



SHORT BOOK

CATTOLICA HARBOUR ACTION PLAN

EMILIA-ROMAGNA REGION

Interreg
Mediterranean



CO-EVOLVE

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CATTOLICA PILOT AREA

The Cattolica pilot area is a typical urbanised coastal area with a multi-purpose harbour (fisheries, shipyard, crafts production, pleasure boats Marina) and seaside resort structured with bath-house facilities. The harbour of Cattolica coincides, it is in the main canal, with the Tavollo river terminal stretch that flows inside the inhabited areas of Cattolica and Gabicce Mare. The harbour is classified as being of regional importance in accordance with the Integrated Regional Transport Plan pursuant to Art. 3 of the Regional Law of 1 December 1979 n.45.



For years the harbour has been subject to landfill due to Tavollo creek transport, and the harbour mouth, from the sea solid transport, which, in addition to endangering activities related to fishing and local shipping, has led to a decrease in the attractiveness of the harbour and of the seaside area to tourists, difficulties and crisis in human activities reflecting on the local economy and employment.

The harbour is made up of:

- entrance channel;
- external pleasure dock, given in concession to the Marina di Cattolica Company;
- fishing dock;
- internal channel;
- internal pleasure boathouse (small marina) given in concession to the Marina Piccola Company;
- working area,
- dock for launching and towing with travel lift;
- an indoor pleasure dock in Gabicce, granted in concession to the Società Marina di Cattolica.

Work activities take place in the harbour for around 700 people:

- 200 fishermen with their 100 fishing boats;
- 150 workers and technicians from shipyards including excellence represented by Ferretti Craft with the production of at least 30 boats over 25 metres a year;
- 10 between moorings and employees for direct services to the pleasure craft with 300 berths;
- 300 employees in commercial activities located in the port and closely connected to it, e.g. more than 20 caterers.

THREATS AND ENABLING FACTORS FOR SUSTAINABLE TOURISM DEVELOPMENT

THREATS: CLIMATE CHANGE AND MORPHOLOGICAL STABILITY

The littorals extending north and south of the Cattolica harbour are made up of sandy beaches, in general protected by groins and emerged breakwaters. The analysis of the recent evolutionary trend has shown that in the period 2006-2012 the northern beach (cell n. 4) was characterised by erosion, whereas the southern one (cell n. 3) by accretion. A few aggradation phenomena have been observed along the coastline behind the Cattolica breakwaters.

Consequently, for over 20 years, the Municipality of Cattolica and the bathing establishment owners have removed sand from the beach behind the first 10 southern artificial reefs (thus avoiding the connection between shore and reef) and have transported it to the northern stretch of the beach of Cattolica and Misano Adriatico, which were undergoing slight erosion (Montanari & Marasmi, 2012). As this is a highly touristic area, the reduction of sediment losses from the coastal system is a very important factor in the framework of the regional coastal protection strategy. Due to this coastal asset, climate change effects are expected to have a relevant impact on the coastal morphology, in particular if the rise in sea level rise is linked with an increase in storm and high-water events.

THREATS: LITTORALISATION AND URBANISATION

The high density of urbanisation and littoralisation of this area is one of the main issues that affects all the activities in relation to coastal protection and management, and that will, of course, increase the flooding risk during storms.

THREATS: POLLUTION AND OTHER ANTHROPOGENIC PRESSURES AFFECTING ECOSYSTEMS

Artificialisation and habitat loss: The data reported for both indicators refer to the 10km-wide coastline belonging to Rimini NUTS3 region (ITH59). The area is extremely highly artificialised (18.50% of artificial areas over NUTS3 10km wide coastline), with natural areas to a fewer extent compared to artificial areas.

Waste production Waste generation in Cattolica looks high in comparison with other areas for which information is available, especially considering that the value is already “adjusted” with tourist presences. The value is in line with NUTS2 regional production, which is the highest in Italy. There’s an estimation of marine litter collected along Cattolica’s beaches: 1500 to 2400 t/year. Light pollution: The PA has very high light pollution, especially in comparison with other PAs. The data reported refers to the mean value calculated at the NUTS3 10km coastline. Light pollution is a direct consequence of urbanisation and “wild” coastal development which occurred in this area in the past century.

THREATS: CONFLICTS AMONG DIFFERENT USES ON LAND AND AT SEA AND LAND-SEA INTERACTION

In general, tourism is highly dependent on a healthy environment, and the key areas of conflict regarding the coexistence of tourist activities and other economic sectors are: conflicts concerning the use of space; exploitation of the same coastal and marine resources; conflicts related to the degradation of natural ecosystems. The multi-uses taking place along coasts make them highly vulnerable to both human and natural hazards, causing adverse effects on each other (land use conflicts) and on the coastal marine environment (anthropogenic activities - marine environment conflicts). These conflicts weaken the ability of the ocean and coastal areas to provide the necessary ecosystem services upon which humans and all other life on earth depend.

ENABLING FACTOR: COASTAL PROTECTION MEASURES

The littoral of Cattolica is strongly devoted to beach tourism, especially for families and young visitors. In 1934, a fishing dock was built near the west pier, and in 2006, the new offshore sea protection works of the yachting marina of Cattolica were built in front of the old port and the dredged quantities of sediment (around 100,000m³) were used for beach nourishment purposes in the adjacent areas suffering erosion and protected by emerged barriers. The cost of erosion prevention of the beach is the same for its maintenance, mainly consisting of beach nourishment. In fact, from 2000 to 2010, 10,000m³ of sand (estimation of the cost is around €150,000 for each nourishment action) were nourished every 5 years to the coastline. A sediment loss of 22m³/m have still been estimated in the period 2006-2012, although the presence of protection structures, revealing an unstable equilibrium of the area in terms of sediment budget, as having obtained benefits from the nourished sand. No intervention for the hard protection works maintenance occurred in recent years. The improvement of coastal protection measures will be one of the outputs of the pilot site small-scale investment. The right and low coast management of the port internal sediments can boost tourism and improve sand management of the whole stretch.

ENABLING FACTOR: ECOSYSTEMS PROTECTION

Coastal biodiversity and landscape protection: the PA is a very small (6.2km²), highly urbanised coastal area with a harbour which serves various purposes: fisheries, shipyard, production of crafts, and pleasure boats. Cattolica is also a seaside resort structured with bath-house facilities. Since there is silting of the internal harbour area, coupled with social crisis, the PA needs to be re-launched for sustainable tourism. In light of this, there is a N2000 hilly site in the proximity of the PA, named “Colle s. Bartolo”, which could serve to extend the current tourist offer. Five EU habitats were identified in this N2000 site: reefs; annual vegetation of drift lines; semi-natural dry grasslands and scrubland facies on calcareous substrates (*Festuco-Brometalia*); eastern white oak woods; *salix alba* and *populus alba* galleries. A management plan for the N2000 site needs to be put in place in order to effectively manage and protect it, but also in order to better plan sustainable tourism coupled with existing recreational activities in Cattolica.

ENABLING FACTOR: TRANSPORT AND ACCESSIBILITY

The area is well-connected with the intercity bus and train stations. The nearest international airport is 12km away and ferry port (Ancona) is 100km away. This PA may provide easy tourist accessibility. There are no big ports in this PA, however smaller marinas and beaches are present and may need timely dredging and coastal protection or beach nourishments in order to maintain good accessibility. The pilot site small-scale investment will help the multi-purpose use of the port, boosting tourism and accessibility to the port and to the city.

ACTION PLAN FOR SUSTAINABLE TOURISM

A plan of actions was therefore developed relating to tourism and economic activities - to improve water consumption, pollution and waste production - and to evaluate sustainable solutions for the management of the seabed, in order to reduce the need for dredging, starting a path of collaboration between the various public and private entities operating in the port area.

The participatory process was co-designed with local stakeholders along these lines. Over the past 12 months, 4 laboratories have been set up in Cattolica involving different stakeholders: public bodies, universities, associations and companies. The public event "Ti Porto nel Cuore" that was held on 14 March 2019, was an opportunity to present the ideas and proposals that emerged during the 4 workshops.



ACTION N°1: INDICATIONS FOR A PROTOCOL OF UNDERSTANDING AIMED AT MANAGING THE SEABED OF THE HARBOUR COMPLEX

The Protocol of Understanding is a coordination tool in the presence of public and private actors for the operation and management planning of the port system in the inter-regional port of Cattolica–Gabicce. This is particularly oriented to maintaining the fullness of the seabed. There are practical needs and experience of a single field in the presence of many realities. From a theoretical point of view, it is inspired by the principle of holistic vision, characteristic of GIZC Single Ambit. In the case of a medium-small port, with highly promiscuous and inter-regional use, (recreational tourism, professional fishing, shipbuilding, identity and recreation for the city), the protocol identifies the place where the various interests at stake can be met. Then, the protocol can provide the coordination activity that in the large national ports, is one of the tasks of the Port Authorities which, however, have dedicated Technical Offices, as opposed to the Port Municipality administrators.

ACTION N° 2: FEASIBILITY PROJECT FOR THE REALISATION OF AN OVERALL SYSTEM FOR REMODELLING AND MANAGING THE SEABED WITH THE USE OF EJECTORS

The aim of this action is to extend the installation of further ejector devices plant in other critical areas (for siltation or sand accumulation) of the port of Cattolica. The concept is to ideally equip the main critical areas with similar plant, using the same technology as the demonstration one already installed, in order to reduce the frequency of traditional dredging operations (or even avoid it) and promoting a more sustainable management of the port's seabed.

Technology

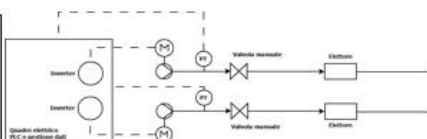
The ejector collects the sediment that is naturally brought into its area of influence, and therefore does not introduce or remove anything. Once the plant reaches steady state conditions, the marine ecosystem is no longer modified.

The project has financed the installation of a demonstration plant installed at the GAM dockyard in Cattolica (Rimini). Unlike experimental installations made in the past, the plant is not operating near the mouth of the Port, but within the "Porto Canale" (Tavollo torrent). The sediment that the plant moves is mainly composed of silt and clay, in a mix with prevalent water content.



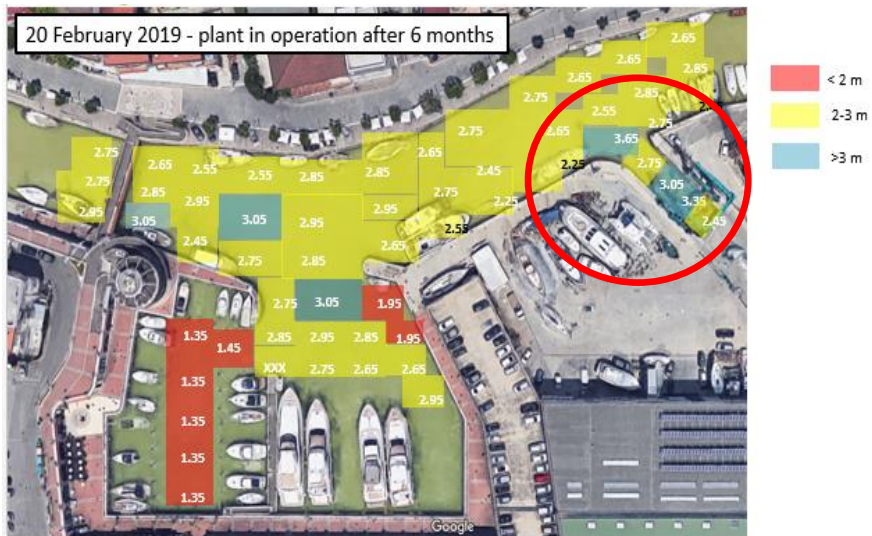
● Ejector position
(indicative)

The System is composed of two ejectors, each fed with pressurized water from a dedicated submerged pump. The supplied flow is adjustable, even remotely, by inverter. There is also a pressure measurement at the pump outlet. The operating mode of the pumps is programmable by time slot.



First results

The preliminary results show that the ejectors have maintained the post-dredging backdrop. In more detail, the ejector inside the haulage basin was continuously moved by the GAM personnel, obtaining excellent results in terms of maintaining the seabed inside the hauling basin.



The energy consumption of the devices is still being optimised: the objective is to check which are the minimum power supply conditions of the devices capable of guaranteeing effectiveness in maintaining the seabed.

Future developments

Further system efficiency improvement:

- Possibility of integrating the automated management of the plant acquiring the “full danger” signal of the Tavollo torrent; this would make it possible to plan reduced operating hours with greater safety, imagining that it would also be possible to switch off the system;
- Continuous verification of the effectiveness of the plant: once the effectiveness of the plant has been verified even at reduced speeds, it will be possible to evaluate further reductions in consumption for the identification of the optimal operating value of the plant;
- Further possible location of ejector device plants in the main critical areas of the Port of Cattolica, depending on financing channel activation, regional, national and European.

ACTION N° 3: INDICATIONS FOR SEPARATE WASTE COLLECTION IN THE PORT AREA

The Port of Cattolica has different functions: productive and tourist.

- The fishing dock basin is home to around 100 boats;
- The 2 tourist marinas are home to around 180 leisure boats;
- The production shipyards construct luxury yachts (about 200 employees);
- The storage shipyards provide services for fishing boats and leisure boats, and services for the finishing phase of luxury boats' production;
- The port is located in full urban context, adjacent to the waterfront and the beach and within the port area there are commercial activities such as restaurants, bars, ice-cream parlours, shops, kiosks, hotels, residences and B&Bs, etc

Waste production in the port area

Waste of various kinds is produced, both for the productive and commercial part:

- Special waste (stockings from mythological plants, mineral oils, rags and filters, tops and disused nets, other accidentally caught material - buoys, logs, tires, etc.);
- Urban and similar waste (paper, cardboard, plastic, glass, organic, undifferentiated);
- Waste from sweeping, from road baskets, from the water mirror, from port events.

Collection and management of special waste

Cattolica is the first tourist municipality that introduces the “integral door-to-door” and the TCP already in 2019. The purpose is to achieve the legal objectives on the R.D. (70% in 2020), through a more intensive separate collection. It is important to do the R.D. of all the fractions, because the waste measured in “litres” is the dry residue, or what cannot be differentiated. Moreover, is important that the operators understand how to manage the containers assigned to them for the undifferentiated and that they have to keep them in the properties, not outside, also for reasons of urban decor.

After an experimental phase of 6 months in 2018, from this year there are also “ecological islands” for commercial activities. The containers to collect waste are eliminated in different parts of the city and in the port area. Several streets of Cattolica are interested in this experiment, the Municipality of Cattolica is thinking of removing all the containers and leaving only those for paper, plastic, glass and organic. The proposal, assessed with Hera, asks that all the activities present organise minimum space to keep some containers (undifferentiated, organic, glass) and to collect the bulkier fractions (paper and plastic) in bags, directly at the utilities, as is already being carried out in other commercial areas (Bovio, Curiel, Mancini streets etc.).

The Municipality of Cattolica has participated in the Call for Municipal Waste Reduction Projects 2018-2019. (L.R.16 / 15) a project that aims to reduce the production of plastic waste with the:

- Installation of water dispensers during events, after the use of disposable materials;
- Expansion of 7 new distribution systems for micro-filtered tap water in schools and public offices;
- Promotion of public water supplied through the 3 “water houses” already present in the municipal area;
- Installation of bins for floating wastewater surface in the fishing vessels dock;
- Installation of a pair of devices called SEABIN which have the characteristic of acting as water funnels and collecting micro-plastics as well as the coarser floating waste;
- Establish commercial collaboration contracts to have waste devices on free loan. A waste device has already been installed inside the tourist dock managed by the Marina of Cattolica.

The implementation of this part of the Action Plan, and further developments, will depend on the activation of funds perhaps coming from the above application or other similar in the future, but also from possible participation in European projects and initiatives potentially in collaboration with nearby municipalities. Anyway, also in this case, the self-commitment of the Cattolica Municipality, possibly able to catalyse the collaboration of the main local stakeholders and actors (fishermen, marinas, shipyards and dockyards) is a fundamental condition.

WHO WE ARE

CO-EVOLVE is a three-year project that aims at analysing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, allowing for sustainable development of tourism activities based on the principles of Integrated Coastal Zone Management (ICZM)/Maritime Spatial Planning (MSP).

It couples a presently unavailable analysis at MED level of threats and enabling factors for sustainable tourism with local studies of seven representative Pilot Areas, to demonstrate through pilot actions the feasibility and effectiveness of an ICZM/MSP-based planning process.

Finally, CO-EVOLVE contributes to the Strategic Theme 2 (Joint Action 2.1) of the Bologna Charter Joint Action Plan: <http://www.bolognacharter.eu/>.

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