed.
- Thousands of publications, likes and retweets in social media.

The Blue Routes has also inspired a yearly activity to celebrate de World Water Day. It is the, so called Hydrogeoday (Hidrogeodía in Spanish) that is a free event in which over five hundred citizens participate where part of one of these routes is done with scientists and teachers in different informative stops that give five minutes lessons about groundwater and water heritage. Three editions have been held to the moment and there is a fourth ready that had to be postponed due to the COVID-19 emergency.

Moreover, an increase of visitors of the sites presented in the guides has been produced according to the information we receive from the municipalities. Some of them are even empowering the proposal by installing signals and informative panels in their “water routes”.

4.4 Challenges encountered

The main challenge of the activity has been to reach a wide audience. While the technical work presented some difficulties, as the staff is well trained in the hydrogeology and the heritage of the province, they have not been major problems to identify, rate the sites and configure the routes for the guide.

Nevertheless, the activities related to the dissemination of the results, are further from our area of expertise. The divulgence of the guides was slow at the beginning, and after some learning, basically in the use of social media, we were able to boost the process.

Now, the main challenge it is to transfer this proposal for tourism and leisure with an educational background to firms that can make profit by offering organized visits. A couple of firms are performing now the viability studies, but as easy as is to get hikers when you offer a free activity, is difficult to get them if the experience goes up to 10 € each.

4.5 Potential for learning or transfer

Potential for learning from this practice is high, as long as all the regions have heritage that is worth to protect and valorise and public organisms with experts that have a good knowledge of their territories.

A systematic approach to its study helps in the identification of the values of the heritage, and even to discover some elements that would be otherwise ignored.

But just the study is not enough. Informative publications and platforms with attractive proposals for the citizens would transfer these values the society and even create new opportunities. This experience is highly transferrable in order to spread information and knowledge about any kind of heritage, its value and its suitable form of use and enjoyment, which is necessary for its present and future preservation.

4.6 Further information

<https://rutasazulesalicante.es/>

WHY DID WE CHOOSE BLUE ROUTES?

We chose the Blue Routes as a good practice because it is a clear example of water-linked heritage valorization / promotion through three key steps:

- 1. assessment and characterisation (catalogue);*
- 2. effective exposure of information and knowledge about its value and its suitable use and enjoyment (guides, web page, app); and*
- 3. wide dissemination (social media)*



5. **Bridge Guard Residential Art - Science Centre**



5. Bridge Guard Residential Art - Science Centre

“ The Bridge Guard Residential Art - Science Centre is a good example of linking artistic expression with the preservation of history and of intangible cultural heritage of a border region. It is known from history that borders create tensions while the Bridge Guard Residential Art - Science Centre creates bridges and stories around a common but divided past

5.1 Detailed information

The Maria Valeria bridge crosses the Danube connecting Štúrovo in Slovakia with Esztergom in Hungary, it is 500 meters long. The bridge was built in 1895, at a time when the cities of Esztergom and Štúrovo (then known as Parkan/Párkány) both belonged to the Austrian-Hungarian monarchy. The bridge was severely damaged by German air raids in 1944. The connection between Esztergom and Štúrovo was severed for 57 years, and it wasn't until the early 1960s that a ferry started to carry people and cars to and from. The Hungarian population was reduced to a minority, and relations between the two countries remained fraught for decades. Tensions also marked the first few years after the end of communism in 1989. The Slovak and Hungarian governments agreed to rebuild the bridge at the last minute at the end of the millennium, as EU funding was about to expire. Opened in October 2001, the bridge has reconnected the two cities. After all, the Danube has been a border between nations for centuries and has seen many violent conflicts too. The river has separated people from one another but it has also brought them together.

The Bridge Guard Residential Art - Science Centre was **established to honour this renewed connection of ruptured communities through art, literature or science**. The rebuilt bridge deserves to be saved from further destruction by people. To this aim, mental protection is more important than physical protection. As long as the mental connection between people is intact, the bridge is not endangered.

The aim of the Bridge Guard Residency is to **support artists, scientists and personalities from other professions** who work on projects which place emphasis on uniting, connecting, and bridging. Support consists of making possible a 3 to 6 months' sojourn in the "Bridge Guard" residence in Štúrovo, Slovakia, with the right to work in complete freedom on one's own project, and with only minimal duties. The post of Bridge Guard requires a person in whose work boundaries of countries or eras are bridged, mental, social, religious or political boundaries are crossed, different scientific fields are connected, or various artistic media are utilized. The Bridge Guard works on topics such as integrating, bridging, connecting, uniting opposites, exploring and moving boundaries, encountering the unknown in others and within oneself. Of course, groups of artists or scientists may be suitable as Bridge Guards, provided they do not consist of more than two people.

Next to the work on his or her own project, a Bridge Guard **keeps a logbook about the bridge**. The resulting artworks are just about as different as the bridge's various guardians themselves. E.g.: One Korean artist used the bridge's steel beams as antennae to catch radio waves, others wrote a poem on the bridge using sieved flour or made chestnuts gathered in both Slovakia and Hungary into colours, with which he could do his drawings. A Romanian researcher collected stories about how borders can be overcome. Beside **guarding** the bridge guards regularly work with local children in the public art school, **doing discussions with the high school students**, have **public appearances**, and **exhibition or performance**, **communicate** with the general public. They are also requested to **leave behind** at least one **piece of art** that can be shown in the permanent exhibition in the bridge guard residency. In the Bridge Guard residency Slovak and Hungarian languages meet the language of the international guest. English is the common language in and around the residence.

The project started in 2004, and is still ongoing. Ever since, there were 48 Bridge Guards from all over the world.



The main beneficiaries:

- the “bridge guards”, who are persons from all over the word,
- the local children interested in art from Štúrovo and Esztergom
- inhabitants of Štúrovo, Esztergom and from nearby settlements who are interested in culture

Stakeholders:

- The “Párkány és Vidéke Kulturális Társulás (Cultural Associations of Štúrovo and the Surrounding Area)” takes on the responsibility for the management of the residence and provides local assistance to the Bridge Guards.
- The Cultural Centre of Štúrovo provides places for the side events (exhibitions, other cultural events) free of charge.
- The initiator of the “Bridge Guard Residential Art / Science Centre” is Karol Frühauf with his wife. Mr. Frühauf was born in Štúrovo and spent his childhood there before the emigration to Switzerland, where he lives now. He and his wife are the owners of the “Štefan and Viera Frühauf Fonds”, what has furnished the residence, takes care of the selection of the resident Bridge Guards and provides financial support towards their living expenses.
- The town of Štúrovo supplies the residence – living quarters and studio.
- The company INFOGEM AG, CH-5401-Baden provides the entire infrastructure for the fund “Štefan and Viera Frühauf”, including the maintenance of the official homepage.

5.2 Resources needed

Financial resources:

The Bridge Guard has **free use of the living accommodations and the studio** provided by the Municipality. In addition, the basic charge for telephone and Internet access plus the amount of 50.- € for the usage thereof is paid by the Support Group. Costs in excess of this amount is have to be charged to the Bridge Guard.

Furthermore, he or she receive a **monthly contribution** towards living costs of **350.- €**. Travelling expenses and insurance costs cannot be reimbursed. The result of the work is the property of the Bridge Guard. There are Guards in residence in all months. That means, that the **average cost of the project is 400 .- €/month =12*400= 4800€ + cca. 2000 eur/year for the additional special costs (equipment for guards)**. The main sponsor is the “Štefan and Viera Frühauf Fonds” (provides 90% of the total costs/year).

Beside the main sponsors and contributors everybody is welcomed to sponsor a Bridge Guard by pledging to pay for the cost of his or her stay. In appreciation of the sponsorship, “the sponsor’s” Bridge Guard will create a work especially for that sponsor.

In our case the residence is at the disposal of the Bridge Guard for his or her exclusive use. It contains three rooms: a studio, a living and a bedroom. All rooms are simply furnished. A fully functional kitchenette and a bathroom are also available. The same building also houses the town's Museum of History and some offices of the town administration. The residence has its own separate entrance through the court of the house. An Internet connection is available in the residence. The studio can be furnished incrementally according to the needs of the Bridge Guards and the financial possibilities of the Support Group.

Human resources:

2-3 persons take part actively in the project. They are volunteers of the Párkány és Vidéke Kulturális Társulás (Cultural Associations of Štúrovo and the Surrounding Area. They "work" for the project cca. **4-5 hours/week**. They communicate with the Bridge Guard and the main sponsors, organise the side events, doing administrative tasks etc.

5.3 Evidence of success

The project is popular among artists from all over the world. There is oversubscription for the "Bridge Guard" position each year. The Bridge Guards are selected two years in advance. The project is more and more popular also among the local inhabitants thanks to its tradition and publicity.

Tangible results:

- Currently the 48th Bridge Guard is in Štúrovo. That means, that there have **been cca. 60 artists** from all over the world involved (sometimes 2-3 artists are together the Guards)
- Each Guard spend 3-6 months in Štúrovo
- Each Guard left **at least 1 piece of his/her artwork** and all drafts of their works in Štúrovo. These are photographs, pictures, paintings, sculptures, songs, musics, movies about performances, poems and other kinds of literary works, visual arts, sound arts etc. All these can be found in the Residence.
- Bridge Guard Residence is opened every day, so everybody can enter free of charge (when the Bridge Guard is "at home") and can see the exhibition or meet and talk to artist, or in some cases get involved in the artist's work.
- Each Guard writes a **Bridge Guard Diary** with his/her experience, so there are 47 diaries.
- There are at least 1 cultural event during the stay of Guard, where the artist presents his/her works, but in most cases **2-3 events** are organised. That means, that more than **80 cultural events** were organised so far in Štúrovo within the project
- There are cca. 40 participants in each event
- The Guards met local children regularly and takes an unusual lesson for them. He/she speaks about his/her impression about the region; his/her home region; his/her art; Or teach children for creating a special art piece etc. It is up to the Guard to decide what kind of activities to do with children. The language is English, there is a translator if necessary. The primary schools and secondary school of Štúrovo and Esztergom are involved, altogether 7 schools. **Cca. 400 children/year**
- The Cultural Associations of Štúrovo and the Surrounding Area are in contact with all formal Bridge Guards. It was also organised a "**Bridge Guard meeting**" for them in 2017, where 25 formal Guards participated (from 40).
- **A book** was also published on the occasion of the 10th anniversary of the project

By this practice, it was **managed to valorise the intangible heritage of the bridge** keeping alive the history of the bridge and what it is represent for the people live on the different side of the river. The bridge guard initiative is a story telling and story maintaining method which is renewed each year by a new art work telling the same story in a different way attracting again people's attention preventing them from forgetting the history of the bridge.

The stakeholders implement the project, provide the resident for Guard, provide financial and human resources.

5.4 Challenges encountered

Challenges:

- In the first years of the project it was a challenge **to get popularity**, but it was solved, thanks to the positive impact of the press and the positive feedback of the persons who were actively involved in the first years. It can be a common challenge of revalorising intangible heritage that not all people are interested in history and art, so such projects might reach and attract only a narrow part of the society. even though such project can interest a wide range of people, it needs communication expertise to apply communication tools effectively which not always available.



- It is a challenge to **select the next Bridge Guard**. The artist, or group of artists can apply for the “position” online, the main sponsor, the “Štefan and Viera Frühauf Fond” select the next Guard without a personal meeting. This is quite risky, because sometimes the Guard is extremely introverted, not meet locals and children and hard to communicate with her/him. Fortunately, it only occurred few times. The Cultural Associations of Štúrovo and the Surrounding Area suggested to the main funder to do at least a phone interview before the selection. Valorising intangible heritage through art has always the risk of subjectivity. Even selecting an excellent artist cannot guarantee that the artwork will be appealing for everybody or be able to communicate the message properly. Thus, the result of such projects is not always predictable but based on the experience of the Bridge Guard project it is worth to take this risk.
- It is always a challenge for the Bridge Guard to **communicate with locals**, as some of the locals (especially from older ones) do not speak English. In official events the organisers try to provide a translator, but in daily informal communication the Bridge Guard has to be creative to be able to transfer his/her art to locals. E.g. A Mexican artist organised a dance night in a local pub, where Mexican music was played, and she sang in Spanish involving the participants. Although it is a cross-border practice beside the mentioned language barriers there is no other problem with languages, as more than 70% of inhabitants of Štúrovo belongs to Hungarian minority, so their mother tongue is Hungarian, their culture, traditions are almost the same, as before the end of the Word War 1 these territories belonged to Austrian-Hungarian Monarchy. Moreover, the most of the Slovaks also understand Hungarian in the Ister-Granum Euroregion.

There are **no negative externalities** or negative voices.

There are also plans to extend the practice and establish also a Bridge Guard residency in Esztergom. The preparations for that has already started. The challenge of that is to find a place in Esztergom, where the guard could live and to find an organisation in Esztergom what would implement the project there, and also to find financial resources for that.

5.5 Potential for learning or transfer

Creating an Art residence and inviting artists from all over the word to create something unique about the region is not a new idea. There are lots of art residences all over the world, so the **project idea is really transferable**. The **establishment of an Art Residence is easy** and can be done almost everywhere, but should be connect somehow to local traditions, history, other heritages. It can be a way of remembrance of an important historical event, or can draw attention to a forgotten tradition, natural or cultural heritage through art. Also, sometimes people (especially artists) from abroad can see the local situations very differently and can have new ideas on the improvements.

The Bridge Guard Residence is part of the Res Artis.

It is already proven that this practice is adaptable as here are also art residences in the world, so it is such a common practice which can work in lot of different places as not place-specific.

The Guard residency is Stúrovo is **unique and innovative** because:

- It is a **thematic Art residence** with storytelling and “guarding an important building aims. To our knowledge there is no other Art residence, where the Artists also have a symbolic additional “function” like in our case (they are also Bridge Guards, who’s aim is to guard the bridge and symbolically safe it from destroying)
- The Guards have to create artworks about the Danube, or about the bridge, or the connectivity between Hungarian people and Hungarian minority in Slovakia so it is an **innovative way to connect art**, important moment of **history**, built **heritage** and water-based heritage. It can be adapted by towns, regions where a bridge (or other building) was destroyed and rebuilt, or where a specific building is a symbol of connectivity.
- It has a **cross-border effect**, as the Guards have to meet local inhabitants (children and adults) living in both side of the region, so the practice is also adaptable in other cross-border regions, or regions, in which the connectivity with its border countries is very important for some reasons.
- The project and also its **side-effects** (e.g. exhibitions, performances, special lectures for children, published book etc.) also draws attention on the Danube trough art, what is one of the most important river in Ister-Granum Euroregion and plays (and used to play) crucial role in local people’s lives.

All in all in general it can be adapted by every regions which have an endangered natural or cultural heritages/plant/animals/ and they want to symbolically save or promote them. They can create their own Residences. Eg.: Church/Hospital/...River/...Lake/...Bird etc. Guard Residential Art / Science Centre.

There are also **plans to extend the practice** and establish also a Bridge Guard residency in Esztergom. in order to make the practice better. In that case there would be another art residence in Esztergom (the other side of the

river) so there would be 2 Bridge Guard at the same time working together. It would also be possible to give a promotion for the Bridge Guards targeting not only the locals but tourists from other regions. It could be not only a way of preserving a heritage but could be used for tourism purposes.

5.6 Further information <http://www.bridgeguard.org/en/>

WHY DID WE CHOOSE BRIDGE GUARD RESIDENTIAL ART - SCIENCE CENTRE?

The Bridge Guard Residential Art - Science Centre was chosen, because it is a unique and inexpensive way of storytelling and connecting art with history and heritages.

Moreover, its idea can easily be adapted by every region, which have an endangered natural or cultural heritages/plant/animals/ and they want to symbolically save or promote them



6. **Reconnecting Aarhus to the Sea: Urban Mediaspace**



6. Reconnecting Aarhus to the Sea: Urban Mediaspace

“Creating an Urban Mediaspace while reconnecting the city of Aarhus to the waterfront and sea by transforming industrial harbor areas into a contemporary locality



DOKK1 and the Customs House at Urban Mediaspace Aarhus. Photo by Phillip Fangel (04-09-2020).

6.1 Detailed information

In 2001 Aarhus City Council principally decided to construct a public space by the name of Urban Mediaspace Aarhus. The connection between Water and the city became the central element in the layout of the Urban Mediaspace project. The massive changes to parts of the harbour front became one of the largest projects undertaken by the City of Aarhus.

Aarhus is a city by the sea, and the history of the town is closely connected to the place where the river flows into The Bay of Aarhus. One broad sweep of the architectural brush has reinstated this special position by the sea, linking the city and the public library and cultural centre Dokk1 with the north-south line of the bay and the river's east-west axis – horizontally, vertically and in terms of transportation. The new city waterfront facilitates a whole new range of recreational activities by the sea and right in the centre of the city; the urban waterfront spaces established there, known as the Urban Mediaspace, provide the perfect setting for multifarious cultural activities, and for people to hang out, play and enjoy themselves in community with others.

The vision behind the new urban spaces is to recreate the original intimate connection between the city and the bay. This landscape, characterized by the waters of the bay and of the river, is to be brought into the limelight, moved centre stage – a new city waterfront close to the sea, with the now opened up inner dock.

The river, which from the time of the Vikings was a moat forming part of the city defences, has now been fitted with sluices as a defence against future climate changes. In this way, Dokk1 and the new urban waterfront spaces will introduce the city to the water again.

Dokk1 is situated on the edge of the inner harbour basin to the north, and the river to the south. The opening up of this last section of the river restores the missing link in the urban landscape – a clear visual connection between the course of the river and the water of the bay. The new, central city waterfront extends about 400 m northwards from Dokk1 to Navitas College.

The new waterfront spaces is near the Cathedral, which lies about half-way along its length. This is known as the ‘Cathedral Axis’, because it links the inner harbour basin with the Cathedral. In this way, the mediaeval city centre is once again linked to the sea. On either side of this axis, two new urban spaces are emerging: Havnepladsen (Harbour Square) and Hack Kampmanns Plads (Hack Kampmann’s Square).

At the northern side the large Havnepladsen is located with quays where large ships can dock. Havnepladsen is conceived of as a place with endless possibilities; a city playground, just as suited to quiet days as to special days with concerts and other events. On the other side of the canal to the south lies Hack Kampmanns Plads with its two stately old buildings, Toldboden (Customs House) and the old warehouse, Pakhus 13. Hack Kampmanns Plads runs right down to the water’s edge, giving direct access to the sea.

Through these urban spaces, down by the water, run a pedestrian promenade and a cycle track, both emphasising the special nature of the terrain on which Aarhus is situated – uphill to the Risskov Forest in the north and down to Marselisborg Forests in the south. Parallel to the promenade and cycle track runs the new Light Rail Transit and the rerouted road, flanked on the city side by broad paved walks along the rows of opulent, palatial houses once built by merchants and ship owners, as well as educational institutions and hotels.



Parts of Urban Mediaspace Aarhus. Photo by Phillip Fangel (15-09-2020).

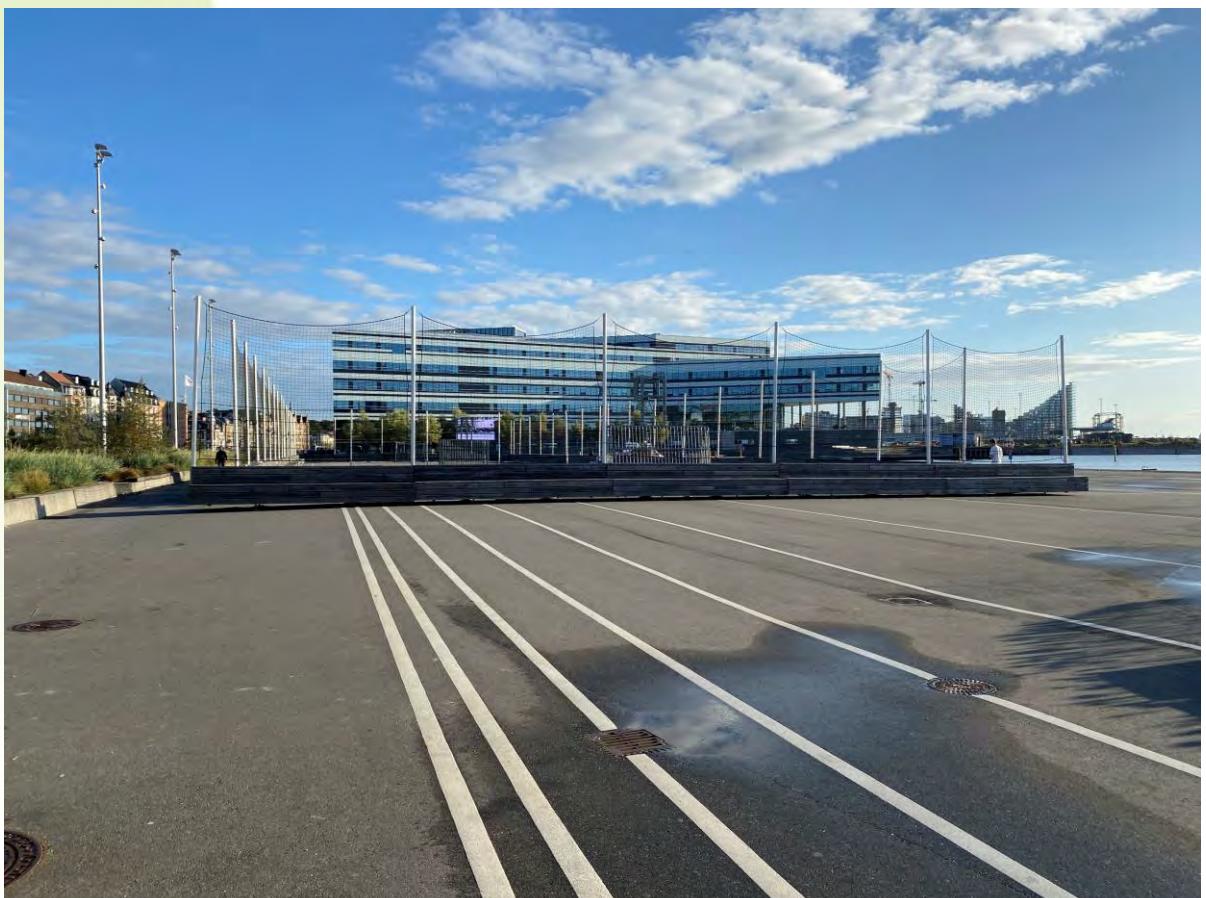
6.2 Resources needed

Creating Scandinavia's largest public library as well as an entirely modern waterfront in the very city centre of Aarhus meant a solid financial backing from the Municipality of Aarhus. The estimated cost is € 280,000,000 + VAT from which about 80,000,000 € is donated by the organisation Realdania.

6.3 Evidence of success

The establishment of Urban Mediaspace has not only given the city a new public library, new recreational spaces, secured the city centre from flooding, it has completely changed the self-perception of the city and its inhabitants. By creating new urban areas along the seaside in the historical city centre, the project has transformed the waterfront into popular recreational spaces used daily by the city's inhabitants and visitors.

1.3 million users each year visit the new public library Dokk1.



Havnepladsen at Urban Mediaspace Aarhus. Photo by Phillip Fangel (04-09-2020).

6.4 Challenges encountered

Establishing the new electric railway "Letbanen" in Aarhus. It was constructed at the same time as Urban Mediaspace causing some technical and knowledge sharing difficulties in the building processes. Development of the same physical area also caused some challenges during the project period.

6.5 Potential for learning or transfer

The transformation of a key public area like the waterfront of Aarhus can be transferred to many locations around the world. It is all about seeing opportunities through local governance in the existing water-linked environments while aiming for a modern development through solid project management.

Success criteria achieved:

- High quality in architecture and in the functionalities
- Increasing use of urban areas and in library functions
- Development of new processes and citizen engagement
- Service costs of areas and building are economically sustainable
- Tying the city and the water together and changing the moving patterns in the city
- Underground parking facility is a commercial success
- High degree of security on level 0. Implementation of simple and intuitive user experience.

6.6 Further information

<http://www.urbanmediaspace.dk/en.html>

WHY DID WE CHOOSE URBAN MEDIASPACE AARHUS?

We chose the URBAN MEDIASPACE AARHUS as a case since it is an obvious example of an old water-linked area at the harbour front that has been transformed into a new and contemporary public space with recreational facilities that have the potential of providing area nearby areas to become a socio-economic hubs for future development.



7. **The Uncovering of the river Aarhus**



7. The Uncovering of The River Aarhus (1992-2015)

“Uncovering a River, enabling the water to flow freely under an open sky has not only proved to pay off with socio-economic benefits, but also recreationally and environmentally



The entire stretch that the municipality agreed upon uncovering in 1992.

7.1 Detailed information

Parts of The River Aarhus was covered due to infrastructural changes between 1933-57. The decision to uncover and demolish the concrete road on top of the channelled river while establishing pedestrian zones along an open canal was initiated due to the desire of having better environmental and recreational surroundings in the historical centre of Aarhus.

Between the early 1930's and late 1950's The River Aarhus was channelled and covered with concrete and iron in its most eastern end in order to improve traffic conditions while facilitating vehicular access to the harbour area. The infrastructural changes were large-scale, and the covered up river had in a few decades become a busy road with plenty of heavy traffic. The old city centre was suddenly separated in two parts through asphalt and concrete. Even though the running river had also split the city in two parts, the many smaller bridges and intimacy of the areas along the river, glued the inner city together into one coherent mass.

In the 1970's people started murmuring about the covered up river. The redevelopment of the central Saint Clements Bridge brought by new thoughts of reopening parts of the River Aarhus. The main stakeholder in the entire project was the Municipality of Aarhus. In 1984 the first drawings and visualizations of a permanently opened-up river were released from the City Architect's office.

The main street of Åboulevarden was to be uncovered, and an extensive recreational canal area solely for pedestrians was to be established. Once again water was to be made visible along the historical river. The uncovering also featured environmental visions. The visibility of an open canal would help protect the city against floods caused by torrential downpour alongside the reestablishment of two larger lakes at Årslev Engsø and Egå Engsø.

In 1989 the City Council of Aarhus principally decided to reopen the area that had been covered up half a century earlier. The local plan that dealt with the reopening was finally approved in 1992, and in 1996 the first phase which covered the stretch between the streets of Harald Skovbys Gade and Immervad was opened to the public. During the late 90s another two stretches were completed before beginning the extensive phase two.

Located next to the river, the central park area "Mølleparken" also became subject for a water-linked transformation. Beneath the park a massive underground reservoir for sewage water was constructed. This set up a new kind of water management solution right in the centre of the cultural heritage heart of Aarhus. A similar reservoir was constructed near the old Hammel train station just a few hundred meters further up the river. The last part of the reopening of The River Aarhus, phase three, included the highly identifiable area of The Mouth of the River. This was completed in 2014. In connection to uncovering the last stretch of the river, a mechanism that regulated the water levels was installed in order to prevent flooding in areas along the canal.

Ordinary citizens that wanted to spend quality time in the city center benefitted from the reopening of the River. It became possible to sit down at the "Spanish Staircase" right next to the cafes of Åboulevarden. Many traditional shops were transformed into cafés. Many of these new restaurants and cafés had outdoor furniture that encouraged people to sit down for drinks and dining.

On the other hand people looking for an easy way through the centre of Aarhus had to find new ways of doing so. The uncovering of The River Aarhus also meant fewer parking spots along the Streets of Åboulevarden.



The River as it looks today. Photo by Phillip Fangel (12-07-2019).

7.2 Resources needed

Such an immense transformation of a site requires a lot of resources and planning. Politics, the economy of the municipality and a long decision-making process were important elements in the comprehensive project. In the end the politicians of the City Council in Aarhus had to be convinced of the positive effects of an uncovering.

First of all, the majority of parties in the political landscape of Aarhus had to agree upon the decision to "reopen" the covered river. Not all parties agreed on the future of the river. At times it was even considered, by a few political parties, to involve private companies in order to finance the project. This did not occur, and it ended up being fully financed by the municipality of Aarhus. It was estimated that the upkeep of the concrete deck on top of the river would cost approx. 5,3 million €, whereas the expenses connected to an uncovering would be in the region of 9,3 million € (Based on the value of DKK in 1993.).

As part of a democratic process, inhabitants of Aarhus were also given the opportunity to comment on the decision to uncover the river for a period of 2½ month (summer 1991) through a hearing process. Furthermore, public meetings were established where ordinary people could contribute with opinions on the processes of the city spaces near The River Aarhus. There were talks of a public referendum, but the City Council denied the public the possibility of deciding upon the issue of an uncovering.

In 1985 the City Engineers' Office provided a projected budget for the 100 meter long stretch between the Saint Clements Bridge and Immervad. The overview of the costs included a description of the work that had to be done. This included removal of existing concrete structures, sheet piling, project management and supervision, measuring of vibrations for 3 months, insurance and misc. costs. The total amount to be used for the uncovering of this part of the project: approx. 1,57 million € (Based on the value of DKK in 1985). These numbers would change quite a bit over the following ten years.

The project in Aarhus was divided into several phases all funded by the municipality. The stretch from Immervad to Saint Clements Bridge had a projected cost of 9 million €. The stretch from Immervad to Vester Allé incl. the water reservoirs beneath Mølleparken had an approx. cost of 12 million €. The last phase of the project was part of the larger Urban Media Space transformation of the area furthest to the east which cost approx. 100 million € (Based on the value of DKK in 1985).

The cost of a project this size typically also includes the materials needed for the construction. When the river was covered up in the 30s it was decided to dismantle and save the entire Frederiksbro (Frederiks Bridge) at Immervad for future use. The granite elements of the bridge was sorted and registered in case the bridge had to be re-established. The fact that the bridge was kept in storage was taken into account before the uncovering. The thought was that the old bridge from the 1800s could be turned into a historical reference in an otherwise modern setting. Unfortunately, the heritage restoration project with the old Frederiks Bridge never became reality, and materials for a new bridge had to be included in the budget.

It was a generally accepted assumption that there was an expense of 133,000 € per 10 meters of uncovered river.



A part of The River Aarhus being covered in 1939-1940. <https://www.aarhusarkivet.dk/records/000319662>

7.3 Evidence of success

The success of the uncovering of The River Aarhus is evident in several ways – both practical, formal and through the decline of protests.

As part of the uncovering of the river several new environments were created along the river. New opportunities arose that were unthinkable with a busy road at Åboulevarden nearby. Recreational pockets of tranquillity in between trees and plants became trendy amongst the younger inhabitants. However, youngsters and students were not the only groups in society that benefitted from the popularity of the new areas. In general, the uncovered river quickly became an attractive spot for both locals and tourists to visit. Buildings along the canal are now full of cafés, bars and restaurants. The combination of dining places, bars and a dynamic nightlife has given this area a status as the “place to be, hang out and be seen”.

The environmental aspect is another success, which is evident through the absence of cars, busses and other vehicles that emits carbon dioxide. Only delivery of goods for the business along the canal provides temporary access for vehicles. Furthermore, many trees were planted along the canal in the pedestrian zone.

After the infrastructural changes in the wake of the uncovering, the park “Mølleparken” in the westernmost part of the promenade pedestrian zone has also become a green area where wooden decks close the surface of the water provides a relaxing atmosphere for people hang out.

Near the bridge at Immervad the granite blocks shaping the “Spanish Staircase” is a place to sit down for a drink while having an enjoyable time in the sun. Occasionally a pop-up stage is constructed on the edge of the river near Immervad where artists can perform for the public sitting at the “Spanish Staircase”.

Aesthetically the uncovering has brought forth awards, and from an economic perspective property values have risen dramatically due to the changes. Some people argued that the idyllic and romantic aspects are not the only proofs of success. Instead, they argue that the reflective aspect where the livelihood of the city is mirrored in the

water is evident in claiming it to be a success. Thus, buildings, humans, light and shadows are clearly reflected in the moveable surface of the water.

In Brussels in November 1998 the project received official praise by an international jury of city planners. The jury had the opinion that the project had to be seen as a model for other places within the European Union. The project in Aarhus was considered for the award due to its high standard in planning, as well as quality in the shaping of the city. The management of the traffic situation in the city was also praised. The project had already received an national award in 1996. The "UrbanPlan"-award was given for well-run and sustainable city planning from the Union of Danish Architects and the Danish Urban Plan Lab. The project in Aarhus won the prize based on new thinking within city planning that brought forth aspects within traffic, environment, architecture and heritage. The City Architect of Aarhus also received an Urban Renewal award for his creativity and involvement in the uncovering.

The inhabitants and business owners of Aarhus that were against the project quickly changed their mind when they saw the result of the first phase. The look of the reopened river from the Saint Clements Bridge convinced many of the qualities of the project. Politicians that had been sceptical about the project went to the City Architect and thanked him for his part in the reopening. There was no doubt about the validity of project from then on.

7.4 Challenges encountered

Throughout such an immense project it is almost impossible to progress without countering some sort of obstacles. Some were small, some were big while other issues just had to be taken into consideration in the design phase of the project in order for it to not develop negatively. A few challenges with adjoining remarks are listed below in a random order.

1. **Frustrated business owners.** Due to the lack of navigability and parking possibilities, some shop owners protested against the uncovering. They feared a serious decrease in sales.

This turned out to be an unnecessary concern, as business owners along the reopened canal benefitted from the massive amount of people spending time in the newly created pedestrian zones. However, there has been a natural development with regards to the kind of stores present in the area. Many shops that were present during the covered-up times have since closed and new businesses have opened.

2. **Traffic Situation.** When a busy road is closed vehicles will disappear, and instead many of these will use alternatives that could congest smaller streets nearby. Public transportation would also be affected, and bus lines would have to redirected to new places in the centre. Taxi drivers were anxious about the closure of one of the leading roads in the centre of Aarhus. In the back window of some taxis, a protest slogan (in Danish) stated; "See Venice and die, Go to Aarhus and get stuck in a traffic jam".

In order to counter the potential congestion of traffic it was decided to expand an existing "bus lane" (Busgaden) by tearing down a few old buildings at the street of Frederiksgade and direct the traffic away from the street of Åboulevarden. These infrastructural changes provided an extra cost, but were not directly connected to the uncovering of the River Aarhus. Taxis were allowed to use same bus lane.

3. **Infrastructure might not be expandable.** Optimizing existing infrastructure in other parts of the city could potentially pave way for a better traffic situation, but in a city like Aarhus important cultural heritage would be in danger of demolition. During the 1960s many important historical buildings faced demolition when Randersvej, the northern road out of town, was expanded in order to provide a direct thoroughfare to the harbour area.
4. Extra costs due to the **restructuring of underground cables.** This could be electricity cables, phone lines, water supply lines and similar.

5. **Greenifying the area.** The City Gardener's Office officially stated that it would be absurd to begin uncovering the River Aarhus without ensuring proper conditions for larger trees along the canal. The first drawings from The City Engineers' Office from 1984 would not create the necessary space for planting trees. Thus, enough space and thoughts on greenifying the area were to be revised.

Revised plans were made, and trees have been growing along the canal for a few decades by now.

6. **Climate change issues.** Rising water levels was worth considering in the design phase of the uncovering of the river. In order to avoid flooding alternative solutions like special water reservoirs were constructed. The lock system at the mouth of the river applies safety measures in case of rising water levels from both the river side and the sea side.

During the creation of the small opening beneath the Saint Clements Bridge severe surface run-off caused damage to the construction work that delayed the work significantly.

7. **Safety access.** Access to buildings for the fire department: When you remove a road completely you limit the access for firefighters to rescue people in distress as well as limiting the general manoeuvrability of the authorities.

There could be extra costs connected to establishing safe balconies as escape routes.

8. **Noise pollution.** The noise experienced during the extensive construction work should be advised towards people living and working nearby.

7.5 Potential for learning or transfer

The practice could be interesting for those cities and regions that have witnessed large-scale transformations of its infrastructure related to the covering up of rivers, streams or creeks. In the 1950s, many European cities saw the need to expand their city centres in order to improve traffic conditions. This often led to the demolition of older buildings in order to create the necessary space. This also affected some water-linked spaces. Creating good infrastructure for the increasing number of cars meant that water no longer had a high priority in the booming cities.

By adopting the process that Aarhus went through, other cities and regions could potentially gain some of the same socio-economic benefits. There are countless of key success factors that prove the uncovering of the River Aarhus to be worthy of transferring to other locations. The first step in transferring the idea would be to inform the population in the target area of the values of accessing water under an open sky.

Other regions could benefit of such a comprehensive infrastructural change through recreational qualities and environmental benefits. Caring for the environment is on the agenda in most European societies, and narrowing down the opportunities for vehicles to emit carbon dioxide through the closure of busy roads that used to be a natural element in the landscape such as a river would be an important step.

The quality of life provided by the newly established access to water is a key point in removing the concrete that encapsulated the beauty of the river.

WHY DID WE CHOOSE THE UNCOVERING OF THE RIVER AARHUS?

We chose the case of The River Aarhus because it is a prime example of respecting natural heritage in a cultural heritage setting through a large transformation project that brought back the water to the inner city

8. Provincial Water Board



8. Provincial Water Board

“ The Provincial Water Board of Alicante, a panel of water experts and civil society representatives, is a powerful tool to design consensual strategies about water management and water-linked heritage

8.1 Detailed information

The structural water deficit that Alicante suffers, user's needs, cyclic droughts and global climate change effects require a transversal social agreement, based on technical data, as frame to manage water and its heritage.

The Provincial Water Board designed a Commission, headed by the two provincial universities, and integrated by water users and political delegates, that set the Provincial Water Agreement, a covenant to decide the future of water management of the province, regarding conservation of water related heritage practices and economy.

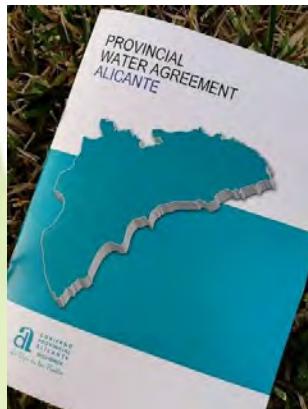


The beneficiary of this agreement will be the whole civil society and the natural environment of the province. Key elements regarded are the maintenance of irrigation -specially the traditional irrigation system a heritage of tremendous value-, the recovery of overexploited aquifers and polluted rivers, savings and efficiency, economic sustainability and costs, resources management and innovation and research.

The covenant was signed by representatives of all the political parties present in the Provincial Council but one (Esquerra Unida EU), the two universities of the province of Alicante (Universidad de Alicante UA and Universidad Miguel Hernández UMH), the main irrigated agriculture association (Federación de Comunidades de Regantes de la Comunidad Valenciana), the Chamber of Commerce and the biggest user's associations (Junta Central de Usuarios del Vinalopó, Alacantí and Consorcio de Aguas de la Marina Baja). Afterwards, the Provincial Water Board ratified its approval by unanimity.

Esquerra Unida, translated United Left, though shared the main points of the agreement and was actively involved in its elaboration, finally didn't sign the agreement due to pressures from the national directive of the party that are uncomfortable with the demand of water transfers to the province the covenant includes.

The Provincial Water Agreement stands as an example of collaboration between sectors and ideologies that are traditionally opposite to set a basic for a united action sustained over time towards a better water management. It regards the protection and valorization of some water related heritage such as traditional irrigation and natural heritage as aquifers and riversides. It also considers the Tagus-Segura Water Transfer Infrastructure as a key heritage with a huge patrimonial value and a strategic element for the socio-economy and environmental preservation of the region.



Another objective of the Provincial Water Agreement is to serve as template for a broader National Agreement. This has been accomplished only partially by now, because while the National Agreement has not been possible other provinces and autonomies have followed the example of Alicante and reached similar agreements. The greater obstacle to a National Agreement is water transfers between river basins of different regions, as they are controversial among population and from an environmental point of view.

Summarizing, the Provincial Water Board, a forum that gathers a broad group of stakeholders where water related issues are discussed is an example of how water policies and strategies should be done having social consensus in its heart. Obviously, in this forum also conflicts arise, but are discussed using a common technical background provided by the universities and with will to achieve common grounds. One of its recent successful initiatives is the Provincial Water Agreement that outlines the basic frame for water management in the province. Although there are still doubts about the possibility of a consensual National Agreement and about to what extent the guidelines of the Provincial Agreement would be implemented in concrete actions by the competent Administrations.

8.2 Resources needed

The success of the Provincial Water Board is based on the involvement of the stakeholders. They are themselves the basic resource for this practice. Not only because the participation is required in the meetings of the board, but also it is needed a clear disposition to negotiate and to reach agreements.

To achieve this involvement of the stakeholders, the Provincial Council has to impulse politically the process. That is the reason why the Provincial Water Council has had different level of activity during the years, in response to different political situations. In addition to the political activity, it is also necessary the use of the human and material resources of the Institution.

The support of the technical team of the Water Department of Diputación, which actively participates in the Board, organizing the agenda and schedule, and providing background data about the discussed issues.

The Provincial Water Agreement Committee that was very active and with an important number of annual meetings was though developed with the voluntary work of the delegates. Only minor travel expenses were covered.

During the existence of the Water Board in a few occasions some consultancy studies have been required to external experts for prices around 10,000 €, variable depending of each particular case.

The active involvement of the Universidad de Alicante in these activities has favoured the creation in 2018 of the Water Chair financed by the Diputación with about 40,000 € per year.

8.3 Evidence of success

The important activity of the Water Board during the last five years has achieved several objectives:

- Provincial Water Agreement. The launch of this document of consensus in April 2018 that is serving a guideline for the Province in water management. It was translated to English and presented to the EC in 2019.
- The Water Board has prepared allegation documents for the public participation processes of the water management plans to the Hydrographic Basin Authorities.

- The activity of the Water Board led to create the Water Chair in the University that has produced a number of scientific and informative documents, some of them available for free download at the web page, and organized several workshops and a National Water Congress.

However, beyond these achievements, the most remarkable success has been to create a base of shared knowledge and a group of stakeholders ready to cooperate, even when sometimes they may represent conflicting interests.

The concern of the civil society for the scarcity of water resources has been a key issue to encourage agreements between different political parties. This dynamic has been a key to the success of the initiative. Other have also played a role in translating this concern of the society, for example the water users' associations, the irrigation syndicates, etc.

Another key element is the presence of experts both from the University and the technical staff of Diputación that provide to the Board with unbiased data and analysis that facilitates the political discussion and delimits its terms.

Again, this practise is born of the cooperation between stakeholders, and so would be impossible without them. It is important to keep them involved and Diputación de Alicante has played an important role in this area and would keep on in the future.

8.4 Challenges encountered

The main challenges encountered during the implementation of the practice are related to difficulties of agreement between stakeholders and to the lack of direct competency in Water Management of the Provincial Water Board.

The seek for agreement is not always easy. There are conflicts of interests between the participants of the board, as they belong to different sectors and geographical areas. An open mind and wiliness to negotiate is a requirement, that is present depending on which actors the board has had across time. This fact explains why the activity of this initiative has had ups and downs during the last two decades.

Moreover, the important presence of political groups makes ever harder this requirement. Two elements tie the parties when negotiating common strategies towards an issue:

- Parties have to differentiate one from another, and this sometimes led to maintain slightly different speeches, even when the background ideas are the same. It is unlikely that no reproaches to each other are done and transmitted to press.
- National strategies are not always coincident with Provincial strategies. Political parties have different speech at National level, where they have to be equidistant in the prickly issue of distribution of water among territories, and at Provincial level, where citizens would not understand that their parties give up requesting more water resources for Alicante.

The above difficulties have to be fought with perseverance and with the involvement of scientific and technical members who provide a common background of data and analysis that always facilitates the later negotiations.

The lack of direct competencies of the Board also limits its impact in the policies. Though the Basin Authorities have been members of the board during years, the transposition of the agreements of the Board is not direct to their management rules. Therefore, the Board can act somehow as a lobby to the Water Administration, but does not have any direct regulatory capabilities.

8.5 Potential for learning or transfer

The model of the Provincial Water Board can be transferred to other locations and situations where important social consensus is required and when we are dealing with complex issues that include socio-economy, heritage, natural resources and environment, etc.

In fact, in Spain this same model to achieve a Regional Water Agreement has been followed after Diputación de Alicante by the Murcia Region, that signed the Agreement in 2018, and by Andalucía region that in 2019 has initiated the process for its elaboration.

The current effort is to transfer it to the National level. In this period the Board will invite members of the National Ministry so that they would use a similar approach in the near future but for the water management strategies of the whole country.

The general frame for this practice is: creating boards of negotiation including a wide group of stakeholders that are supported by an unbiased background of data and knowledge produced by the university and other organism with skilled technical staff. This focus can be used for a wide range of challenges, especially those related to water that can be complex both technically and socioeconomically, and might create interesting synergies. The key element for its success is the setting of a common target that is accepted by all the participants and that the process has to be led by an experts' panel that has credibility for all the participants in the Board, such as universities.

8.6 Further information

<http://mesadelagua.diputacionalicante.es/>
<https://catedradelaguaua.org/>

WHY DID WE CHOOSE PROVINCIAL WATER BOARD?

We chose the Provincial Water Board as a good practice because it is an example of how to involve a wide group of stakeholders to achieve social consensus and commitments about complex issues, supported by an unbiased background of data and knowledge produced by universities and other expert organisms.



9.

(Re)development in dialogue



9. (Re)development in dialogue

“ Development in dialogue can be seen as a form of design thinking, because it often is an approach to a wicked problem: seemingly incommensurable objectives and conflicting interests on heritage, environment and economy

9.1 Detailed information

The approach of heritage shifted in the last twenty years from sectoral (protection), to factorial (part of spatial planning). The factorial approach made heritage a part of spatial planning but in order to achieve a more integral and balanced deliberation between different interests a new approach was needed. The factorial approach was still protective.

Experience learned that strict protection of heritage is not always necessary. In general most of the owners take good care of heritage. If they don't, it is mostly unintentionally and because of a lack of knowledge on how to value and valorise the heritage they own. The focus thus should be on dialogue: providing knowledge that fits their needs and the needs of other stakeholders while preserving heritage values.

This is what we call *development in dialogue*.

This vectoral approach (heritage as a source of spatial valorisation and a product of (public) debate) is seen on a larger scale.

By working on a base of mutual trust, strict protection isn't necessary. In general the process of (re)development smoothens. By means of valorisation the results are more positive. Without restrictions on beforehand because of heritage regulations a broader, more integral approach is possible to serve all stakeholders. Main stakeholders and beneficiaries are the owners, the municipality of Breda and heritage associations.

The owners mostly support this approach because of the smoother process and the wider range of possibilities to develop. The municipality generally also supports the practice because provides opportunities to reach other goals besides heritage preservation, in short spatial valorisation.

Some people within the municipality have some concerns about the practice of not listing all heritage, mainly because there is no legislative framework to fall back to in decision making except for listing the heritage when things don't work out. For the same reason heritage associations are reluctant to this practice.



Images: Johan van Gurp / Collectie Stadsarchief Breda

9.2 Resources needed

No specific funding our human resources seem to be necessary to set up and run the practice.

To ensure the practice can be run it is necessary to get heritage advisors in a proactive role. The earlier they can start a dialogue with owners and other stakeholders the more successful the practice. The heritage advisors need an open attitude to their profession and views from others. Also they have to have good communication skills and extensive knowledge of the cultural heritage in relation to spatial planning and other disciplines to tackle problems. In short: the heritage advisor should be skilled in design thinking.

It seems to be a legislative framework of regulations is necessary to fall back to when practical decision making is done on operational level, but this is not yet clear.

9.3 Evidence of success

In the last years this practice has been used for several projects. Evidence of success of the development in dialogue practice is best shown by an example.

Foodhall Breda

The development of the Foodhall in the city of Breda was done with the practice of development in dialogue. It was realised in an old cinema in the city centre. Apart from the remnants of the former cinema, dating back to the beginning of the twentieth century, there were older parts dating back to the middle ages. These parts are directly connected to the rich history of the lords of Breda who lived in the castle nearby.

The starting point for redevelopment was complex: multiple interlocking structures from different periods and quality within a bigger building block led to a long vacancy. Another problem was the enormous asbestos roof on the main hall in the middle of the building block that had to be removed carefully.

The understanding from the developer of the possibilities to valorise the cultural heritage and the decision to not list the building by the heritage advisors opened new opportunities and smoothed the process. The decision not to demolish the structures but to reuse them made the project more sustainable. In the policy instrument Resource for the future is stated that heritage is sustainable by definition because of the long-term appreciation and use.

In the end all stakeholders got the maximum possible positive result. The Foodhall is widely appreciated by the public, partly because of the unique environment that has been created with preservation of the identity of the former cinema. By "reloading" or "resetting" the identity of the former cinema in its new function, sustainable preservation for the years coming is guaranteed. This aspect could be described as storytelling or Imagineering.

9.4 Challenges encountered

There is no practical legislation framework to fall back to when difficult decisions (for example removing heritage values) need to be made in the execution phase. This leads to some extensive discussions about small, but from a heritage viewpoint, important details. For instance about the position of a door in relation to the total composition of the façade.

Also the nature of (parts of) the building can limit the room for making changes. The heritage values of the building to be redeveloped should be clear before starting this practice, to prevent frustrations in the process. This research may even lead to listing the building for sufficient protection if necessary.

9.5 Potential for learning or transfer

Development in dialogue can be seen as a form of design thinking, because it often is an approach to a wicked problem: seemingly incommensurable objectives and conflicting interests on heritage, environment and economy.

Because of the comprehensive approach by design thinking on a metalevel the practice should be transferable, regardless location, legislation or problem. However, differences in culture, could be hampering the practice. For instance in more formal settings the process of open and creative dialogue could fail.

9.6 Further information

<https://maasjacobs.nl/projecten/foodhallbreda/>

WHY DID WE CHOOSE DEVELOPMENT IN DIALOGUE?

We chose development in dialogue because it is a useful and easily transferable method for an ecosystemic approach to water related heritage



10. Redoute



10. Redoute

“

The practice of making cultural heritage more perceptible while solving water management issues during the realisation of new nature is transferable if we analyse the ingredients needed for success: soul, trust, quality, theatre and courage. Together they will lead to a common pride

10.1 Detailed information

At the northside of Breda is a large polder landscape called Lage Vucht, which translates as low, humid area. A polder is drained wetland. Until recently the use has been mainly agricultural. Further back in history, during the Dutch revolt, the Lage Vucht played an important role in the defence of Breda. The polder could be inundated to form a water defence line. The flooded area would be overseen from small fortifications (redoubts) on the Zwarte Dijk (Black Dike).



Since 2008 the municipality has been acquiring agricultural frounds to realise a new nature area in the polder. To get the right ecosystem, the polder has to be supplied water of low acidity. Therefore Waterakkers constructed was built: in fact a giant helophyte filter.

The filtered water has to be pumped in to the polder. Rather than just engineering a plain solution, it was decided to make the cultural and natural heritage of this area more comprehensible by storytelling for visitors of the area. Another objective was to create more art in public spaces. The area is used a lot for recreational purposes.

A design was made for a series of redoubts along the dike, that would relate to the history of the polder as a defence system. It was not preferred to make reconstructions, mainly because it is practically impossible to be historically accurate. In the heritage policy interpretations in a modern design are preferred. Thus the redoubts are designed as a form of land art. Second reason not to reconstruct the redoubts exactly was the need for social safety. As seen in the picture above, the redoubts originally was an enclosed space.

Each redoubt has a specific thematic function:

- Waterredoute (waterwork)
- Vogelredoute (birdwatching)
- Veenredoute (peat harvesting)
- Militaire redoute (military history)

The first two redoutes have been realised.

In the wateredoute the flow of filtered water into the polder is visibly regulated. The realisation of the waterredoute was a good example of collaboration between designer, waterboard and the ecologist of the environmental department and the heritage specialists of the spatial department of the municipality. An external spatial designer made the design for the redoutes while taking care of the motives of the stakeholders. The waterredoute had to be functional, safe and lead to a better perception of history and heritage for visitors of the area. Storytelling and Imagineering were important parts of the process. So the design serves several purposes for different stakeholders. The practice of combining these purposes saves money and strengthens the plan as a whole. All stakeholders were supportive although there were discussions on functional, engineering solution versus aesthetic and storytelling design.

10.2 Resources needed

Before the collaboration, three parties were responsible for the development of the area.

The Forestry Commission (Staatsbosbeheer) landowner and manager of nature. One of the aims for the area was to dig off part of the polder in order to create wetter land. Making the soil less fertile was also necessary for the targeted natural populations. Because of the needed expertise the Government Service for Sustainable Rural Development (Dienst Landelijk Gebied) from the province of Noord Brabant was hired.

The waterboard (Brabantse Delta) is developer and manager of the water landscape. They are responsible for the hydrological management of the area.

The Municipality of Breda had the ambition to create reinstate (interpretations of) redoubts along the Zwarte Dijk. One of the aims was to visualize the military history of Breda and its region to make it more attractive for recreation and tourism. This is part of the provincial project Zuiderwaterlinie (southern water defence line). Therefore a concept for the complete Vuchtpolder was created by independent spatial designer Merel van der Linden.

Collaboration started because the redoubts had to be built on the property of the Forestry Commission. The collaboration between this commission and the waterboard had already started because the new to create natural landscape needed filtered water. The solution for this problem was engineered by the waterboard whilst the design was based on the concept.

The challenge in this project was to take in account everybody's interests while creating synergy. Not every party was used to work in a more integral way or easily convinced that the quality of the overall design is important and thus a reason to invest more money.

The alignment of the project was a challenge because it had to be tendered and executed within three separate organisations. The total costs of the realisation of the waterwork and the design were € 800.000. The municipality of Breda invested €180.000. Approximately €10.000 was spent on manhours, while the remaining sum was used to realise the envisioned land art design.

10.3 Evidence of success

This project integrated the ambitions of several stakeholders in one design. Participation of the waterboard was an important gain, because of their more traditional approach.

The experience of the Vuchtpolder from the Zwarte Dijk has been positively influenced. De necessary waterworks don't disturb the landscape because they are carefully designed as land art referring to the history of the area. The redoubts clarify the former line of defence along the Zwarte Dijk.

The redoubts are now part of tourist routes. Therefore they have an educational function for the provincial Zuiderwaterlinie and more local the military past of the Vuchtpolder.

The nearby educational farm uses the Vogelredoute (birdwatching) for their education about the nature of the Vuchtpolder.

The nature reserve of the Vuchtpolder was developed to stop the declining number of meadow bird species. The construction of the necessary ditch to transport the water to the polder makes the area no longer accessible to people or dogs, thus creating a safe rest area for these birds. The results are not clear yet, but positive.

The municipality of Breda had an important role in the development of a plan with various aims. Because of the willingness of the stakeholders to think in a more integral way and respect each other's aims, the project was successful. This is an important behavioural change

10.4 Challenges encountered

All stakeholders were supportive although there were discussions on functional, engineering solution versus aesthetic and storytelling design. This difference between designing and engineering is quite common in the municipality of Breda. The challenge is to get a better understanding of each other's work. The realisation of the waterredoute provided better understanding. Important in these collaborations is to make clear which costs each stakeholder is responsible for, because in the final design the lines between design and engineering are not always obvious.

10.5 Potential for learning or transfer

The practice of making cultural heritage more perceptible while solving watermanagement issues during the realisation of new nature is transferable if we analyse the ingredients needed for success: soul, trust, quality, theatre and courage. Together they will lead to a common pride.

The **soul** is the story that is told. Not only history, but also the story of a new nature and watermanagement. These three aspects have been made visible in the design. **Trust** was gained by an open approach towards each other's motives by all stakeholders. Of course there is always a cheaper and more practical solution but there were no real quick fixes that affected **quality**. **Theatre** is the way of representing the project in an attractive way. This was done by the external designer by telling and illustrating the story from multiple perspectives. The **courage** can be found in the fact it is believed project can be fully realised even without the budget for all the redoutes being available. By making the first two redoutes the story gets stronger and it will be easier to get more budget because more stakeholders see the successes of the project. The main stakeholders now share a common **pride** in the project and want to finish it.

10.6 Further information

<https://www.merelvanderlinden.com/projecten/redoutes/>

<https://www.zuiderwaterlinie.nl/11-vestingsteden/forten-in-nederland/zwarte-dijk-en-lage-vuchtpolder>

WHY DID WE CHOOSE REDOUTE?

We chose redoute as a good practice because it shows on a relatively small scale level how a good collaboration between multiple stakeholders led to a plan that combined multiple interests, strengthened the plan as a whole and saved money



11. **SACHER project**

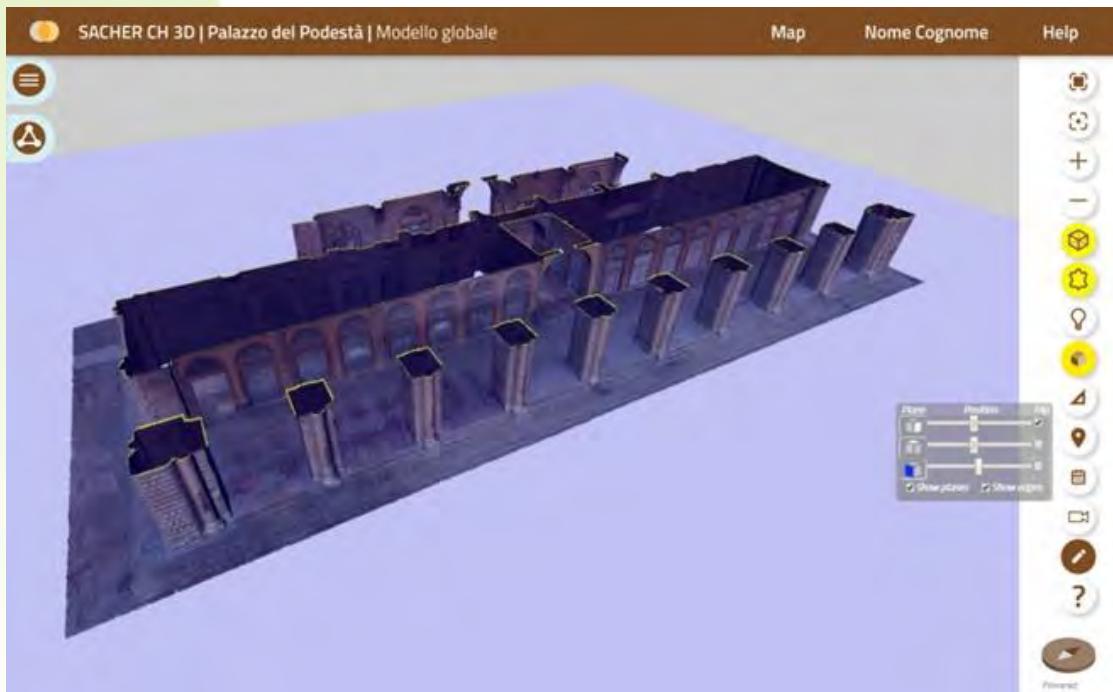
Smart architecture
for cultural heritage



11. SACHER

(Smart Architecture for Cultural Heritage in Emilia-Romagna)

“Many efforts have been devoted to design and develop innovative digital tools for disseminating Cultural Heritage among tourists and citizens (such as virtual museums, digital libraries, multimedia itineraries, etc.), but only few solutions are targeted at supporting professionals in their working activities. The SACHER project aims to address the issues faced by restorers, architects and engineers in the field of Cultural Heritage, providing an efficient system for stable documentation over time through the use of 3D models aimed at improving cultural experiences, also useful for knowledge dissemination.



SACHER 3D CH service (<http://3d.sacherproject.com/>)

11.1 Detailed information

The promotion of the tangible Cultural Heritage (CH) represents a strategic asset for the development, the innovation and renewal of the cultural and tourist circuits of the cities of art. As a matter of fact, many efforts have been devoted to design and develop innovative digital tools for disseminating CH among tourists and citizens (such as new generation applications: virtual museums, digital libraries, multimedia itineraries, visual presentations, etc.), but only few solutions are targeted at supporting professionals in their working activities. In particular, it is still lacking an advanced ICT platform able to manage CH data life-cycle (documentation > analysis > project > restoration > maintenance > management > monitoring). Indeed, one of the main problems faced by professionals in the field of CH (primarily restorers, architects and engineers) is the collection of all the data describing the life-cycle of the cultural asset to be protected and valorised. Usually data are fragmented, scattered in different archives, accessible through diverse formats (depending from the software used) and achievable by means of diversified procedures. The data fragmentation and heterogeneity force professionals to purchase several software and to obtain information from a number of channels, with a consequent waste of economic resources and time.

SACHER project aims to fill this gap, by creating an innovative and **open source ICT platform** based on Cloud Computing infrastructure, able to: integrate existing ICT platform in public and private entities; manage the complete data lifecycle; integrate heterogeneous and fragmented data sources; facilitate the storage and usage of CH data both for specialized users and for the public; interconnect private and public subjects involved in CH management.

As a key feature, SACHER provides, on top of the cloud platform, customizable service applications for data access, analysis and display targeted at both CH experts or tourists. Please, find below the four service prototypes which have been developed during the project implementation:

- (i) 3D Life Cycle Management for Cultural Heritage (**SACHER 3D CH**) is based on 3D digital models of architecture and is dedicated to the management of Cultural Heritage and to the storage of the numerous data generated by the team of professionals involved in restoration processes. The 3D digital models are used as an operational hub to connect information and geolocate data through 3D references. Access to the service takes place via the web, on any device, without installing any software and can be used in multi-user mode, through an intuitive and easy to use interface both in connection and in consultation.
- (ii) Multidimensional Search Engine for Cultural Heritage (**SACHER MuSE CH**), an advanced multi-level search system designed to manage CH data from heterogeneous sources. The objective is to offer an ETL tool (Extract, Transform and Load) able to extract information from the various CH managers, and in various formats, thus feeding a central data lake repository. The data lake consists of three zones: raw zone, containing data in its original format; refined zone, containing transformed datasets created from raw data through ETL, including new data models (star schema model suitable for multidimensional Online Analytical Processing (OLAP) and cube analytics), data quality enforcement; trusted zone, containing master datasets used in combination with refined data to answer specific end-user queries.
- (iii) Tools for Cultural Heritage as a Service (**TaaS CH**) is a suite of tools to support both SACHER application services and the network and the cloud infrastructure hosting them. The main services are:
 - the "Registry Management Service" connects the world of cloud infrastructure and that of SACHER applications and services, offering numerous additional features both at the cloud level (custom access to storage and management of domains, users and projects), and at the application level (access to the SACHER MuSE CH advanced search service). Access to the application is based on different application roles to which increasing privileges are linked;
 - the "Data / Network as a Service for CH", working at the network level, implements a data cache service that significantly speeds up the loading of heavy files, keeping a copy of them near the node where they are used. In addition, it offers SDN tools for monitoring and improving network performance;
 - the "Time Machine Service" allows users to use dated software and formats no longer supported without the need to install them locally, based on the creation of ad hoc Virtual Machines for each software easily reachable remotely.
- (iv) Cultural Heritage Explorer App (**CHEApp**) allows the user to take advantage of personalized pedestrian paths in an urban environment, to visit the Cultural Heritage of interest along a chosen path. Through the application, the user can set the types of points of interest he wishes to visit (museums, fountains, historic buildings, churches, statues, libraries, etc.) and specific preferences related to the single route (time available to complete the route, or maximum length). The application calculates the custom path, which is not the shortest of the starting point and the destination point, but the one that best matches the user's preferences, in terms of included points of interest, duration and length set. At each point of interest, the application allows the user to view some information content and to share photos, comments and tags, obtaining scores and badges for the contribution.

Finally, at the business model level, participatory design models have been used to foster creation of new content that will enable the evaluation and implementation of cultural services through the involvement of common users and cultural experts. SACHER platform is thus a candidate to become the **virtual meeting place** for a permanent ecosystem of actors.

The SACHER cloud infrastructure hosts a series of services related to CH, providing **specialized users** (mainly architects, engineers, restorers and sector-specific enterprises) with customized tools, and the **community** (tourists and citizens) with user-friendly applications aimed at improving citizen and tourist knowledge of Cultural Heritage. In particular, the SACHER 3D CH service addresses professionals in the field of Cultural Heritage restoration, as well as **public institutions** in charge of its protection, preservation and enhancement. Even though, noteworthy historical information, also accessible to general public, as well as the exploration of three-dimensional content.

The MuSE service finally offers a set of tools and models that cover data in all possible formats, thus providing a basis for different types of future analysis, regardless of the type of user and useful for making strategic decisions on restoration projects (this is a valid service also for **Public Administrations**). Stakeholders have fully supported the project and no opposition has been encountered.



Podestà Palace (Bologna): 3D Digital Model. Modeling and rendering by Silvia Bertacchi - Research Fellow CIRI ICT (2018)

11.2 Resources needed

Financial resources

SACHER was funded by Emilia-Romagna Region within the European Regional Development Fund (ROP ERDF 2014-2020). The regional grant amounts to 879.298,30 €.

Human resources (Partners and skills)

The SACHER project involved two laboratories of the Emilia-Romagna High Technology Net ([CIRI-ICT](#) and Softech ICT, now called [AIRI - Artificial Intelligence Research and Innovation Center AIRI](#)) which dealt with the design and the technological realization of the platform. The activities were conducted in close collaboration with companies with high competences in the cloud computing field and in the development and integration of complex services ([Engineering S.p.a.](#) and [Imola Informatica S.p.a.](#)) and with a laboratory highly specialized in safeguard, restoration and maintenance of artistic goods ([Leonardo S.r.l.](#)).

Technology

The cloud platform used for the SACHER project was the IaaS Openstack project: a mature open-source product created in 2010 by NASA and Rackspace and released under the Apache license. The version used was the latest available on the date of installation (May 2017), i.e. Ocata. The deployment tool was devstack, which, although not properly addressed to a production deployment, allowed the team to develop and extend Openstack's services.

Policy framework

The SACHER project has been developed thanks to the great importance given by the Emilia-Romagna Region to the Creative and Cultural Industries, which have been identified as a priority within the RIS3. Since CCI is a RIS3 priority, the Clust-ER Create has been set up. Clust-ER Associations are communities of public and private bodies (research centres, businesses, training bodies) that share ideas, skills, tools, and resources to support the competitiveness of the most important production systems in Emilia-Romagna. In these Clust-ERs, **research laboratories and centres for innovation** belonging to the High Technology Network team up with the **business system** and the **higher education** system to make up the inter-disciplinary critical mass necessary to multiply opportunities and develop strategic projects with a high regional impact. Each Clust-ER has to define primary value chains to be developed.

In particular, SACHER refers to the CULT-TECH (Technologies for Digital Culture) value chain, whose objectives are:

- to improve the recognition of a common regional, national and European identity;
- to facilitate the accessibility to the tangible and intangible cultural heritage;
- to co-create and realize new solutions (mainly in ICT field).

11.3 Evidence of success

The SACHER platform provides an efficient system for stable documentation over time through the use of 3D models aimed at **improving cultural experiences**. CH data management, acquisition and storage procedures and the SACHER cloud infrastructure are made available to cultural sector operators, providing new advanced services and operating methods characterized by **minimum barrier to technology access** and with **reduced implementation and management costs**. The use of European standards such as FIWARE, significantly extended by the addition of new API standard at the IaaS/PaaS level for capturing and storing CH data, makes the SACHER platform **flexible and usable in other contexts**. Furthermore, each kind of device, even with limited performance, can enter the 3D CH service via the Internet with **no need to install any software**, making the service suitable for on-the-spot work and support. Access is possible in **multi-user mode**, to give the opportunity to all operators to work simultaneously and ensuring **real-time sharing** of contents and immediate feedback between professionals of the work and authority responsible for constant monitoring the progress of restoration site.

The validation of the SACHER platform and services was carried out in collaboration with the Municipality of Bologna on the monuments of the historic city center (Podestà Palace and Nettuno Fountain), releasing a trial version of the final product that can be quickly transferred to the market and available in various contexts of art cities. The service for CH data management, tested by restorers on monumental buildings of Bologna city center, had a positive feedback from users and will be further implemented. To this extent, it has to be underlined the importance of the **stakeholders role** during the testing phase carried out at the final stage of the project, before the SACHER platform release. In particular, for SACHER 3D CH service, an online questionnaire has been specifically prepared and given to a sample of experts among restorers, professionals of the field of CH, operators of public institutions, etc. Questions aimed at obtaining feedback on the usability and usefulness of the innovative tools designed for SACHER services, not present in other similar applications. In general, end users appreciated the user-friendly interface of the service providing positive feedback on the advanced features designed for interaction with the 3D digital model and on data link tools, and on the efficiency of the prototype improved thanks to the adoption of cloud computing technologies. The SACHER MuSE and the CHEApp services were also tested, getting the users' general appreciation.

11.4 Challenges encountered

Data collection

Working on Cultural Heritage assets, one of the main challenges is the collection of all the related information, which are often fragmented and spread in different archives. Two categories of data have been identified:

- Documentation purposes: pictures, graphic material, paintings, financial/technical reports, CAD drawings, reports, 3D textured models.
- Scientific analysis: building techniques, chemical analysis on materials, surface cleaning samples, state of conservation and chronological evolution.
- Data management: the optimization of the work to collect and integrate fragmented data by various archives and sources was of crucial relevance, also to guarantee the interoperability with existing platforms (not to double the information!). To this purpose, the platform had to perform to the following requirements:
 - Open-source web-based platform with user-friendly interface, based on distributed cloud-computing environment
 - Storage of complex and large data
 - Smart query and time-saving search filters
 - Easy sharing and data-entry
 - Quick down-/uploading documents service
 - Protection of sensitive data and documents (Privacy was another relevant challenge to tackle, see below)
 - Integration of data in public/private archives
 - Customizable services about activity / phases

- Map location of CH
- Georeferenced 3D digital model with high-quality texture and semantic-based partition
- Different user access with credentials
- Replacement of paper documents and digitization

Security/maintenance/deployment

To host the applications and resources of the SACHER project, an ad hoc infrastructure based on the private cloud model has been set up. This choice allows the team to have full control over architectural choices, for example the choice of cloud software and those related to security, maintenance and deployment of the infrastructure. In the public cloud model, in fact, all the resources and applications are controlled by the service provider while in the private cloud they are managed and used exclusively at the organization level with an increase in the level of **security** and **privacy**. The cloud infrastructure created is also easily **federable** with other cloud platforms belonging to both public and private entities. This allows to interoperate in a simple and flexible way sharing its resources and services and taking advantage of external ones.

Long-life platform

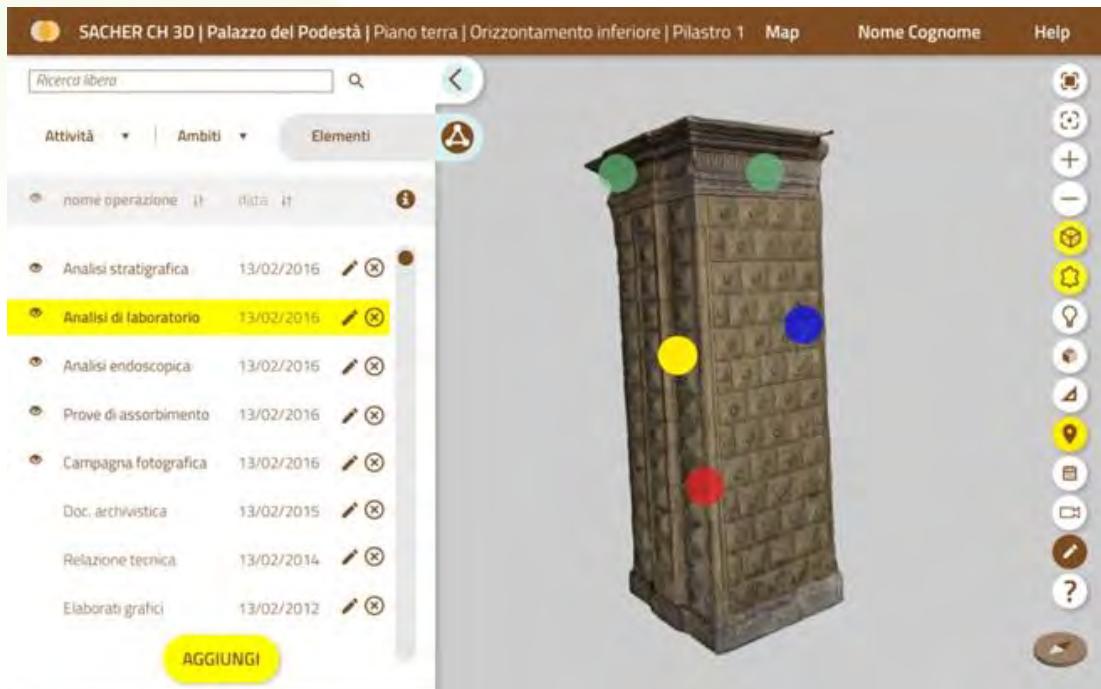
In the absence of a permanent economic support, the platform financial sustainability is a key question that require specific skills and competences.

11.5 Potential for learning or transfer

A federated and open source cloud capable of handling CH data is an opportunity for the EU territories keen on increasing the value of their assets. For that reason, the SACHER team used the cloud platform IaaS Openstack to implement the project, since it allows **horizontal scalability** achieved by simply adding new compute nodes (a compute node is the host where the virtual machines reside).

Another key element is the development of 4 different service prototypes, enabling cities to choose the most suitable and useful ones. Furthermore, being the technological infrastructure flexible and interoperable, it is possible to develop and integrate new services.

Finally, a participatory design approach was adopted to foster cultural service creation by involving content users and cultural experts. Therefore, thanks to its technological support and participatory approach, SACHER boosts the creation of an ecosystem of actors producing new value chains in the collaborative fruition of services. Open questions are the platform financial sustainability and long-term management.



SACHER 3D CH service (<http://3d.sacherproject.com/>)

11.6 Further information

SACHER Official Website

<http://www.eng.sacherproject.com/home>

Presentation showed at the 13th Italian Research Conference on Digital Library (Modena, 26th/27th January 2017)

<http://bit.ly/SACHERpresentation>

<http://bit.ly/SACHERfunctionalities>

Results of the co-creation workshop to define new business models (in Italian):

<http://bit.ly/MichelangeloGroup>

<http://bit.ly/BerniniGroup>

<http://bit.ly/CaravaggioGroup>

<http://bit.ly/BorrominiGroup>

<http://bit.ly/BrunelleschiGroup>

<http://bit.ly/VasariGroup>

Nettuno Fountain Viewer

<http://restauronettuno.comune.bologna.it/viewer/>

WHY DID WE CHOOSE SACHER?

The SACHER cloud infrastructure is available to cultural sector operators, providing new advanced services and operating methods with a minimum barrier to technology access and reduced implementation and management costs. It is an opportunity for the EU territories keen on increasing the value of their assets.

The development of 4 different service prototypes enables cities to choose the most suitable one. The infrastructure is flexible and interoperable. Finally, thanks to its technological support and participatory approach, SACHER boosts the creation of an ecosystem of actors producing new value chains in the collaborative fruition of services.



12.

Theseus project

Innovative coastline
technologies



12. Theseus Project, innovative coastline technologies

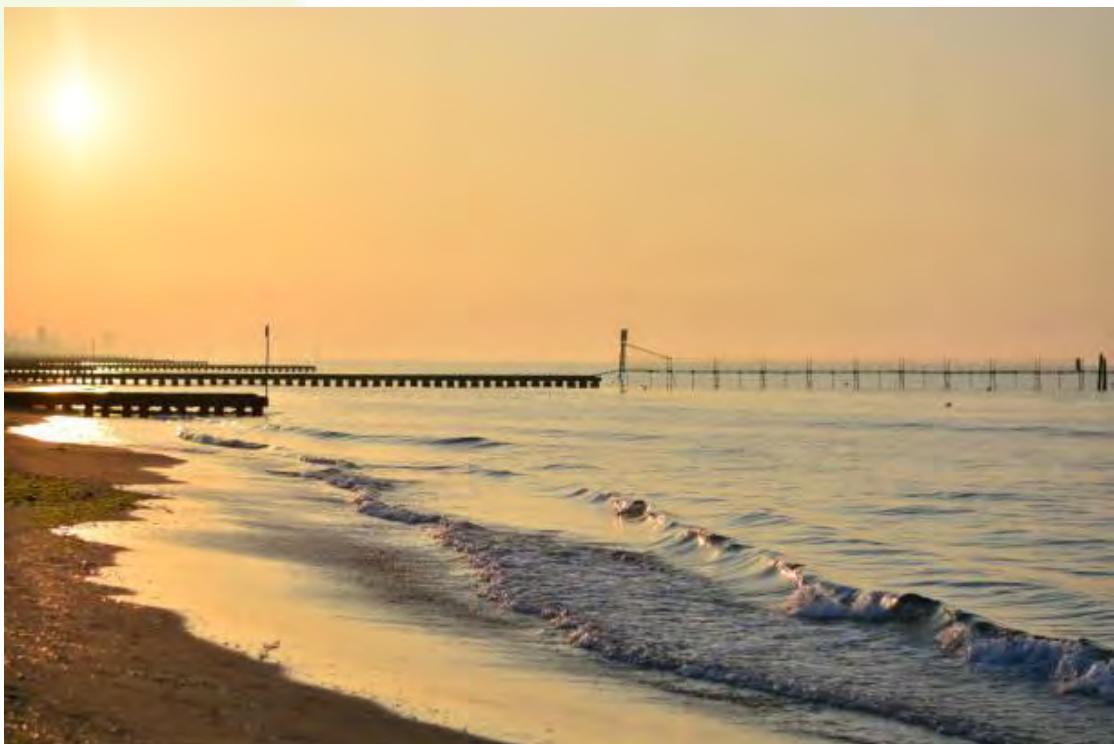
“We argue that flood protection by ecosystem creation and restoration can provide a more sustainable, cost-effective and ecologically sound alternative to conventional coastal engineering and that, in suitable locations, it should be implemented globally and on a large scale.

12.1 Detailed information

Theseus Project aimed at developing solutions for natural heritage and infrastructures that were contextualized in the local communities, considering the economic, social and cultural conditions, and taking into account the average rise of the sea and the effects on climate change and local territories (infrastructures, natural heritage, etc.). In this perspective the Theseus Project aimed to make coastal areas safer, ensuring the development of human activities and preserving coastal ecosystems (natural, infrastructural, heritage). The main objective of the project was the development of an integrated methodology for planning sustainable solutions for erosion and coastal flood management, considering technical, social, economic and environmental aspects.

The project was divided into three main phases:

- the development of a robust methodology for risk assessment, applied to case studies and exportable to other coastal areas
- the analysis and improvement of innovative, technological and non-technological solutions for risk management
- the control of the efficiency and sustainability of the solutions proposed in the case studies.



The results of the main phases were as follows:

1. Methodology for assessing flood risk

The method was based on the *source-pathway-receptor-consequence model* and aimed to clearly outline the system (infrastructures, environment and human activities) exposed to flooding, by providing a mapping of cause-effect relationships and their independence. Unlike previous studies, THESEUS was the first to consider both the environmental and social consequences and to highlight that risk is a perception of the individual and of the community, rather than a characteristic inherent in the natural system.

2. Development and/or improvement of technological and non-technological solutions for risk management

- Innovative techniques and best practices in coastal engineering:

THESEUS examined the resistance of vegetated sea embankments, methods to maintain traditional breakwaters making them resilient to the rise of the middle sea, the use of artificial submerged structures to reduce wave action and the best practices for beach nourishment. THESEUS, for the first time, also systematically analyzed the use of wave energy converters floating under the coast to protect it.

- Preservation and optimization of the coastal ecosystems' functionality:

THESEUS showed how to adopt a systemic perspective that allows the integration of habitats into engineering solutions and social aspects. This increases the risk management options and helps make them compatible with the Habitats Directive.

- Risk management:

THESEUS analysed the perception of risk in terms of problems related to conflicts of pertinence and gaps between refund requests based on evidence and on legislation, leading to identifying the regulations as the main cause of the different perceptions of coastal risk.

3. Support to decision-making in the field of the sustainable development of coastal areas

THESEUS applied the solutions proposed in the case studies, developing a multi-criteria methodology for selecting the best combination of solutions available in the specific context of the coastal area in question.

On the basis of the results achieved, THESEUS developed a **GIS based software** to assist coastal managers in planning optimal strategies to minimize risk in the short, medium and long term. The calculation system reproduces, in a simplified way, the most important physical processes (erosion and flooding) induced by waves and sea level, taking into account physical and non-physical variables, such as climate change, subsidence, population variation and economic progress.

Case studies in Italy

The case studies examined in the THESEUS project included **two sites** along the coast of the Emilia Romagna Region, **Cesenatico** (the stretch between the mouth of the Tagliata channel and Gatteo a Mare village) and **Bellochio** (the stretch between the mouth of the River Reno and Porto Garibaldi village). Like all the coastal areas of the Region, both areas are characterized by a slight elevation of the land compared to the current sea level and are affected by subsidence and erosion. They are therefore vulnerable to coastal flooding. For both sites, short, medium and long-term weather and sea scenarios were developed, taking into account the expected increase in the average sea level. The coastal systems at risk were described using the *source-pathway-receptor-consequence model* and risk mitigation solutions were proposed, the case of Cesenatico was also implemented in the GIS-based decision support system, in order to assess hydraulic, social and environmental vulnerability and therefore present and future risks (2020, 2050, 2080) to which the area is subjected, and propose combinations of mitigation measures, selectable by the user, taking into account the possible scenarios of social (population change) and economic (variation of GDP) development.

12.2 Resources needed

Budget 8.534.149,87 €; EU Contribution 6.530.000,00 €

Different competences: civil and coastal engineering, marine ecology, sociology, economics, meteorology, information technology and geomatics.



12.3 Evidence of success

The main results of the project were:

- *GIS-based decision support system*

The tool allowed estimating the hydraulic, environmental, social and economic vulnerability, therefore assessing the risk. It also allowed the selection of different technological and non-technological solutions and assessed the consequent effects on risk with reference to different climatic scenarios, and different social and economic development. The tool, addressed to technicians and managers of the coast, was accessible on the project website, along with some dedicated webinars and presentations. The possibility of creating new study sites was limited to the project partners who were involved in the development.

- *"Coasts@Risk: THESEUS, a new wave in coastal protection"*

This edition of *Coastal Engineering*, published in 2014, was composed of 18 articles dedicated to the scientific results of the project. The magazine addressed scientific diffusion with the aim of promoting interdisciplinary approaches to risk management.

- *"Coastal risk management in a changing climate"*

This book, published by Elsevier in 2014 and addressed to coastal managers and professionals, was aimed at presenting the innovative results of the project and proposing a combination of efficient risk mitigation solutions.

- *Summary brochures of the project's best practices*

These brochures were linked to specific European Directives, in order to strengthen the synergy between scientists, managers, administrators, and people in charge of Directive and legislation development in this field.

- *Information brochures on the risks in coastal areas*

These brochures were distributed and presented in schools, to enhance population's and in particular young people's awareness of the risk.

12.4 Challenges encountered

Risk assessment

1. Data for risk evaluation are hard to come by
2. Multi-disciplinary teams of experts are not always available
3. Estimates of potential damages are subjective and incomplete.
4. The relapses on ecosystems and heritage are quite difficult to estimate quantitatively on a medium long-period

Risk mitigation

1. The public is not fully aware of the risk
2. Insufficient integration of different mitigation options to maximize cost-effectiveness and insufficient use of adaptive strategies for uncertainties in risk assessment
3. Funding for risk mitigation is not sustainable

Science-Policy Interface

1. Funding is usually focused on short term priorities, while the phenomena act on a much longer time scale
2. Scientists disseminate research results only within the scientific community, which creates a gap with policy makers
3. The unclear ownership of environmental policy

12.5 Potential for learning or transfer

Both cases studies in Emilia-Romagna are characterized by a slight elevation of the land compared to the current sea level and are affected by subsidence and erosion. They are, therefore, particularly vulnerable to coastal flooding like all the coast of the Region. Since this situation can be found along all the coast of the region and in other parts of Italy, the solutions developed by the Project can be replicated not only in Emilia-Romagna, but also in similar coastal areas throughout Italy.

Moreover, the large number of partners from different countries (25 from 12 EU Member States and 6 international ones: China, Mexico, Russia, Taiwan, Ukraine, USA) allows replication and adaptation of the outcomes in several world countries and in different geographical, social and cultural contexts.

At the end, considering these actions compared to "wave framework", this GP could give relevant elements for what concerne territory resilience, with a specific focus on Parco Marittimo, but also on the other areas on the waterfront. Several aspects could be considered in the view of a policy changes: ecosystem and naturalistic area preservation, infrastructures and heritage maintenance, refurbishment and risk assessment and prevention of climate change effects.

12.6 Further information

<http://www.pdc.minambiente.it/en/progetti/theseus-innovative-coastal-technologies-safer-european-coasts-changing-climate>

**WHY DID
WE CHOOSE
THESEUS?**

Theseus project was chosen as a Good Practice into WaVE framework for the positive spillovers potentially implementable into Ravenna redevelopment site (e.g. Maritime Park).

Indeed, it would be very interesting, also at interregional level, to adopt the technological outcomes of the project to predict the level of water and the flood risk in order to orientate and optimize policies, regulations and approaches to infrastructural and natural heritage management, redevelopment, etc.

[Luca Laghi – Chief Technical Officer of CertiMaC, Italy]



13. Water Museum of Esztergom



13. Water Museum of Esztergom

“ Water Museum of Esztergom is an interesting example of a museum dedicated to water-linked heritage aiming to raise awareness of environmental and water responsibility and to show the water-related cultural heritages of the region

13.1 Detailed information

The Komárom-Esztergom County is very rich in water, including mainly rivers and lakes. These waters are extremely important (and used to be important) in the life of local inhabitants. Lots of former jobs were related to water. The Danube (the most important river of the region) is a natural border between Hungary and Slovakia, and also plays important role in tourism and transportation. The region is also rich in water-linked cultural heritages, especially in intangible heritages. Climate change has become one of the most pressing problems of our days also in our region. The children of the region and the visitors are not always familiar with these traditions, and the effects of climate change, that is why the Danube Museum plays important roles.

The **Museum of Hungarian Water Management and Environmental Protection (Danube Museum)** was established by the National Water Authority in 1973 with the aim of collecting documents and objects related to the Hungarian water management, and to keep a record of the collection, and present it at exhibitions. With integrating general human, scientific and technical knowledge and showing different aspects of managing water and other natural resources the museum wants to raise awareness of environmental and water responsibility in people and also to show the water-related cultural heritages of the region and Hungary. The museum has control over the water monuments and small collections belong to the 12 territorial water directorates. Moreover, the Danube Museum is not just a water management museum, but the museum of environmental protection, so deals with the following questions: How the Earth's water resources changes? How climate change affects wildlife? Therefore, it is an important task for the museum to develop the museum's collection from an environmental point of view and to educate people about the environmental protection.



There are lots of similar museums worldwide dealing with water and the history of water supply, but as we know the Danube Museum is one of the most complex ones as it shows all aspects of water and also water-linked traditions of Hungary and Komárom-Esztergom County in an “experiment-based” way.

The museum is located in Esztergom downtown, in a baroque building (also a cultural heritage) which was built in 1730 for as a capitulars building. In 1998 the building was renovated and the exhibition has been renewed. With this exhibition, called Water-Time, the museum **won the Museum of the Year award in 2001**.

The museum opened a new permanent exhibition in October, 2019 after 1,5 year of planning. It explains in a clear manner **the presence of water in the natural world**, highlighting various **inventions** developed over the centuries to harness it intelligently, such as the use of hydraulic power, irrigation and transport. The main purpose of the new exhibition is to retain its old followers, guests, but also to reach out to new target groups. The condition of this is to provide an experience for the young adults. **Learning with experience** - a huge challenge that the Danube Museum's new permanent exhibition is trying to meet. The exhibition consists of various units; presents the past and **present of water management, illustrates the use of water power**. Visitors can learn more about **river regulation, shipping, climate change and history of bathing**. In a separate section different water innovations, the Lake Balaton, mineral waters and soda water are presented. The museum also has a unique collection, including stories, accessories, documentations of "old water-linked professions": pannier for gold, Bulgarian gardener, Danube water vendor, water miller, digger, old-way fisherman, boat carpenter, ice picker or cane cutter etc. of our region. All these are water-related intangible cultural heritages of the region. The climate change is also an important topic.

Unlike the usual form, visitors do not need to follow a specific route in the exhibition. Everyone is free to go around, collecting as much information as they are interested in. Lots of pictures, films, games, animations and just a few texts – this is what characterizes the new exhibition. The Danube Museum is a popular destination for families so parallel content for different age groups were created. The concept of creating the new exhibition was not only to show the past but to reflect on the present. They present each topics from its historical background until nowadays so the guests can understand the things they use every day.

The museum education has always been important. That's why the museum created the education occupational room. During school time museum educators offer craft activities and playful water experiments or museum lessons connected to the curriculum for all age groups, from kindergarteners to university students. The museum's demonstration toolkit consists of mock-ups, models, and other educational aids. They have 8 different lectures for nursery age children, 15 for students from grammar school and 19 for students from high school. They organize summer camps for both younger and older children, thematic days before the main holidays and special guided tours for them. Moreover, the Museum celebrates the most significant days of environment protection (World Water Day, Day of Earth, and National Danube Day) with special programs. At the Night of Museums in June cultural programs and open stores provide an exciting museum visit at night. In autumn, they organize family programs for all day for young and old in the confines of the Autumn Festival of Museums.

Stakeholders of the new exhibitions:

The concept of the new exhibition was created by Tímea Szalkai, the former museum director and István Horváth, the deputy museum director with the assistance of the staff of the museum (ethnographer- museologist, restorer, and 2 museum educators etc.) The exhibition could be created thanks to the Climate Friendly Municipalities Association, who, won EU funding for. The museum's superior body, the General Directorate of Water Management also supported the renovation. The construction company, the Narmer company (Narmer Építészeti Stúdió Bt., played a significant role in shaping the final form of the exhibition.

Beneficiaries of the new exhibition and the museum:

- children, teachers and inhabitants of Komárom-Esztergom County, and from Slovakia (especially Nitra County)
- tourists, who visit Esztergom and the region
- ethnographers, museum educators, historians, biologists
- the enterprises working in tourism in Komárom-Esztergom County (because some of the visitors come to region and spend their money there because they heard about the museum)

13.2 Resources needed

The **total cost** of the new exhibition was 276 000 000 Ft (**cca. 823 880 Eur**). It was financed by the Association of Climate Friendly Municipalities, who won financial supports from EU for that purpose.

Altogether **10 persons** (the director and the deputy director of the Museum, a biologist, an ethnographer, a museologist, a restorer, two museum educators, a historian, an architect and an IT expert) were directly involved in the content development of the new expenditure and its implementation. In special thematic matters water experts helped with advice and proofreading. Currently the museum has 13 employees.

The uniqueness of this museum is that it **combines the regionally important thinks**, like the history of the Hungarian water management, history of the “old water-linked professions” relevant for the region, facts about main rivers, and lakes of Hungary; exhibition of the old water-linked regional-based equipment (eg: old soda maker, old water machine, models of different working ships of the Hungary and the tools of the shipwrights; the pieces connected to the building and cleaning of canals; tools of the “old water-linked professions” etc.,) **with the different aspects of water in general and the effects of climate change** both in the region and worldwide. Moreover, it also offers solutions for an “ordinary person or child” how to fight against climate change.

13.3 Evidence of success

Collecting intangible heritages related to a specific topic and showing it to the public is one way of preserving heritages. The museum is one of the **most visited museums** in the area, several times was a “**museum of year**” in Hungary. It functions as a collection of water-linked intangible heritage of the region. It is also a tourism product, what **attracts cca. 20 000 visitors/year**.

It absolutely reaches its aim to show the visitors the importance of water, history of Hungarian water management, water-related old cultural intangible heritages, the effects of climate change, the importance of environmental protection. The way of showing these is very interesting for all age groups, because there are parallel contents for different age groups in the new exhibition.

Children from the county and also from Slovakia are among active visitors of the museum. They not only visit the exhibition with their classes, but participate in one of museum lessons or other kinds of events or exhibitions offered by the Museum. The museum lessons have to be pre-booked by teachers. There are 2-3 lessons each day, as the demand for that is very high. Thanks to these lessons pupils become more committed to water-related intangible heritages, nature, environmental protection. The topics of these lessons is flexible, according to the participants’ needs.

The new exhibition (opened in 2019) is very popular, so thanks it more people can learn about the importance of water, water-related history and water-related heritages of the region etc. Some of the visitors were visited the region (and heritages of the region) because they hear about this museum and wanted to see it. The museum has more and more followers in the social media from all over the world. In most cases the followers came to the museum to see the exhibition with their own eyes. Many of those who have been there will come again because they still have something to discover, they want to see things again. The visitors’ feedbacks about the new exhibition and museum education “courses” is very positive. Teachers told, that their pupils are very interested in taking part in the events of the museum and they try to act more environmentally friendly after a visit.

The description of the main stakeholders can be found in the “Detailed information on the practice” section.

13.4 Challenges encountered

One of the main challenges was **to figure out how to create in a monumental environment** (the build of the museum is a monument) **a modern exhibition with 21st century mechanical and IT tools**, that attracts people from all ages. To manage this, many compromises had to be reached and long and precise planning was necessary. This new exhibition in Danube Museum was planned for years, the implementation took 1,5 years (The infrastructure for the IT equipment’s missed, so it had to be created first.) persons from different fields were involved during the content development and implementation. Some element of the new exhibition is based on the previous exhibition. The former director of the museum (who was the main creator of the new exhibition) visited several museums, conferences, had plenty of meeting with experts before came up with the idea of the new exhibition.



The main challenge since the opening of the new exhibition is **the continuous maintenance of IT equipment**. The main **limitation was the capacity of the building of the museum**, and the limitation of financial resources. Some of the modern IT solutions (like holograms, VR techniques etc.) had to be gave up because of its high costs and some topics had to be missed or limited due to the lack of space. The company, who was responsible for the implementation of the exhibition was crucial in the success. Some minor mistakes (e.g: one river was missed from the list of the “longest rivers of the world list”) were made, but have been corrected since the opening of the exhibition.



13.5 Potential for learning or transfer

A water museum, or some element of our museum can be interesting almost everywhere, as the topic is universal, the water is one of the key elements of peoples’ lives.

If we consider the museum as a way of preserving intangible cultural heritages of a given region it is very important to know what we have and to get a team with experts of different profession and to plan how we want to show our heritages to the public.

Creating a completely new water museum is not easy, it requires lots of financial and human resources, buildings, and several years of planning, but

Some elements of the museum can be done easily, E.g:

- a “house of old professions” can be created, where equipment can be exhibited, film can be created and showed about intangible cultural heritages, different contents for peoples of different age groups can be created, IT tools can be used for drawing the attention on a given heritage or the effects of climate changes.
- A separate section can be created in an existing museum dealing with different aspects of water, especially the aspects relevant in a given region.
- the methods of the museum education for pupils and students (eg. Education about climate changes, old water-linked professions, wetlands in general and in a region etc.) can also be adapted
- the idea of using and exhibition for showing intangible heritages of a given region is also adaptable
- the idea of using an old, monument building for “high-tech” –based exhibition can also be a way to draw attention of an cultural heritage

Some elements of the new exhibition were inspired by the Hydropolis of Wroclaw and the Micropia of Amsterdam. The space-specific elements are the element of the exhibition that are dialing with the Hungarian water-management issues, the non-space specific elements are about the climate change in general, the water in general etc.

The most important **success factors** of creating a water-museum, or an interesting new exhibition about a regionally important intangible heritages are:

- long term (at least 3-4 years) planning
- group of enthusiastic, creative experts from different fields, including at least museologists, museum educators, ethnographers, historians, biologists, IT experts etc.
- existence of the financial resources and a place for exhibition
- interactive exhibition, with IT tools, different games for children, own-made short films
- a reliable contractor who is opened to innovations
- local inhabitants and visitors who are interested to visit it
- strong marketing activities
- cooperation with local government, DMO-s, tourism offices, schools

This practice could be better, if it could show water-related objects, stories and other heritages not even from Hungary, but from the Slovak part of the Ister-Granum EGTC.

There are plans for that to broaden the exhibition, or create a small “moving exhibition” with these elements. Today all content (including the films, descriptions etc.) is fully bilingual (from October, 2019). In the future Slovak and German languages could be added.

13.6 Further information

<https://www.watermuseums.net/museum/duna-museum/>
<http://www.dunamuzeum.hu/index.php/hu/>
<https://www.facebook.com/dunamuzeum>

WHY DID WE CHOOSE THE WATER MUSEUM OF ESZTERGOM?

The Water Museum of Esztergom was chosen, because several elements of the practice can be interesting for other cities with cultural heritage related to water: raising awareness about the intangible heritages ("house of old professions"); using museum as a setting for informal learning and communicating information tailored to different age groups, diverse cultural programme as thematic days, etc

WaVE Project

WaVE is a 3-year research project (August 2019 - July 2022) funded by the European Commission within the INTERREG Europe program. The Project focusses on the **improvement of regional and local policies** to open up their possibilities to support the **development of integrated adaptive reuse of water-linked cultural heritage** sites in human settlements. The partner cities and regions have in common that their territory is rich in heritage that is historically linked to, or formed as, a result of the interaction with water as part of the natural environment. The partners have a task in the field of heritage and water. The European grant offers opportunities to work together at European level on policy strategies that are needed for the restructuring tasks related to heritage and water.

Partners

Municipality of Aarhus

Aarhus is the second largest city of Denmark with 350.000 inhabitants. It is situated by the Bay of Aarhus and has a large contingent of universities and students



Provincial Council of Alicante

Alicante is a coastal province in the Southeast of Spain. Its sand beaches, coves, mountain routes and gorgeous sunny weather attract lots of visitors all year long



Municipality of Breda

Breda is a sparkling and historical city in the south of the Netherlands with around 183.000 inhabitants



CertiMaC

CertiMaC promotes innovation in the energy and materials sector by offering laboratory analysis, industrial research and specialist consultancy services



European Union
European Regional
Development Fund

Delft University of Technologies

A leading Dutch university providing solutions to urgent societal challenges through science, design and technology



Ister-Granum European Grouping for Territorial Cooperation Ltd

Ister-Granum EGTC includes 42 Hungarian and 40 Slovak municipalities. Its main goal is to implement joint cross-border strategies related to culture and tourism



Municipality of Ravenna

Ravenna is an art and history lover's dream in the North of Italy. Its extensive mosaics are renowned worldwide as well as its sandy beaches and its port



www.interregeurope.eu/wave/



European Union
European Regional
Development Fund