

ARCHEOLOGICAL FINDINGS OF ANCIENT HARBOR IN THE PILOT SITE OF INTERREG ADRION APPRODI PROJECT IN ORTONA (CH, ABRUZZO), CENTRAL ADRIATIC SEA

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Abstract – The Interreg Adrion ‘APPRODI’ project aims at a qualitative change in the nature of tourism demand with a transnational approach and at increasing visibility of the valorized new destinations. The geological and archaeological investigations, both at sea and on the coast, aim to broaden the territory’s knowledge by realization of a geo-archaeological map, even underwater, with the indication of archaeological finds and a reconstruction of the marine traffics of the Ortonese navy within the main routes in the Mediterranean Sea. Moreover, the project will allow to create the conditions for development of cultural tourism, even underwater, increasing and enhancing the historical and archaeological resources.

In the sea in front of Ferruccio Cape, except the presence of rocks with various size due to landslides for a length of about eighty / one hundred meters from the current coastline, was found a set of wooden planks lying between the rocks, at a distance that varies from four to ten meters from the coastline, to belong to the plating of a boat or to a warf collapsed into the water.

In front of the Ortona promontory was found a glazed ceramic tube of the type of those inserted in the walls and used to channel rainwater.

The Interreg Adrion APPRODI project results will allow to increase visibility and to valorize new destinations enhancing the maritime and coastal heritage.

Introduction

Until the 9th century BC through the middle-Adriatic way, new Indo-European populations arrived in Ortona (at present in Abruzzo region), settling on the castle hill and merging with the existing population. The *epineion*, referring to the ‘Seaport’, has been named for the first time by Strabo (60 BC-20 AD) which reported the presence of "*Hortòn épineion frentanòn*" (Ortona harbour of the Frentani people); this harbour, located with piers and docks, was not a simple natural landing where the naval arsenal was housed, but a place of shelter for the boats that had made Ortona known for its expert builders. The ancient harbour was situated in the location called Lo Scalo (the Seaport) in the North of the Aragonese castle, between Ferruccio Cape-Punta Lunga Cape and Mouth of the Peticcio river-Lighthouse (Figure 1). [5, 6, 7, 15].

During the Norman-Swabian period (1080-1268 AD), the port activity was so increased as to be reported in the *Capitulare di Bajulazione* (1196 AD), a document that regulated the commercial activities of the port of Ortona [20, 21, and 22].



Figure 1 - Location of Interreg ADRION APPRODI in Ortona Municipality.

In the 11th century on the Abruzzo coast there were shipping companies and businesses serving mercantile trade, which developed in particular towards the Dalmatian coast: the establishment of the Venice-Ancona-Ortona-Slavonia network (State Archives of Venice) is referred in a document of 1200 AD. In the Seaport, current La Ritorna beach (Figure 1), it is possible to identify the traces of the ancient port's pier, composed of six rows of stone blocks, built according to the ancient technique of the *opus quadratum*, with the root of the old pier divided into three parts (Figure 2). [7, 8, 12, 18, 19].

During the Byzantine domination, Ortona became an important centre and the Venetian raid (1447 AD, June 30th) contributed to the decision to strengthen the harbour of Ortona and to move it to the southern, equipping it with advanced defensive structure extending the dock on the northern side, similarly to the present shape. During the 16th and 17th centuries, Ortona, after being purchased by Margaret of Austria (daughter of Charles V) on 1582, enjoyed of a relative stability on the economic and socio-political levels, thriving mostly through the salt trade and the construction of ships. [8, 11, 12, 18, 19].



Figure 2 - Pier of ancient harbour at ‘Lo Scalo’ locality in Ortona.

Even in the Bonapartist period of the French decade, under the kingdoms of Joseph Bonaparte first and Joachim Murat then, the site was affected by war episodes, in particular by the cannoning of the port in 1811 by the English fleet [13].

Unharmful after the Great War, during the Second World War Ortona represented the Adriatic side of the Gustav line, and precisely from the harbor of Ortona the royal Savoy family, fleeing from the Nazi occupation, escaped during the night of September 9th-10th, 1943. After the war, the harbor repeatedly underwent works of consolidation and modernization, turning it in one of the most important seaports of Abruzzo region. [10].

Materials and Methods

The Interreg Adrion ‘APPRODI’ project aims at a qualitative change in the nature of tourism demand with a transnational approach and at increasing new destinations visibility. The geological and archaeological investigations, both at sea and on the coast, aim to broaden the territory’s knowledge by realization of a geo-archaeological map, even underwater, with the indication of archaeological finds and a reconstruction of the marine traffics of the Ortona navy within the main routes in the Mediterranean Sea. Moreover, the project will allow to create the conditions for development of cultural tourism, even underwater, increasing and enhancing the historical and archaeological resources through the institution of archeological Museum in Ortona (coast of Abruzzo region, Italy) to host the ancient port findings.

The APPRODI project in Ortona includes the following target areas (Figure 1):

- the marine area of Punta Ferruccio and San Marco, in the north side of the Ortona coast, inside to the Regional Naturalistic Reserve Ripari di Giobbe;
- the marine area in front of the beach named ‘La Ritorna’, close to north port pier;
- the marine area includes of Punta Acquabella and the Mouth of Moro river, in the south side of the Ortona coast, inside to the Regional Naturalistic Reserve Punta dell’Acquabella.

Ortona landscape develops parallel to the coastline and rests on a plateau of Pleistocene sediments creating hills that form a high cliffs’ series overlooking the sea. The reefs overlap to sea reach 40 ÷ 70 meters in high, with a very interesting sedimentological features but subject to landslides typical of the area, with consequent cliffs erosion and shoreline changing. Near the mouths of rivers and according to storm surges occurs constantly shaping the coastline [2,3].

Ortona, where there are two Regional Natural Reserves, is inserted in the eastern most part of the hills of the Abruzzo Apennines. The stratigraphics of the coastal strip is the result of erosion and sedimentation processes that followed one another over time. In the top of the succession there are sands with typical structures of sedimentation environment (submerged beaches and the gravelly bodies of fluvial environment). This area is characterized by sands, silty sands, conglomerates and clays, typical of the Mutignano Formation (Pleistocene 0,012 - 2,58 Ma). [14].

The study of the area is implemented with detailed morphometric analyzes to improve the description of the coastline at low depths [1]. The geomorphological data were filtered and interpolated in order to reconstruct the whole evolution of the Adriatic coast of interest with a good approximation [17]. The analyzes will be further integrated by calculating the exposure of the slopes (Aspect), i.e. the orientation of the direction of maximum slope of a surface, quantified by the angle (on the horizontal plane) that the line of maximum slope for a cell of a DEM (Digital Environment Model) form with the geographic North, measured in clockwise. The geomorphological cartography with depth scale obtained by morphometric analysis of the area target seabed is shown in the Figure 3.

The analysis of seabed depth was used to plan the dive surveys in the areas target of Interreg APPRODI project.

The dive sampling was accompanied by photographic documentation of the archaeological finds on the seabed to better structure a cultural and archeological map for touristic valorization. For each site were performed 5 dive samplings (for a total of 15 samplings)

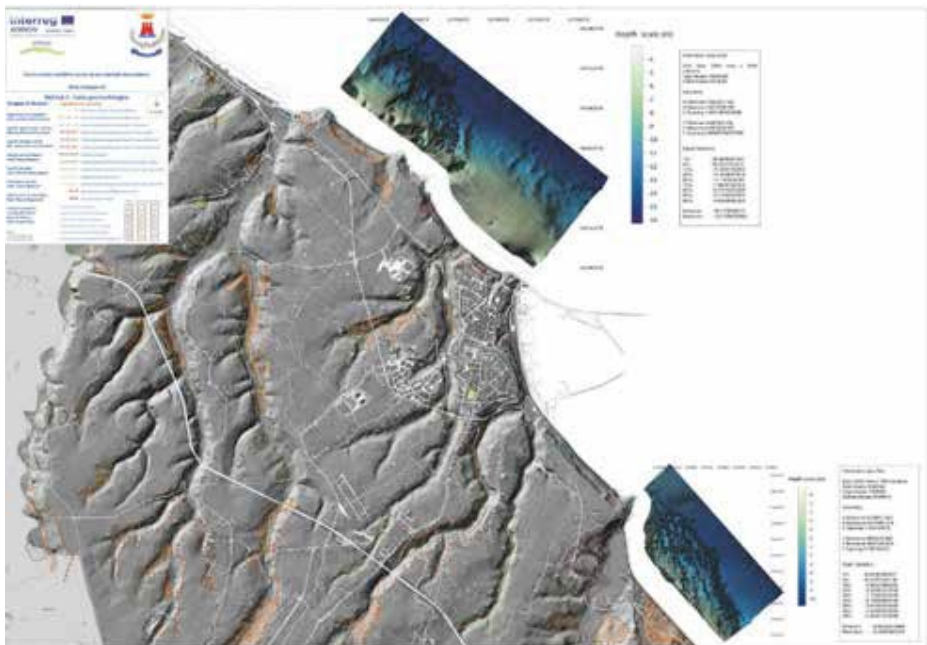


Figure 3 - Geomorphological cartography with depth scale.

where the operator has viewed the seabed up to 300 meters from the coast (at a maximum depth of -12 m) to find and geo-reference the archaeological finds.

Results

The archeological heritage found on the seabed on Ortona Municipality includes findings from various historical periods. The anthropic activities (i.e. realization of modern harbor) and the landslides of the hill partially buried the archaeological finds in depth, however very interesting remains were found.

In the North side of the coast, in the sea in front of Torre Mucchia are presents numerous rocky blocks due to landslides of the promontory over the centuries, with the remains of some metal poles emerging from the bottom for a few tens of centimeters, attributable to the piling of a Trabocco, a local typical fishery machine (Figure 4, 5). The presence of the Trabocchi along the Abruzzo coast is proved since 1700 AD [16].



Figure 4 - Rests of the piling of a Trabocco, typical fishery machine.



Figure 5 - Trabocco, a typical fishery machine along the Abruzzo and Molise coasts.

In the Ferruccio cape, except the presence of rocks with various size due to landslides for a length of about 80÷100 meters from the current coastline, was found a set of wooden planks lying between the rocks, at a distance that varies from 4 to 10 meters from the coastline, to belong to the plating of a boat or to a wharf collapsed into the water (Figure 6).



Figure 6 - Wood material from a boat or a wharf (Ferruccio Cape, Regional Natural Reserve of Ripari di Giobbe).

In front of Ortona Promontory, in the external side of breakwaters and wave barriers, until 34÷40 meters and a depth of 5 to 7 meters, the seabed is characterized by river pebbles and big rocky blocks due to landslides of the promontory. The discovery of a glazed ceramic tube of the type of those inserted in the walls and used to channel rainwater, would allow us to interpret the layer of river pebbles as a collapse of portions of the castle or other buildings built on the promontory above (Figure 7).

The internal site of breakwaters and wave barriers is characterized by a low and sandy seaside with a depth of 2÷3 meters, from where sprout large blocks of rock due to the landslides that characterized the castle promontory.



Figure 7 - Archeological finding of a glazed ceramic tube used to channel rainwater.

Conclusion

The Interreg Adrion APPRODI allowed the municipality of Ortona to analyze the archaeological heritage present in the proximal seabeds of the shoreline and to prepare a descriptive underwater itineraries of the areas identified of the projects [9]. Furthermore, the main merchant routes of the Ortona naval traffic have been reconstructed with the creation of a photographic and video catalog.

Now the archeological findings are integrated into the natural context, placed between 5 and 15 meters deep and above marine habitats, with an appreciable floro-fauna

coverage [4]. Moreover, the seabed presents several important geologic formations that show the modification of coastline during the centuries.

The main challenge of the project is developing an Integrated Cultural, Geologic/Naturalistic and Touristic map that describes in the same context the principal archeological/cultural, geologic and naturalistic sites in the marine environment of Ortona coast.

This project represents a first step of characterization of archeological and cultural heritage present in the marine-terrestrial naturalistic areas for a valorization strategy. Further analyses are need to find the remains buried at greater depths and perimeter the archaeological areas for a better conservation.



Figure 8 - Integrated Cultural, Geologic/Naturalistic and Touristic map.

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