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ADRIADAPT Newsletter - Issue no. 5

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ADRIADAPT – A Resilience information platform for Adriatic cities and towns started officially on January 1st 2019, and unites technicians, policy makers, planners and scientists from Italy and Croatia in their efforts for **creating a knowledge base for cities and towns in adapting to climate change**. Supporting cities in creating good and sustainable strategies, building resilience and preparing for climate change is increasingly important also for cities and towns in the Adriatic area; climate change impacts are becoming progressively concrete with more extreme weather events as well as with slow onset impacts on the population, habitats in and around cities and in consequence, on local economies.

Cities and towns, as concentrations of cultural, social and economic activities along the Adriatic coasts, need to prepare for coastal and river flooding, coastal erosion and subsidence in order to maintain and enhance their ability to support livelihoods, local and regional economies and infrastructures. Further challenges for the Adriatic coastal areas are connected to freshwater availability under threat by the salinization of aquifers and fires related to droughts and heat waves.

One of the main outputs of the ADRIADAPT project is an Italian-Croatian [adaptation platform](#) – a tool to support municipalities in both countries in developing adaptation plans or progressing their ongoing work on climate change adaptation.

ADRIADAPT project partners

Expert partners:

- [Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici \(CMCC\)](#)
- [Agenzia regionale per la prevenzione, l'ambiente e l'energia dell'Emilia-Romagna \(ARPAE\)](#)
- [Universita luav di Venezia \(IUAV\)](#)
- [Centar za regionalne aktivnosti Programa prioritetnih akcija \(PAP/RAC\)](#)
- [Državni hidrometeorološki zavod \(DHMZ\)](#)

Local partners:

- [Unione Dei Comuni Valle Del Savio](#)
- [Comune di Cervia](#)
- [Comune di Udine](#)
- [Šibensko-kninska županija](#)
- [Grad Vodice](#)

Communication partners:

- [Društvo za oblikovanje održivog razvoja \(DOOR\)](#)

Local partner-municipality: Comune di Cervia



COMUNE
DI CERVIA



- [Local community - basic info](#)

Cervia territory consists of four tourist resorts overlooking the Adriatic coast, and a hinterland characterized by rural activities. It has 9 km of sandy coastline with hotels, restaurants and bathing establishments and is distinguished by its peculiar environmental elements, consisting of the pine forest (SCI / SCZ area) and the salt pan (SCI / ZSC and SPZ - Ramsar zone for the protection of wild birds and Natural reserve for animals), included in the Natura 2000 network and in the Po Delta park, environments that preserve the flora and fauna typical of wetlands.



- Major concerns regarding climate change

Within the Adriadapt project, Cervia has chosen to investigate the main effects of climate change on the territory: urban heat islands, floods, sea rise and salt intrusion.

- Current status in development of planning documents

The Municipality of Cervia has developed the PUG - General Urban Plan, introduced by the new urban Regional Law 24/2017. The plan was developed on the basis of the principles of containment of soil consumption, regeneration (building and urban), reduction of energy consumption, mitigation and adaptation to climate change, circular economy, etc. The document was drawn up on the need to develop a model that can make Cervia a resilient city, capable not only of adapting to climate change but also to social, economic and environmental changes.

Alongside the PUG, the SECAP was developed, with the purpose to accelerate the decarbonisation of the territory, and increase the ability to adapt to the impacts of inevitable climate change, making it more resilient.

- Implemented measures

Within the project Cervia decided to investigate the main impacts that affect the territory: Urban heat islands, urban flooding/runoff, sea-level rise and salt intrusion. The primary aim is to find best practices and strategies for enhancing resilience in our city and implement adaptation actions in our SECAP.

To do this Cervia held a collaboration with IUAV University and Nier Ingegneria's, who elaborated impacts and vulnerability analysis. In particular an important monitoring activity on urban mesoclimate and microclimate has been implemented through the installation of weather stations in seven different points of the territory and thanks to "microclimatic walks".

In order to increase coastal resilience and to defend against marine ingression a proposal of reconstruction of the sand dune was elaborated, to improve the dynamic land-sea transition system.

Last but not least, a very important action for Cervia is the salt intrusion monitoring, which is under implementation thanks to a measurement campaign of surface waters and ground waters (installation of a piezometer).



Expert partner: Arpae



Arpae is the Regional Agency for Prevention, Environment and Energy, a public institution that operates in Emilia-Romagna region. It is an environmental control technical support body to the regional and local authorities and is administratively and technically independent. Activities deal with monitoring and control related with all types of chemical, biological and physical pollution in all environmental media. The Hydro-Meteo-Climate Structure of Arpae (**Arpae-Simc**) carries out operational activities and research in meteorology, climatology, hydrology, agrometeorology, radar meteorology, environmental meteorology, providing short and medium-term regional forecasts and local nowcasting products. Arpae-Simc has experience on research on climate change, impact studies, contributed to the definition of the Regional Strategy for Adaptation and Mitigation to Climate Change of the Emilia-Romagna and to the Action Plan for Sustainable Energy and Climate (SECAP).

Arpae-Simc is actively involved in local climate analysis, downscaling and mapping future climate change signal at city level through statistical downscaling models (SD), experience gained through the participation at various national and international projects. This activity has been carried out by Arpae-Simc in Adriadapt project, especially in the work package "**Climate monitoring and service**" (WP3), focused to collect and provide climate data and future projections over the project areas. The climate analysis has been done over Cervia, Cesena, Savio Valley Municipalities Union and Sibenik and Knin from Croatia.

A local climate profile has been constructed for each pilot area, data and information shared with the project partners and the stakeholders.

To this aim, firstly a set of climate indices, fundamental for the definition of climate adaptation strategies in the northern Adriatic basin, have been selected and analysed. Standard extreme temperature and precipitation indices have been considered to quantify the events: from simple percentile-based parameters to more complex indices indicating the number of days (or nights) below (or over) a certain threshold, to better identify the stress conditions (heat waves duration, maximum number of consecutive dry days) of local population.

Secondly, future climate projections of extreme indices have been constructed by Arpae-Simc at local scale, both over Italian and Croatian pilot areas, through the implementation of a statistical downscaling techniques (SD) applied to four global climate models (GCMs) from CMIP5 experiments, simulations done in the framework of RCP4.5 and RCP8.5 concentrations pathways.

The runs have been produced for time slice of 20years, namely 2021-2040, 2041-2060, 2061-2080, 2081-2100 (for both RCP4.5 and RCP8.5 emission scenarios) and changes respect to the 1986-2005 period, taken as climatic reference, are evaluated. Diagrams of future changes at seasonal and annual

level have been constructed for the above windows, while trends of projected seasonal climate indices have been computed over entered period, information shared with the project partners (Italy and Croatia).

The future climate projections for the Italian case studies show an increase in the minimum and maximum temperature in all seasons by 2100, the strongest anomalies could occur during the summer period associated with an increase in extreme events such as heat waves and tropical nights. Furthermore, the climatic simulations show by the end of the century a possible reduction in the amount of precipitation, with long periods of drought especially in the summer period and a slight increase in the frequency of intense precipitation. The signals are more intense towards the end of the century and in the RCP8.5 emission scenario compared to RCP4.5.

Climate information for each pilot area are presented in detailed in the report "*Detailed quantification of climate change in the region of interest with special emphasis on severe impacting events*".

Arpae-Simc has been actively involved in the communication of present and future climate changes, with focus on pilot areas, participating at meetings of the project. Also, together with **Ctr Education for sustainability** organized training activities in collaboration with the SOS4LIFE project (<https://www.sos4life.it/>) on the theme: "Nature-based climate adaptation" aimed at technicians from the urban planning sectors, public and green works from the municipalities of Cesena and Cervia (<https://www.youtube.com/watch?v=Ebbp635WkQs>).

Ctr Education for sustainability and **Centro Antartide** of Bologna have developed, in collaboration with the pilot areas of Emilia-Romagna, training and exchange activities aimed at the participatory and integrated construction of strategies for adaptation to climate change from an intersectoral and interdisciplinary perspective with projection also to local stakeholders. The approach used is the tactical one which involves action research to be implemented throughout the course developed.

Project's National Conferences



The banner features a dark, textured background with a circular logo on the left containing the Interreg Italy-Croatia Adriadapt logo and the European Union flag. The main text on the right reads: "ADRIADAPT Il clima sta cambiando! Esperienze di adattamento locale 12 maggio 2021 Online". At the bottom, a row of logos includes cmcc, UNIONE DELLE REGIONI DEL SAUVO, DOOR, LAPROSC, the Italian coat of arms, DPMZ, arpae, and the University of Udine.

ADRIADAPT Italian National Conference

For Italian speakers:

Segnatevi questa data in agenda! *12 maggio 2021*

"Il clima sta cambiando! - Esperienze di adattamento locale"

La conferenza italiana del progetto ADRIADAPT presenterà le esperienze locali dei due anni di lavoro sull'adattamento urbano e sulla generazione della conoscenza necessaria per guidare comuni dell'area Adriatica nella definizione e implementazione di piani di adattamento e resilienza locali. L'incontro sarà occasione di riflettere sulle esperienze maturate e intende avviare una discussione con rappresentanti di autorità regionali e nazionali su possibili forme di supporto durevoli per l'adattamento locale.

Registratevi alla conferenza attraverso questo link:

<https://us02web.zoom.us/meeting/register/tZAlc-isqjqgHdXjZEfYAv6bLmn2MXieAMMV>

Per evitare disguidi, il link di registrazione sarà personale: una volta approvata la vostra registrazione, riceverete un'email di conferma con il link per partecipare al meeting.



ADRIADAPT Croatian National Conference

For Croatian speakers:

Dana **11. svibnja 2021. godine**, u online formatu održat će se konferencija “**Klima se mijenja – promijenimo se i mi! – Konferencija za obalne županije, gradove i općine**”.

Konferencija će okupiti predstavnike jedinica lokalne i regionalne samouprave, razvojnih agencija i relevantnih centara i institucija te zainteresiranu javnost. Sudionici će imati priliku upoznati se s načinima na koje donositelji odluka mogu (o)jačati oporavak i prilagodbu svojih područja na utjecaje klimatskih promjena. Osim ideja i uspješnih inicijativa, prezentirat će se i različite mogućnosti financiranja.

Prijava na konferenciju je obavezna putem poveznice:

<https://us02web.zoom.us/meeting/register/tZEvC-mprz8sHt23OzQVujH7SUZgkXEvsnhx>. Broj sudionika je ograničen.

Ova nacionalna konferencija održat će se u okviru projekta ADRIADAPT. Projekt sufinancira Europska unija iz Europskog fonda za regionalni razvoj.

Partneri organizatori: PAP/RAC, Državni hidrometeorološki zavod, Grad Vodice, Šibensko-kninska županija i Društvo za oblikovanje održivog razvoja.



[Update on project's recent activities](#)

- Online platform for climate adaptation planning has been developed and is now in the process of content-adding. Follow it at the link: adriadapt.eu.

General Data Protection Regulation (GDPR)

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Project partners



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The project is coordinated by the Euro Mediterranean Centre on Climate Change (CMCC). Project participants include local authorities from Croatia and Italy, together with knowledge providers from the Adriatic Sea basin in the fields of climate science, climate adaptation and urban planning.

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