

# Abstract



**Interreg**  
Italy - Croatia  
ASTERIS



EUROPEAN UNION

European Regional Development Fund



1506  
UNIVERSITÀ  
DEGLI STUDI  
DI URBINO  
CARLO BO



COMUNE  
DI FANO



INSTITUT ZA JADRANSKE KULTURE  
I MELIORACIJU KRŠA SPLIT



METRIS  
USTANOVA  
CENTAR ZA ISTRAŽIVANJE MATERIJALA  
ISTARSKE ŽUPANIJE



HRVATSKE VODE

Project Title	<b>ASTERIS - Adaptation to Saltwater intrusion in sea level Rise Scenarios</b>
Lead Partner	University of Urbino "Carlo Bo"
Project Objectives	<p>The overall objective of the project is to improve the understanding of spatial and temporal (based on future downscaled climate scenarios) variation in seawater intrusion, to identify and mapping needs and barriers in risk management and to provide an adaptation plan, containing practical tools for a sustainable management.</p> <p>Then, the project has identified <b>3 specific objectives</b>:</p> <ul style="list-style-type: none"> <li>- <b>Improve/update the knowledge of present and future salt ingressión situation.</b> The project is expected to contribute to a significant improvement of the knowledge of present and future salt ingressión situation in the Adriatic area from which inhabitants of Italy and Croatia can benefit. A relevant intermediate expected goal in the achievement of such objective is the realization of a numerical simulation of sea level change in the Adriatic area, which will improve already available model results. Regional and local response of sea-level change in the Adriatic Sea will be predicted according to the most plausible as well as worst case scenarios of global warming. In addition, combining the predicted sea-level changes for specific vulnerable sites with seawater intrusion models, the transient response of saline intrusion under a range of local geological and hydrogeological property conditions will be computed.</li> <li>- <b>Identify and mapping needs and barriers in the management of coastal fresh ground water.</b> The second specific objective aims to identify and mapping needs and barriers in the management of coastal fresh ground water in the assessed risk scenarios. Risks and the potential economic damages for human activities and for natural system will be assessed and mapped through the creation of a cooperation network of subject with different competences. Peculiar attention will be paid to the needs/threat represented by the touristic pressure. Case studies will be carried out in three critical sites: Emilia-Romagna Region (Ravenna Municipality), Marche Region (Fano Municipality) and the Dubrovnik-Neretva County (Neretva Delta area).</li> <li>- <b>Identify policies for future sustainable exploitation of vulnerable coastal aquifers.</b> The project is expected to contribute to the capacity of applying mitigation and adaptation policies of coastal aquifers by diminishing the risk to saline intrusion through the integration of vulnerability maps and the analysis of specific case</li> </ul>

studies. The third specific objective consists in identifying policies for future exploitation of vulnerable coastal aquifers. Strategies of response to climate change scenario (based on the scientific knowledge achieved from the project results and on the analysis of barriers and need of current management) will be developed to overcome barriers and to ensure a sustainable use of ground-water aquifers in Adriatic coasts. “Emergency strategies” immediately applicable will be proposed for the critical situation identified. Site-specific plans will be proposed on the basis of the case-studies experience implemented in the second specific objective.

**ASTERIS will contribute to the Priority Axis 2 - Safety and resilience – Specific Objective 2.1 - Improve the climate change monitoring and planning of adaptation measures tackling specific effects in the cooperation area;** but it will be also in line with pillar 1 and pillar 3 of EUSAIR strategy, since it aims to a sustainable and integrated management of coastal groundwater resources. Pillar 3 of EUSAIR address environmental quality through cooperation and it is devoted to maintain a good environmental status for marine and coastal ecosystems. According with the Com (2014)357, the threats to coastal and marine biodiversity are reduced “through better knowledge of biodiversity and coordinated implementation of Maritime Spatial Planning/Integrated Coastal Management, relevant environmental legislation”. ASTERIS, improves the knowledge on quality of coastal groundwater, that is at the basis for maintaining coastal ecosystems. In addition, in line with Pillar 1 of EUSAIR strategy, it aims to coordinate planning activities for a better governance of the coastal areas. This will be achieved through data sharing, and production of joint planning, and coordinated management tools and best practices.

## Project Partnership

The partnership is composed of two different types of institutions.

1. The **scientific partners** involved have a long experience of analysis of specific aspects that provide a solid basis for the implementation. In particular research activities of the partnership as a whole include measurements, monitoring, understanding, interpretation and modelling of geological, geodynamical and geochemical processes which is relevant for the WP4 activities and development of numerical simulation of future sea level scenario, which will be a pillar point of WP3 activities. Therefore, the scientific component of the partnership will contribute to specific goals of the project on the latter aspects:

- future scenarios of sea level rise (in house software developed at the University of Urbino)
- hydrogeological and geochemical analysis of selected case studies that forms a robust basis for the characterisation of coastal system to be analysed including application-oriented approaches.

Scientific partners are:

- **University of Urbino “Carlo Bo”**: The personnel of the Department of Pure and Applied Sciences has a long-term experience and research focus on the understanding of spatial and temporal (based on future downscaled climate scenarios) variation in seawater intrusion, the identification and mapping needs and barriers concerning risk management and the provision of adaptation plans.

- **National Research Council**: The Institute of Geosciences and Earth Resources is one of the main structures of CNR that carries field monitoring and measurement activities, laboratory (chemical and geochemical approaches, isotopic analysis, etc) analyses, data processing and interpretation, development and implementation of databases and numerical simulations.

- **METRIS**: METRIS Research Centre is an operational body entrusted with the implementation of R&D and innovative programmes of the Region of Istria.

- **IACKR**: The Institute is state-owned whose mission is to conduct innovative research projects in the field of biotechnological sciences, to transfer knowledge to target users and to participate in academic education, with the aim of economic and social benefit of the community and protection of environment.

2. **Municipalities and supra-regional agencies** involved have dedicated structures for the implementation of EU funded project that can successfully execute related tasks and be in charge of day-to-day activities related to local geological and hydrogeological monitoring, use of ground-water aquifers and risk management. These competences will allow to improve the cross-border sustainable management of marine and river water resources; ii. Enhancing the cooperation at CB level between employees, experts and stakeholders; iii. Increasing competences with marine managers and technicians. Moreover, they have a long-term experience and competence on the preparation of planning documents for water management.

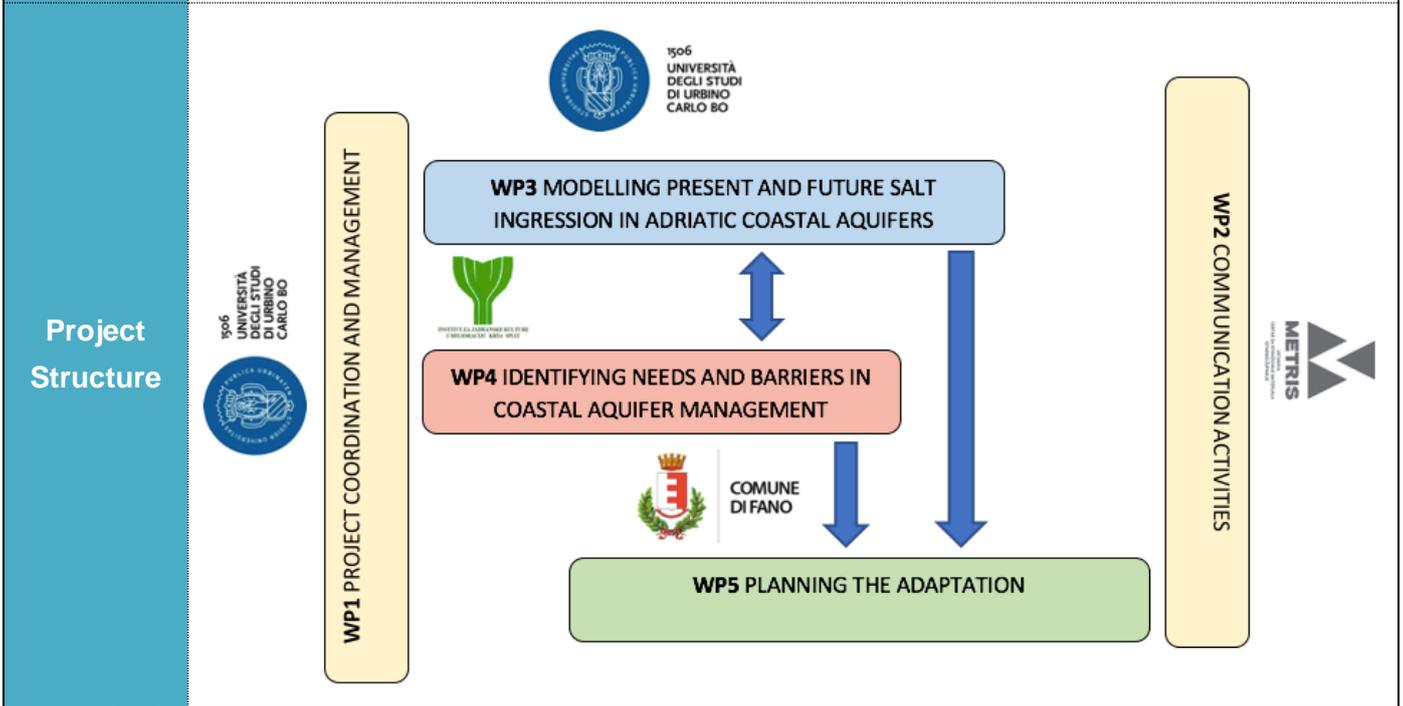
Municipalities and superregional agencies are:

- **Municipality of Fano**: Fano is the third most important town of the Marche Region. The Organizational Implementing Units involved in the project are: Pianificazione Urbanistica/Territoriale and Infrastrutture e Verde pubblico, with years of experience in risk management sector.

- **Municipality of Ravenna**: The Municipality’s Environment and Energy Department and European Policies Office will be in charge of the project. Other involved departments are the Urban planning service, the Infrastructure service, the Geographical Information Service and the Civil Protection Service through its Environment and Energy Department.

- **Croatian Waters**: Among its activities there is the preparation of planning documents for water management; water regulation and protection from adverse effects of water;

Amelioration drainage; Water use and protection; management of water quality, implementation of monitoring of surface waters; irrigation; management of the public water estate.



## ASTERIS Advisory Group

The Advisory Group (AG) will be comprised by external expertise involved in the field of coastal aquifer management, environment and climate change (Associations, Public Authorities, PPP companies, firms and single experts). AG members' views will be sought throughout the project to ensure that the approaches adopted are realistic and built on existing knowledge and experience. The external experts composing the ASTERIS AG will be identified by the LP and by the STC and will address general or technical issues where a wider consultation, other than the partnership, will be needed.

### Specific objectives of the Advisory Group

The ASTERIS Advisory Group (AG) will help the Lead partner and the STC monitoring and evaluating project progress and results. The AG will be entitled to give advice and recommendations on the strategic course of the project from the point of view of the different actors and stakeholders involved.

Special attention will be taken to increase awareness about IT-HR cooperation activities between policy and decision-makers in the Programme area, raising the interest about the project and its contents.

### Advisory Group Meeting

The ASTERIS Advisory Group will be invited to meet once per year integrating into key project meetings.

### Advisory Group role in the management structure

