



# **SHORT BOOK**

## **ROSOLINA MARE ECO- FRIENDLY BUNGALOW**

**PO DELTA VENETO REGION  
AUTHORITY**





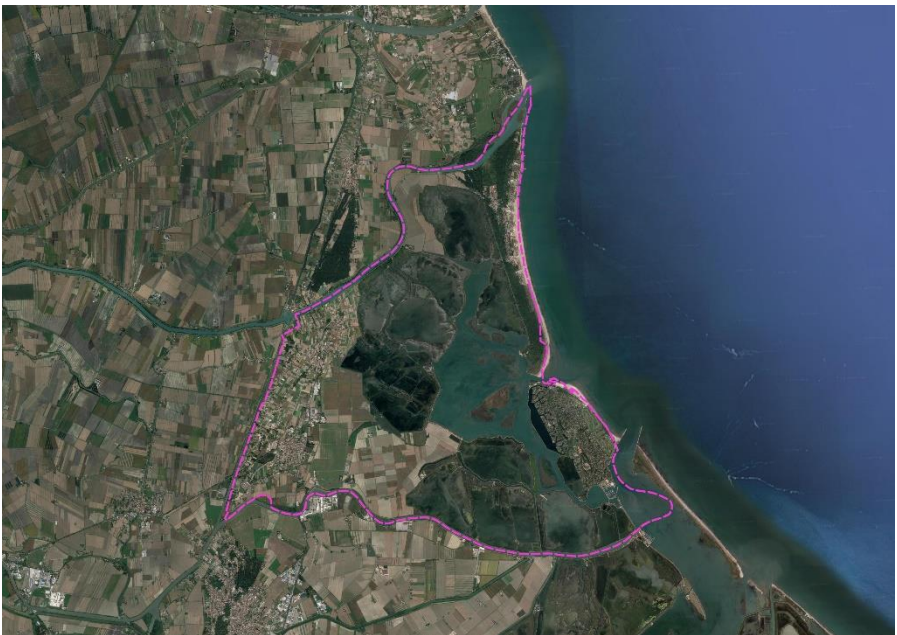
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## ROSOLINA MARE PILOT AREA

The locality of Rosolina Mare, in Rosolina Municipality, is one of the main tourism destinations of the whole Veneto coast with 1 million people present annually. The area is partly located in the Po Delta Veneto Park and in Natura 2000 sites (IT3270017 and IT3270023) and is the most important wooded area of the Po Delta. There are 3 subzones of pine grove: Porto Fossone to the North, the area around the centre of Rosolina Mare and Caleri area to the South. Another important characteristic is the presence of brackish water wetlands (50% of the total municipality territory) which contributes to the huge presence of fauna and flora in the Po Delta Area.

The coastal area has dunes and, as already mentioned above, relict pine wood. There are large fishing wetlands, locally called “valli”, which are characterised by the presence of a complex system of reed beds, canals and wetlands also used for extensive fish farming.



# THREATS AND ENABLING FACTORS (T&EF) TO/FOR SUSTAINABLE TOURISM

## THREAT: CLIMATE CHANGE AND MORPHOLOGICAL STABILITY

Most of the Italian coastlines are experiencing high human pressures, mainly due to urbanisation, tourism and industry. As can be easily imagined, also the Rosolina Mare coastal stretch, characterised by extended sandy beaches, is facing the erosion phenomena strengthened by a strong increase of urban settlements, infrastructures and economic activities affecting above all the resilience capacity of the area. Dunes have been largely fragmented and frequently destroyed and the width of most sandy beaches is now reduced to a few metres.

The combined effects of urbanisation, construction of roads and railways, building of extensive defence structures, extraction of sediments from riverbeds with the erosion phenomena are lowering the land-surface elevation, with the consequence of an increase of sea-level rise that is threatening industrial areas, urban zones and the surrounding vast reclaimed marshland. This is resulting in a serious risk of flooding and inundation, particularly in view of the on-going climate change.

## THREAT: LITTORALISATION AND URBANISATION

Rosolina Mare is facing a sensible urban sprawl given the high demand of seaside tourism and ecotourism. From 2001 until 2012, the population in the area increased and littoralisation, with subsequent urban sprawl, is one of the main causes of urban functional disorganisation, in terms of the use of services and transport efficiency.

## THREAT: TOURISTIC FLUXES AND CARRYING CAPACITY

In 2014-2015 January-August period, Rosolina Mare faced an increase of 4.7% in terms of arrivals, 50% of which was composed by foreigners. The amount of arrivals should be carefully taken into consideration in the coastal area and in the coastal cities, since their carrying capacity can change dramatically. Indeed, the approach to new sustainable tourism offers are evolving the area in order to ensure a proper use of environmental resources by safeguarding economic introits, social and traditional aspects.

## THREAT: POLLUTION AND OTHER ANTHROPOGENIC PRESSURES AFFECTING ECOSYSTEMS

The area is quite artificialised, with natural areas to a fewer extent compared to artificial areas. Semi natural zones (agricultural land) are also widespread in the area. Habitat loss is alarming, and most natural land cover has been replaced by agriculture fields through reclamation works, as happened along the Adriatic coastline during the XX century. Regarding water pollution, 8 sites measured along the coast of Rosolina result in excellent water quality.

Concerning waste production, the Municipality of Rosolina revealed an extremely high production per capita compared to the other municipalities of the region. It has the highest waste generation for 2015 given also the strong contribution resulting from seaside tourism. On the other hand, the Municipality has a low light pollution.

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

As for the rest of the Mediterranean Region, the area is a focal point of interactions between different and conflicting socio-economic activities providing synergies and creating conflicts affecting the whole region.

The impacts from socio-economic activities and the constant competition over the allocation of natural resources have led to severe alternation both at local and regional level on coastal and marine ecosystems; coastal and maritime tourism, fisheries and aquaculture, energy extraction and exploration, agriculture, maritime transport are only few of the activities impacting on the area.

On the other hand, tourism is strictly connected to a healthy environment, so another conflict is the co-existence of tourism activities and other economic sectors such as: conflicts concerning the use of space, exploitation of the same coastal and marine resources, conflicts related to the degradation of natural ecosystems.

The multiple uses of the coastal area are making it more vulnerable to 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 coastal area to provide the necessary ecosystem services upon which humans and other life are depending.

## ENABLING FACTOR: COASTAL PROTECTION MEASURES

There are many protection measures in Veneto Region some of them focusing on the Rosolina Mare coastal area.

The *“Piano Paesaggistico Regionale d’Ambito – Ambito Arco Costiero Adriatico dal Po al Piave”* was adopted in 2012, the ICZM plan *“Gestione Integrata della Zona Costiera – Progetto per lo studio ed il monitoraggio della linea di costa per la definizione degli interventi di difesa dei litorali”*, drawn up in 2016, reported an up-to-date description of the state of the coast at a multi-disciplinary level (environmental, social, morphological, anthropic, etc.) and an accurate estimate of the sedimentary balance based on knowledge of natural dynamics and of the coastal defence actions.

The Northern area of Rosolina Mare, close to the Adige river mouth, is the most eroded and protected area, since it suffered sediment losses due to the low solid discharges coming from Adige river. Beach nourishment actions occurred from 2007, when a sand pumping system was installed offshore of the mouth of Adige. Despite the high amount of nourished sand, the erosion activity seems not to have stopped, due to the lack in fluvial sediment supply as reported in the ICZM document (2016). The interaction between engineering approaches to cope with coastal erosion and design of protection measures is an important issue to be considered in beach integrated management.

## ENABLING FACTOR: ECOSYSTEM PROTECTION

Rosolina is a small coastal village surrounded by agricultural land. There are natural areas composed mostly by wetlands and pinewood giving the locality a high value in terms of environment. Indeed, tourism and ecotourism are the main local economy drivers and are increasing over the years.

Moreover, Rosolina Mare is located next to a Natura 2000 site: Delta del Po: tratto terminale e delta veneto, with 25,732 ha. The area has different environments: countryside with paleo-riverbeds, fossil dunes, embankments, fishing lagoons, brackish inlets and sandbars.

Rosolina Mare is under the Po Delta Veneto Region Authority, a Regional Park that actively promotes organised tourism activities, from the simplest bike tour along the Po river branches, to boat tours, bird watching and nature photography tours, thanks to concealed observation sites. The area is officially protected at regional and European level.

## ENABLING FACTOR: TRANSPORT AND ACCESSIBILITY

The nearest airport to Rosolina Mare is in Venice, almost 70km away. The territory is accessible by road, via bus, car or by train (the nearest train station is 39km away). The nearest cruise/ferry passenger service is located in Venice. The distance to transport hubs helps to highlight the high wild and environmental value of the area which is appreciated for ecotourism purposes.

## ENABLING FACTOR: GOVERNANCE

As with other tourism destinations, Rosolina Mare is carrying out a huge governance process in order to make optimal use of the environmental resources in order to maintain the essential ecological processes and preserve the natural heritage and biodiversity of the area.

One of the main objectives is to maintain the socio-cultural heritage of the territory, to conserve buildings and living the traditional values and at the same time enhance economic activities including a stable employment rate and income-earning opportunities.

It is important to consider the negative impacts given by the sectors mentioned above, in order to contain them and protect local values.

## INTERACTION AMONG THREATS AND ENABLING FACTORS

The pilot area is facing an important instability due to urbanisation, human pressures, tourism pressures, littoralisation, and climate change impacts. However, it has a very important value in terms of environment and natural heritage, which is highlighted by a network of 9 municipalities located in the Po Delta area and by tourism and economic operators which are trying to spread out their tradition and to create a new tourism offer able to satisfy as much public as possible.

This is strictly linked to a sustainable way of using resources and a sustainable development of new offers.

Furthermore, at local and regional level many measures and plans are available to put in effort for sustainable development and the defence of the coastal area, which is greatly threatened by the sectors mentioned above.



The analysis of threats and enabling factors that was carried out thanks to the CO-EVOLVE project is really helpful to understand the evolution of the territory and to act in consequence to preserve nature and cultural heritage from a social, economic and environmental point of view.

## THE FIRSTS RESULTS

The pilot action has been developed throughout 2019 and consists of the installation of a housing unit in Rosolina Mare. It is able to be sustainable from an environmental and energy point of view, but also from an economic one, in order to give operators the possibility to incorporate a new eco-friendly extension of receptivity in their offer. The housing, which has been tested during the summer season, has collected very important feedback from visitors.

## THE STRATEGY OF THE AREA

The strategy identified for Rosolina, to join the vision for the future tourism development of the area, is mainly based on the improvement of connections among anthropic and environmental spheres that will take part in the process. Networking and other knowledge-generating activities will support local sustainable economic growth and the creation of jobs through the development of new products and services. A more efficient management of economic activities located in the protected ecosystems, which will be reached through the generation of new knowledge about the coastal and marine environment, will allow a well-informed policy design and governance of the Po Delta River.

Knowledge of this peculiar environment is also a critical need for effective decision-making toward a blue economy transition. Translating new opportunities into productive local economies, it will require investment in the creation of an effective Po Delta network of research and development, in building technical capacity, and in creating the right environment to attract and retain outside investment. The identification and definition of on-going strategic environmental research and information needs, in an inclusive and adaptive manner, together with the appropriate funding resources and mechanisms, is essential for achieving economic development through a blue economy framework. This effort will guarantee the achievement of maximum values from any resource through sound planning and management, ensuring that the best decisions can be made regarding the balance between economic development and sustainable resource use.

## 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/>.

## CONTACT US

