



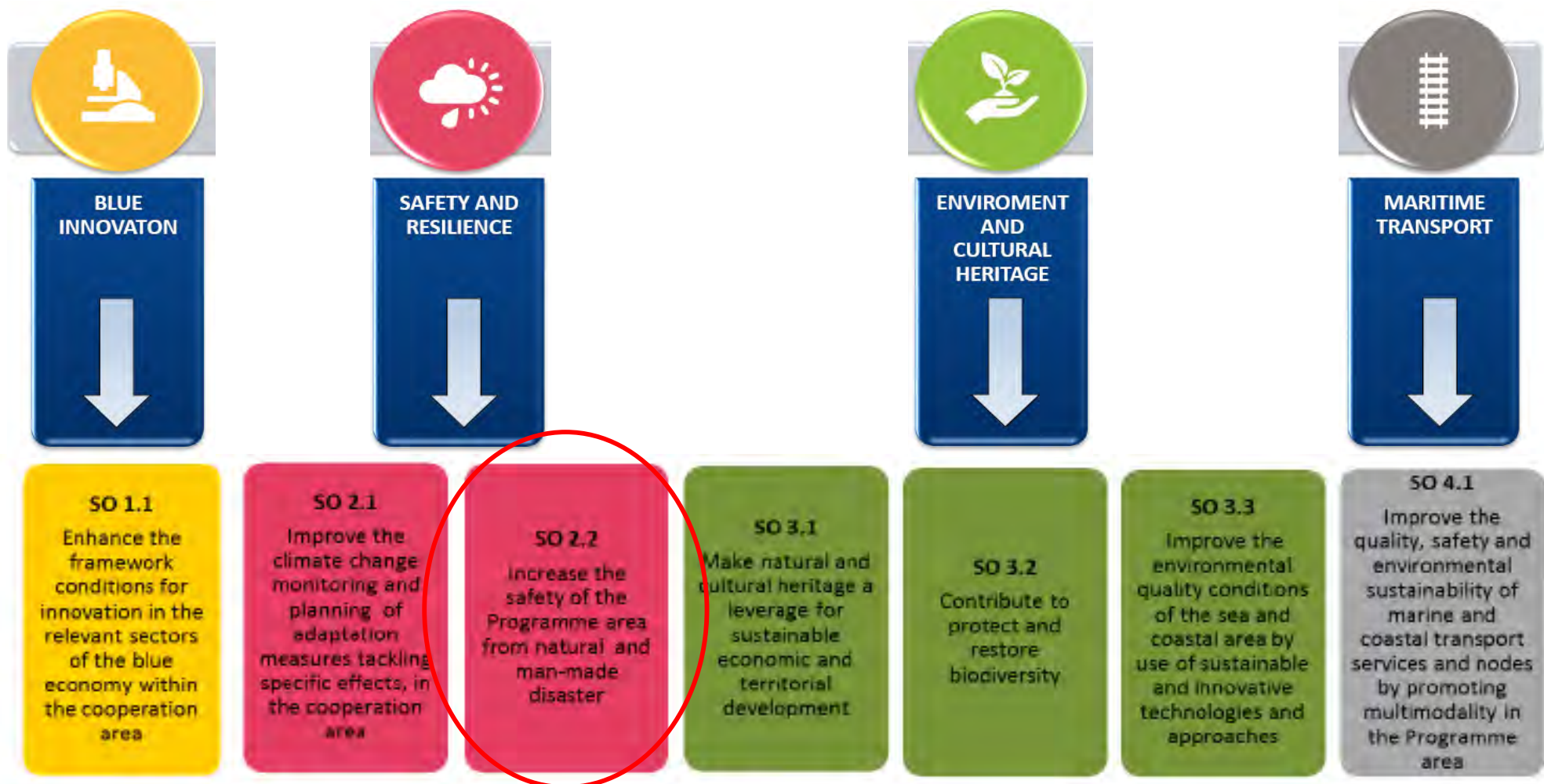
Hazard mitigation and management in Adriatic maritime and coastal environments: the AdriaMORE project

Camillo Marracino

Region Abruzzo, Italy - Project Coordinator

Italy-Croatia CBC Programme

The 4 priority axes (PA) and 7 specific objectives (SO)



AdriaMORE details

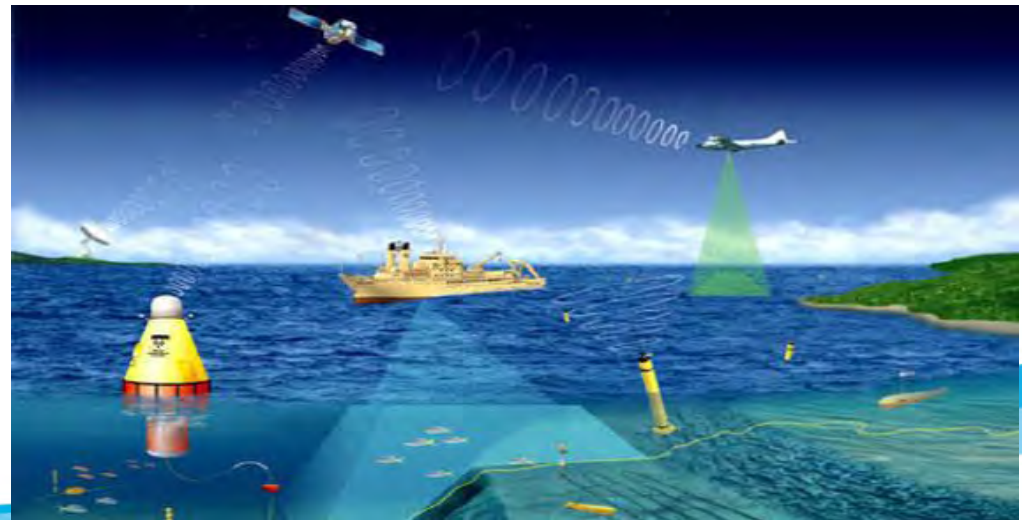
- Title **Adriatic DSS exploitation for MOnitoring and Risk management of coastal Extreme weather and flooding**
- Start date January 1, 2018
- End date June (September?) 30, 2019
- Funding line Priority Axis 2, SO 2.2
- Project Code ID 10044343
- Total Project Cost 1.150.000 €
- Partners involved 4
- Lead Partner (LP) Abruzzo Region
- JS Project Officer Diana Gracin Petrović



AdriaMORE Motivation

Hydro-meteorological and other marine hazards triggered by meteorological events, affecting the Adriatic areas represent a dramatic threat which needs to be faced by enhancing monitoring and forecasting systems.

In this respect, **AdriaMORE project** proposes increasing of the management capacity of the response to marine and coastal hazards in the Adriatic basin.



AdriaMORE Main GOAL

AdriaMORE project goal is to improve an existing integrated hydro-meteorological risk management platform focusing on the Adriatic coastal areas of Italy and Croatia capitalizing the major achievements of ADRIARadNet and CapRadNet projects.



The latter, successfully completed under the IPA Adriatic CBC Programme, were devoted to create a cross-border infrastructure of observing and forecasting systems for building real-time risk scenarios for civil protection purpose.



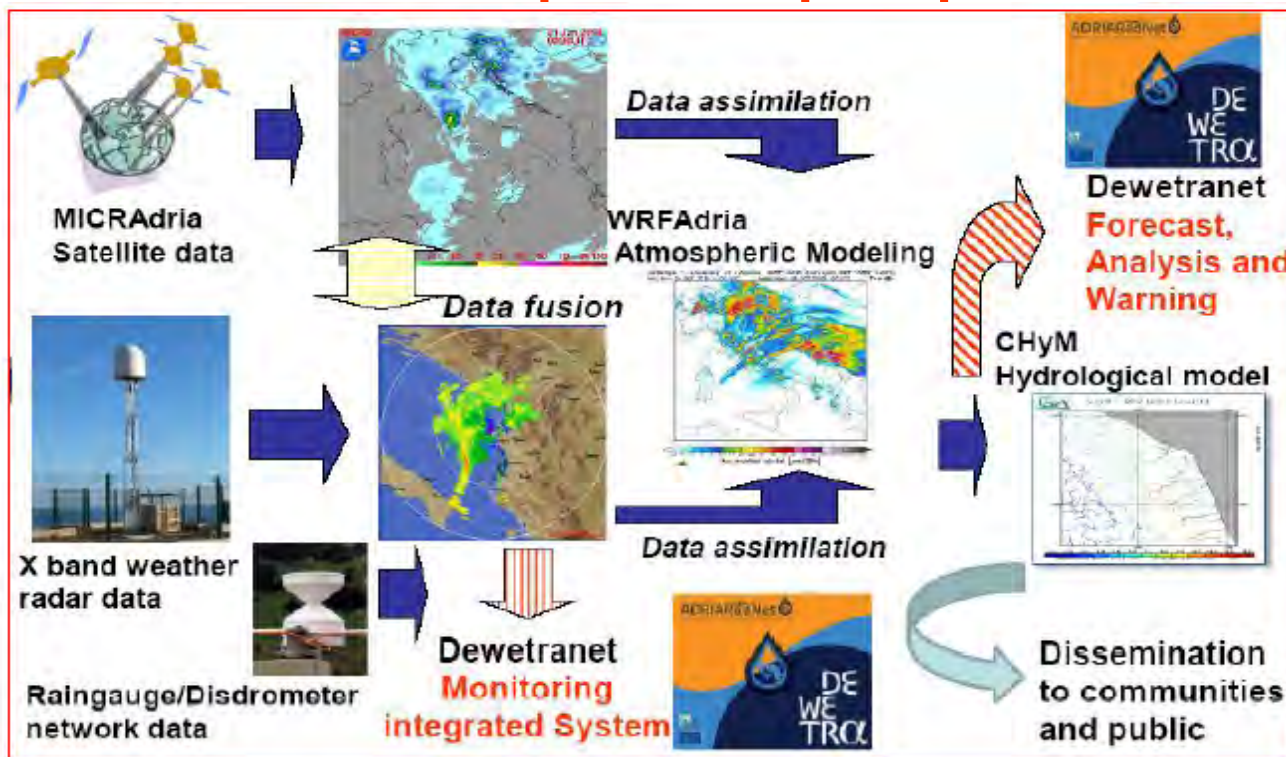
Trieste, 30 gennaio 2019
Slide 5

ADRIARadNet project (2012-15)

The ADRIARadNet project:

- fully accomplished within second call of IPA program, lasted 36 months
- successfully concluded on September 2015

<http://cetemps.aquila.infn.it/adriaradnet/>



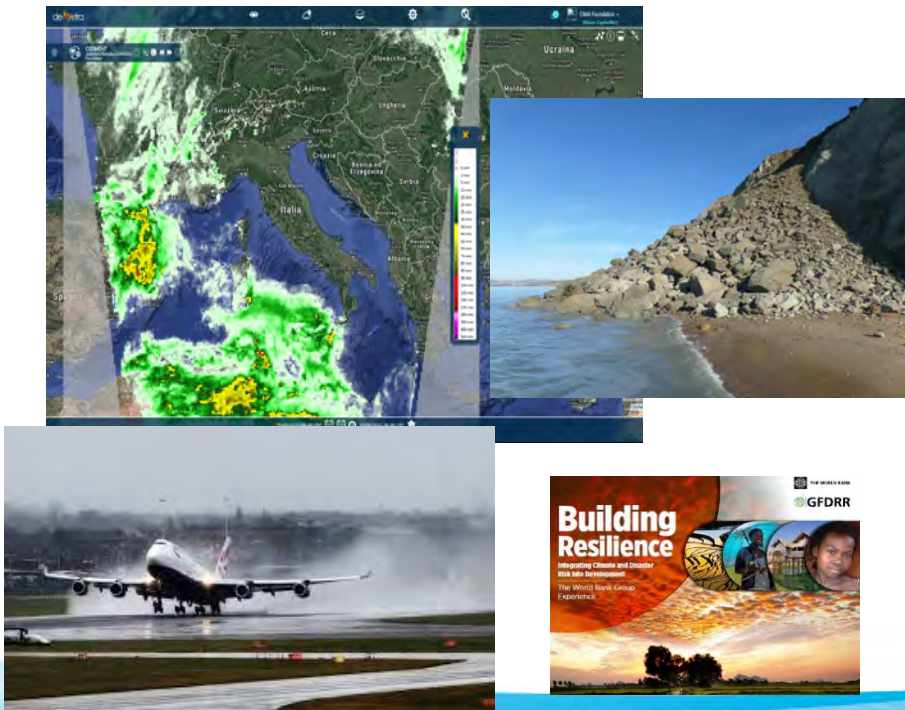
ADRIARadNet has created an innovative **Decision Support System (DSS)** to enhance the response capacity to extreme weather events affecting the safety of people in the Adriatic areas

The CapRadNet Project (2016)

The CapRadNet project:

- fully accomplished within 1° TCE call of IPA program, lasted 9 months
- successfully concluded on December 2016

<http://cetemps.aquila.infn.it/capradnet/>

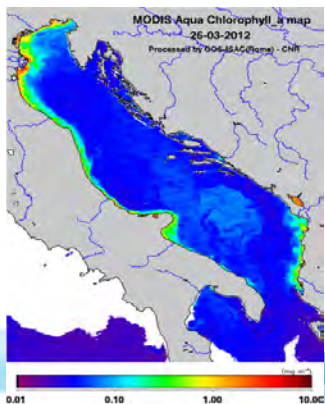


CapRadNet has covered some issues in maritime, coastal, airport and metropolitan environments (whose common denominator is the hydro-meteorological hazard) through:

- (1) five feasibility studies
- (2) a radar installation
- (3) realization of a landslide prediction system
- (4) a pilot action on a building
- (5) an updated webGIS platform

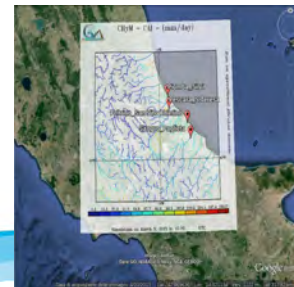
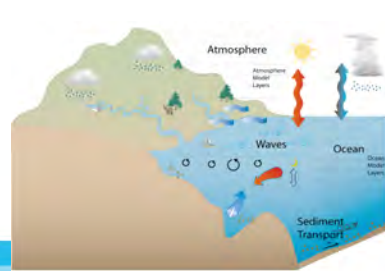
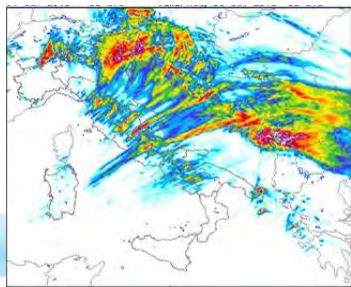
AdriaMORE Specific Objectives (1)

- ✓ **Enhancing the satellite-based monitoring** with data, such as suspended terrigenous material and chlorophyll concentration that may mark desirable/undesirable effects on the coastal environment (WP3, act. 3.1)
- ✓ Improving the **effectiveness of radar measurements** in coastal area by means of the creation of a rain composite utilizing data provided by Italian and Croatian radar network (WP3, act. 3.2)
- ✓ **Procurement of a firefighting boat** which will be used mainly for firefighting actions at the sea and coastal area around Dubrovnik (WP3, act. 3.3)
- ✓ **Installation of a wind profiler** in the Dubrovnik area for continuously updated vertical profiles of wind, very useful in meteorology and aviation (WP3, act. 3.4)








AdriaMORE Specific Objectives (2)

- ✓ Developing of a **meteo-marine modeling chain** coupling high-resolution meteorological and sea-wave models able to ingest local and remote sensing measurements (WP4, act. 4.1 and 4.3)
- ✓ **Strengthening the CHyMAdria hydrological model** for coastal flooding prevention taking into account the barrier effect of the sea in the vicinity of rivers' outlets (WP4, act. 4.2)
- ✓ Setting up of a modelling framework for **Lagrangian and Eulerian simulations** in coastal areas and open sea for the computation of transport and dispersion properties of environmental sensitive tracers (WP4, act. 4.4)
- ✓ **Reinforcing** of the monitoring and forecast system within the existing DSS and **testing** the risk management platform by means two pilot actions around the estuary of the Pescara and Neretva rivers (WP5, act. 5.1 - 5.2 - 5.3 and 5.4)



AdriaMORE Partners & third subject

 <p>REGIONE ABRUZZO</p>	<p>LP</p> <p>Abruzzo Region Dipartimento della presidenza e rapporti con l'Europa (Italy)</p>
	<p>PP1</p> <p>Dubrovnik Neretva County (Croatia)</p>
 <p>DHMZ</p>	<p>PP2</p> <p>Meteorological and hydrological service (Croatia)</p>
 <p>ISAC</p>	<p>PP3</p> <p>Institute of atmospheric sciences and climate (Italy)</p>
 <p>CETEMPS</p>	<p>Centre of Excellence CETEMPS University of L'Aquila (Italy)</p> <p>It holds an Agreement with LP to carry out some activities</p>

AdriaMORE WP and Activity (1)

WP1: Project management and coordination of activities

act 1.1 Start-up activities

act 1.2 Day-to-day project management and coordination

act 1.3 Steering and monitoring of the project implementation

act 1.4 Financial management

WP2: Communication activities

act 2.1 Start-up activities

act 2.2 Public Events Organized

act 2.3 Media relation and publications

WP3: Monitoring network improvement for coastal flooding and extreme weather risk management

act 3.1 Satellite monitoring for coastal impacts of flooding

act 3.2 Radar monitoring network for coastal flooding

act 3.3 Coastal surveillance by firefighting boat

act 3.4 Coastal wind profiler procurement and installation

AdriaMORE WP and Activity (2)

WP4: Forecast numerical modeling for coastal extreme weather and flooding risk management

act 4.1 Implementation of coastal monitoring data assimilation into a high resolution forecasting model

act 4.2 Hydrological model downscaling for coastal flooding forecast and prevention

act 4.3 Coupling of high-resolution meteorological and sea-wave models

act 4.4 Set up of high resolution coastal dispersion model close to river outlet

WP5: Integration and testing of DSS for coastal flood and extreme weather early warning

act 5.1 Integration of coastal remote sensing data into DSS

act 5.2 Integration of coastal forecasting modules into DSS

act 5.3 Pilot action around the Pescara river estuary coastline area

act 5.4 Pilot action around Neretva river estuary coastline area

Outputs & Deliverables of the WPs

- A **deliverable** is a tangible or intangible object produced as a side-product of the project that contributes to the achievement of a project output. More than one deliverables can be necessary to produce one output; deliverables shall be included in the Application Form under each activity foreseen by the project;
 - A main **output** is what has actually been produced as a result of the funding given to the project. It shall be captured by an output indicator and directly contributes to the achievement of project result(s) and project specific objectives.
- e) submitting with the respective progress report the main outputs and deliverables as stated in the AF and following the procedures set in Factsheet n. 6 "Project Implementation". One sample of each developed material or any proof of output realization shall be stored at the LP's or PP's premises for control and audit purposes:

Next deliverables and output must be submitted within March 2019 (2° progress report)

WP5 actions 5.3&5.4: description of the work

5.3 PILOT ACTION AROUND THE PESCARA RIVER ESTUARY COASTLINE AREA

5.4 PILOT ACTION AROUND NERETVA RIVER ESTUARY COASTLINE AREA

Actions 5.3 and 5.4 will be devoted at the **testing the AdriaMORE new tools** by means two pilot actions:

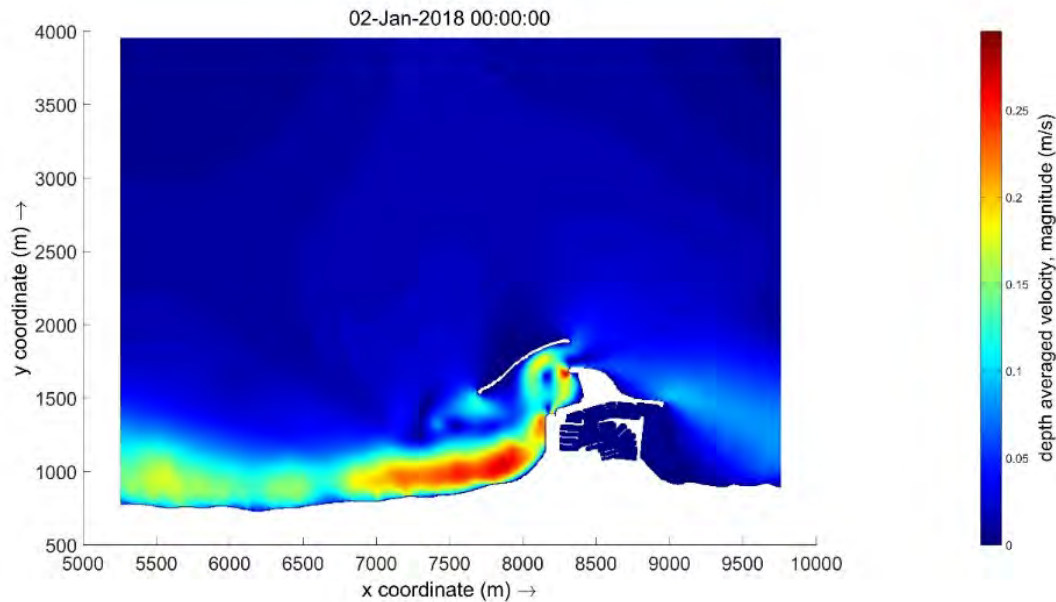
1. around the **estuary of the Pescara river** in Abruzzo Region, called PAI (Pilot Action along Italian coastlines)
2. around the **estuary of the Neretva river** in Neretva-Dubrovnik region, called PAC (Pilot Action along Croatian coastlines)



Geomorphological modelling from river mouth sediments dynamics

Understanding coastal impacts due to infrastructures at river
mouth (the Pescara River breakwater).

Sediment transport modelling based on the Delft3D model



Depth-averaged velocity, induced by the interaction
between river discharge and the coastal infrastructure

Preliminary geomorphologic results






Sedimentary structures along
the northern coast

Thanks for your attention



AdriaMORE is a project co-funded by the European Union through Interreg Italy-Croatia CBC Programme. More info at <http://www.italy-croatia.eu>

-  Address: Camillo Marracino
-  Email: camillomarracino.adriamore@gmail.com
-  Telephone number: +39 0862364211
-  <http://www.italy-croatia.eu/>