Festival dell'acqua 2022 — un evento promosso e organizzato da UTILITALIA FEDERAZIONE UTILITIES acqua | ambiente | energia — in collaborazione con smat gruppo

Organizzazione e strumenti per gestire l'emergenza
Il Progetto europeo MUHA (Multihazard framework for water related risks management)

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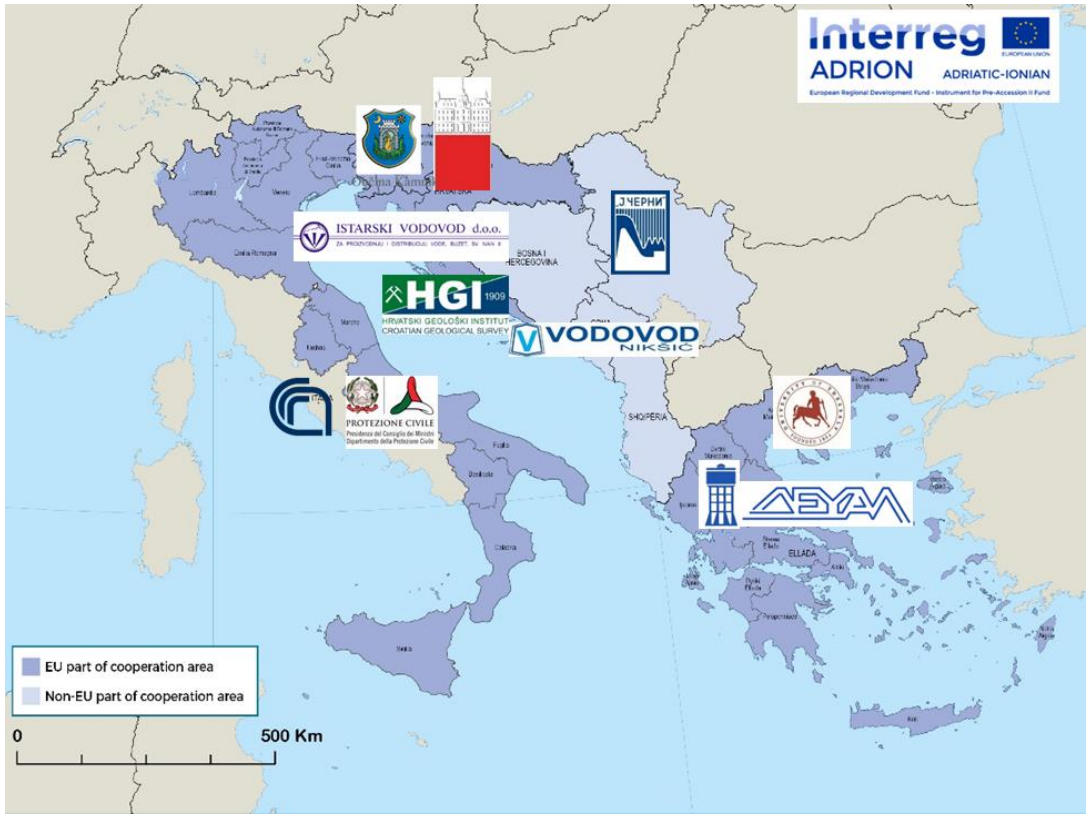
- PRIORITY AXIS 2 → Sustainable region. Conserving, protecting, promoting and developing natural and cultural heritage; Protecting and restoring biodiversity and soil and promoting ecosystem services, including through Natura 2000, and green infrastructure.
  - Specific Objective 2.2 → Enhance the capacity in transnationally tackling environmental vulnerability, fragmentation, and the safeguarding of ecosystem services in the Adriatic-Ionian area
    - Topic 3 → Manage and prevent natural and manmade hazards



Develop and integrate existing of transnational systems, **procedures and early warning systems for forecasting, managing and preventing natural and manmade hazards** (forest fires, sea and river floods, industrial accidents, droughts, storms, algal blooms, earthquakes erosion etc.) especially in **coordination with the EU Civil Protection Mechanism** and related IPA initiatives on civil protection, floods, management, risk management etc.

- Lead Partner: CNR
- 10 Partner di progetto
  - 5 enti di ricerca (CNR, UL, JWCI, HGI-CGS, UTH)
  - 1 istituzione nazionale (DPC)
  - 1 istituzione locale(KAMNIK)
  - 3 gestori del servizio idrico (IVB, NIKSIC, DEYAL)
- 13 Associated Partners
- Budget totale: € 2 396 858.00

Interreg ADRION ADRIATIC-IONIAN
European Regional Development Fund - Instrument for Pre-Accession II Fund
EUROPEAN UNION
MUHA

MUHA project – MultiHazard Framework for Water Related risk management - rationale

Revised EU Drinking Water Directive (EU 2020/2184). … it is appropriate to introduce a complete risk-based approach to water safety, covering the whole supply chain from the catchment area, abstraction, treatment, storage and distribution to the point of compliance…. That risk-based approach should consist of three components. First, identification of the hazards associated with the catchment areas for abstraction points ('risk assessment and risk management of the catchment areas for abstraction points of water intended for human consumption'), in line with the WHO Guidelines and Water Safety Plan Manual. Second, a possibility for the water supplier to adapt monitoring to the main risks and to take the necessary measures to manage the risks identified in the supply chain … Third, an assessment of the potential risks stemming from domestic distribution systems… the so-called 'Water Safety Plan' approach, including for small communities, together with standard EN 15975-2 concerning security of drinking water supply, are internationally recognized principles on which the production and distribution of water intended for human consumption, and the monitoring and the analysis of parameters in such water, are based

GESTORI

Rilevanza crescente dei Piani di Sicurezza dell'Acqua

- WHO, 2005
- ISTISAN, 2014
- EU 2020/2184
- Nell'area ADRION la maggior parte dei gestori non ha ancora sviluppato Piani di Sicurezza dell'Acqua

PROTEZIONE CIVILE

- Meccanismi di protezione civile nazionali e sovranazionali

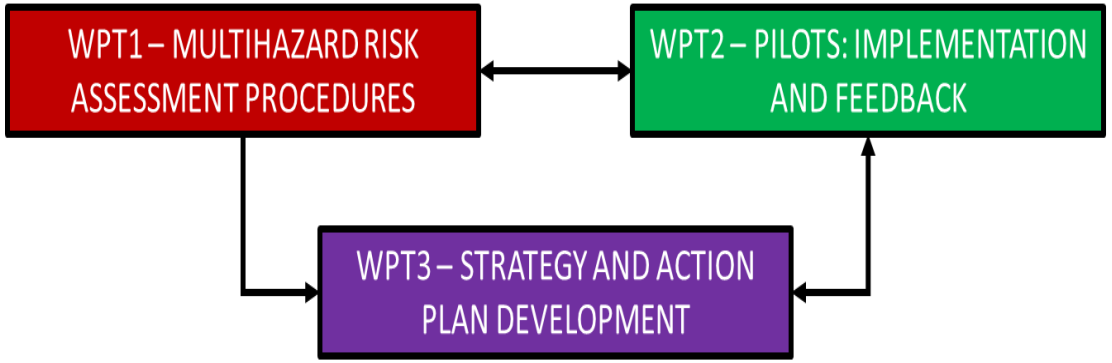
- WHO (2005). Guideline for risk assessment and management within the drinking water chain according to Water Safety Plans
- ISTISAN (2014). Linee guida per la valutazione e gestione del rischio nella filiera delle acque destinate al consumo umano secondo il modello dei Water Safety Plans.
- Dir. 2015/1787/EU; DM 14.06.2017
- Dir. 2020/2184/EU

Il progetto MUHA – Concept e struttura

Premesse: 1) un'analisi di rischio di sistemi di approvvigionamento idrico richiede un **approccio multirischio** che prenda in considerazione tutte le component del Sistema e la possibile **sovrapposizione di diversi hazards**; 2) nell'analisi di rischio è necessario il **coinvolgimento di tutti gli stakeholders e istituzioni** che a diverso titolo concorrono alla gestione delle risorse idriche

OBIETTIVO DEL PROGETTO MUHA → mettere in relazione in maniera efficace i diversi processi legati al ciclo dell'acqua in un sistema che integri le **funzioni di analisi, previsione e incident command system**. L'interconnessione, nel rispetto dei rispettivi ruoli, tra gestori e dei meccanismi di protezione civile è in questo contesto cruciale.

WATER SUPPLY SYSTEM						
		F	D	AP	E	
Meccanismi di protezione civile	Monitoraggio					Gestori (attraverso i piani di sicurezza dell'acqua)
	Predizione e prevenzione del rischio					
	Emergency measures					
Considered hazards: Alluvioni (A), Siccità (S), Contaminazione Accidentale (C), Terremoti (T)						



WPT1 – MULTIHAZARD RISK ASSESSMENT PROCEDURES

Dettagliata indagine nell'area
implementazione dei PSA.

Necessità di caratterizzare in p
approvvigionamento idrico in
uno schema condiviso in grad
componenti del sistema

Piattaforma informatica WASSI
Procedures Decision Support S
all'indirizzo http://muha.apps.

Il network UNAS network: netv
WASSP-DSS users. Accessibile a
http://muha-unas.apps.vok

Hazard - 4.1 Shortage of water

Hazard category: Failure of raw water source

HAZARDOUS EVENT OR TRIGGER:

Drought (changed patterns in precipitation due to climate change), blockage of water upstream or abstraction
Hazardous event category (NACE): Natural

ACCIDENT TYPE:

Accidental and permanent

external related | consequence of hazard in other sub-system

insufficient availability of water supplied to customers

Consequences

Water quantity - Insufficient raw water

Measures

No measures are defined for this hazard.

PROBABILITY OF OCCURENCE

- WEEKLY (5)
- MONTHLY (4)
- ANNUALLY (3)
- EVERY 10 YEARS (2)
- EVERY 30 YEARS OR MORE (1)
- HAZARD NOT PRESENT (0)
- HAZARD IS PRESENT BUT PROBABILITY CAN'T BE ASSESSED (3)

SEVERITY OF CONSEQUENCES

- MINIMAL EFFECTS (1)
- MINOR EFFECTS (2)
- MODERATE EFFECTS (3)
- MAJOR EFFECTS (4)
- SEVERE EFFECTS (5)

Severity should be chosen based on WSS operator experience.

RISK IF NO CONTROLS IN PLACE (INITIAL RISK)

Likelihood	2
Severity of consequences	5
Score	10
Risk	Medium

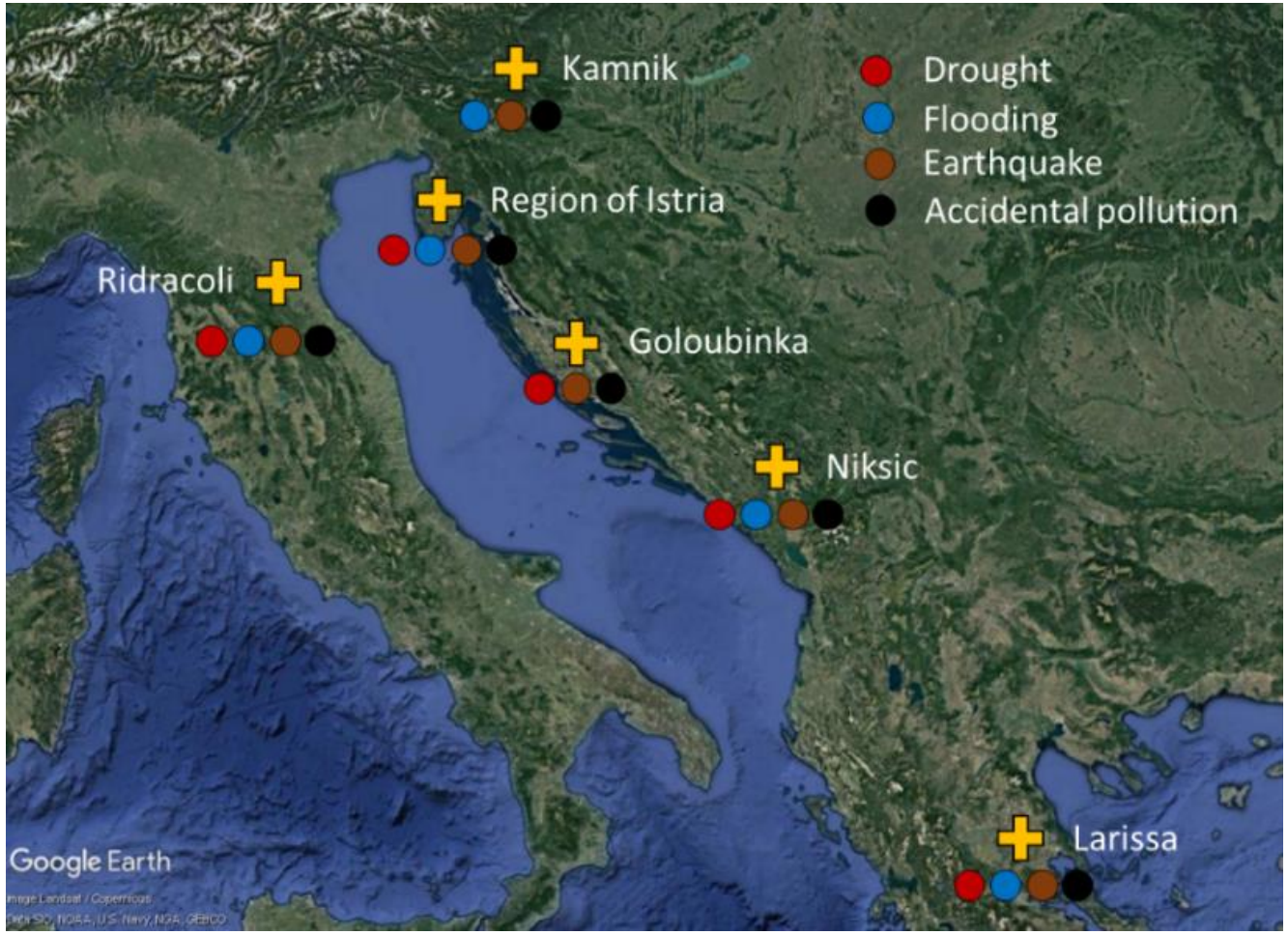
risk legend: no risk, very low risk, low risk, medium risk, high risk, very high risk

COMMENTS

I HAVE FINISHED WITH EVALUATION OF THIS HAZARDOUS EVENT.

Please indicate when you are done evaluating this hazardous event.

WPT2 – PILOTS: IMPLEMENTATION AND FEEDBACK



- **Fase di testing** del tool WASSP-DSS MUHA tool →
  - ✓ Per verificare la completezza del "catalogo degli eventi di rischio"
  - ✓ Primo screening per effettuare un ranking del rischio
  - ✓ Multihazard analysis (per componente, per hazard)

- **Table top exercises** effettuati in ogni pilot →
  - ✓ Per individuare gli elementi di debolezza nei sistemi di monitoraggio ed analisi e per proporre contromisure

- Sviluppo e testing di **specifici tools di supporto**

IL SISTEMA DI SUPPORTO ALLE DECISIONI INOPIA[QGIS]

INOPIA[QGIS] is a flexible and parsimonious user-friendly approach supporting Water Supply Systems (WSS) monthly mass balance c

multiple allocation options.

The user can easily build, within a QG

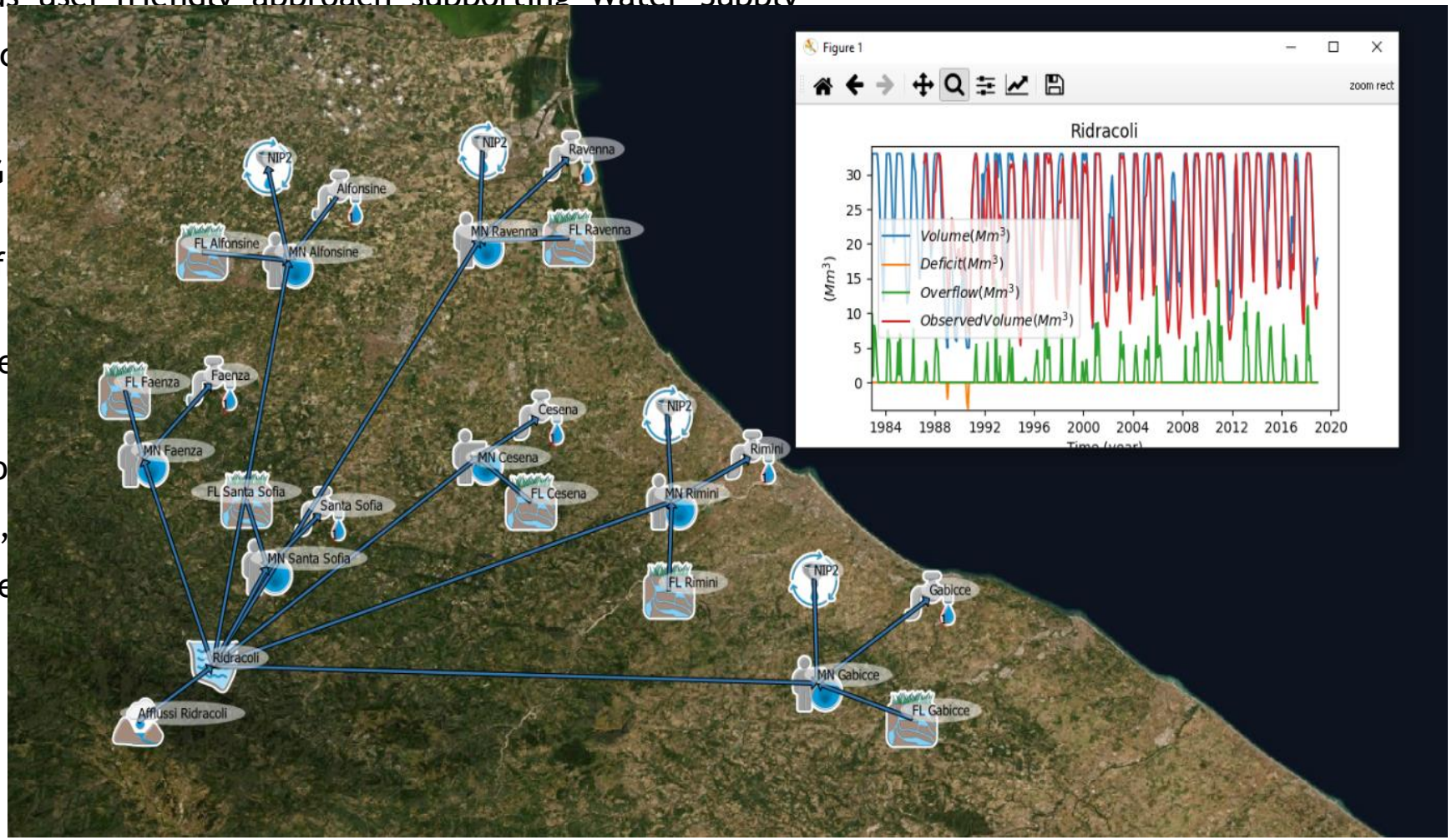
resources among surface inflow f

wells and Alternative Water Source

more macro-*USER* that can be prio

macro-user to more than one resources,

options. Each element is fed by simple e



IL SISTEMA DI SUPPORTO ALLE DECISIONI INOPIA^{QGIS} – TEST SITES (lavori in corso…)

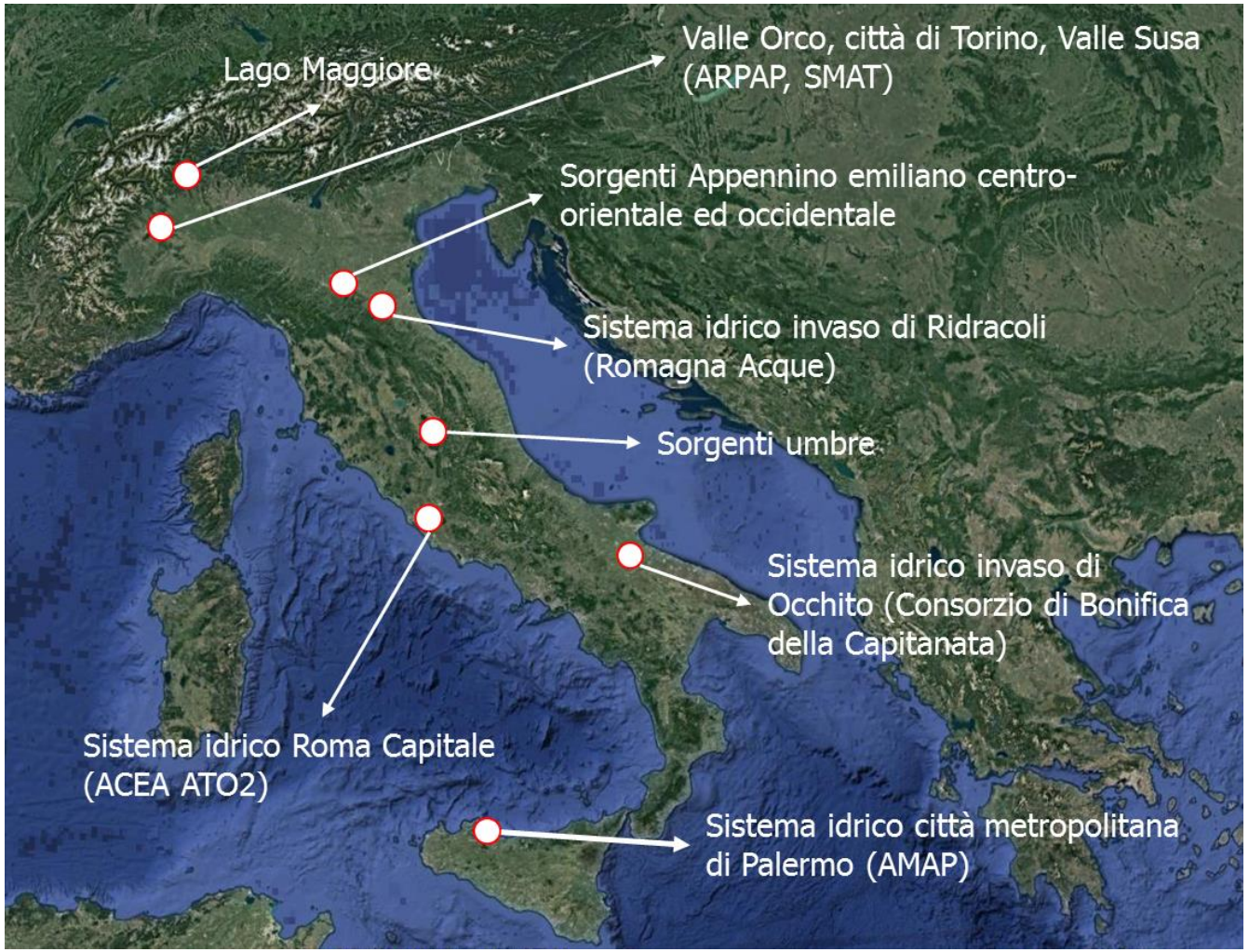
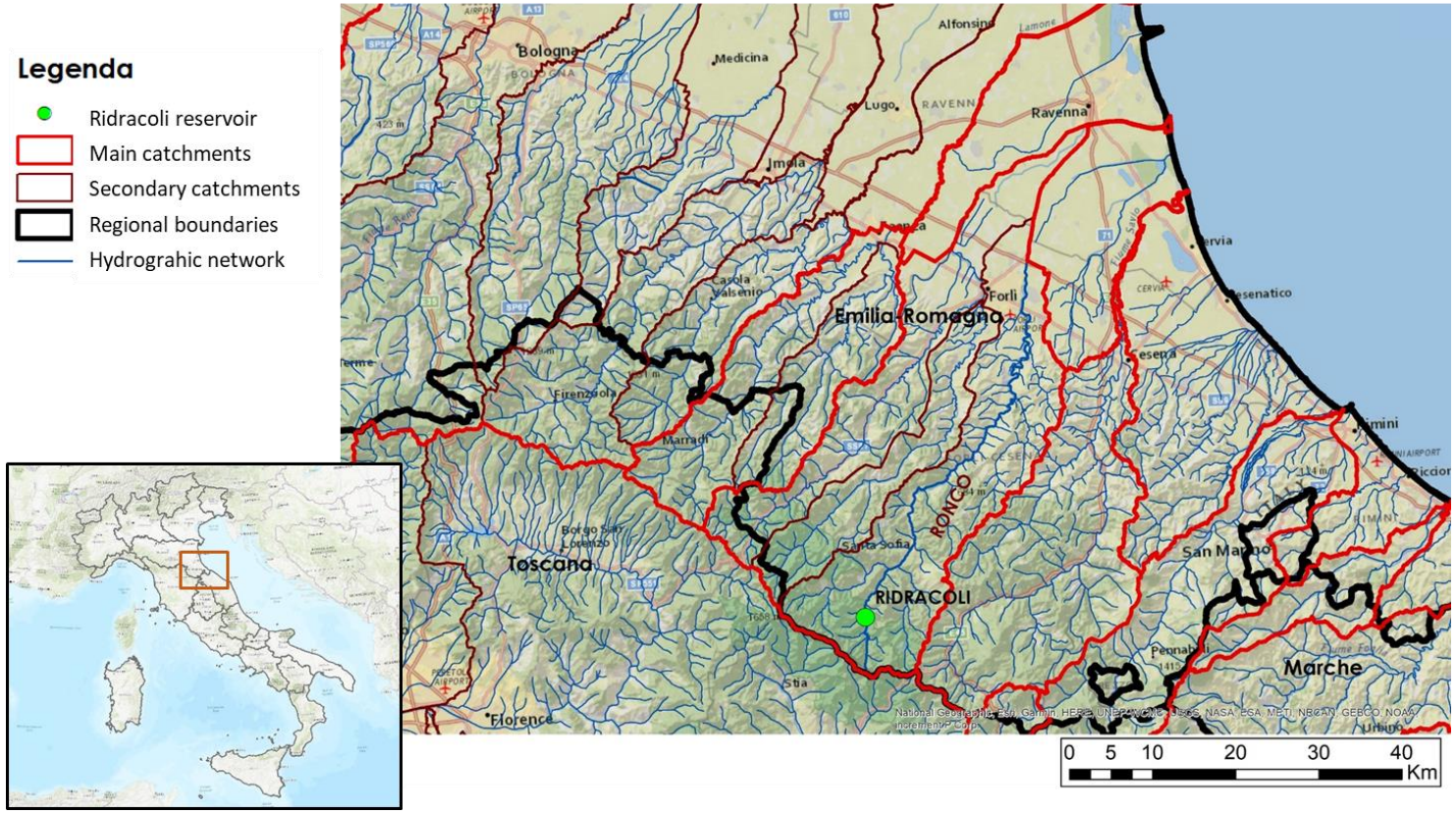


Table top exercise – Sistema di approvvigionamento idrico connesso con l'invaso di Ridracoli

Ridracoli



OBIETTIVO → gestione di uno scenario di **siccità prolungata** che impatta il Sistema di approvvigionamento idrico connesso con **l'invaso di Ridracoli** (Emilia-Romagna)

- Per testare i **processi decisionali** per I diversi livelli di competenza, inclusi i **piani di protezione civile**
- I TTX si sono rivelati un ottimo strumento per una migliore **definizione dei piani operativi**, anche attraverso **l'interazione diretta tra I diversi soggetti** coinvolti

Table top exercise – Sistema di approvvigionamento idrico connesso con l'invaso di Ridracoli

Acronym	Full name	Main role	Level of interaction - preparedness	Task (preparedness)	Level of interaction in emergency	Task (emergency)
ISS	National Institute of Health	Research, control and technical scientific advice on public health. Provides guidelines for WSP	✓ ✓	Information on risks / risk matrix preparation Guidelines and training		
ARPA	Regional Agency for the Protection of the Environment	Environmental monitoring and assessment (e.g. water quality and hazards)	✓ ✓ ✓	Information on environmental hazards Information on water quality	✓	Information on environmental hazards Information on water quality
SNPA - ISPRA	National System of Environmental Protection - National Institute for Environmental Protection and Research	Multiple roles, including hydrological analysis and water pollution.	✓	Information on water quality		
CP	Civil Protection System	Civil Protection System encompassing all levels, from the National to the municipal one	✓ ✓	Definition of protocols and procedures Identification of mitigation measures	✓ ✓ ✓	Implementation of protocols Activation of alternative water sources EM measures
ISTAT	National Institute for Statistic	Collects, analyses and structures historical data (e.g. environmental pressures)	✓	Environmental data and statistics		
AdB	Hydrographic District basin Authority	Management of water, soil and the environment at river basin level	✓ ✓	Information of water quantity and availability	✓ ✓	Info on alternative water sources
ASL	Local health Agency	Local responsibility and management for public health	✓ ✓	Hazard characterization (quality)	✓	Monitoring effectiveness of measures
ATO - BC	Optimal Territorial Units and Basin Council	Coordination of public services, such as water supply, at (sub)regional level	✓	Approval of measures/interventions		
REG	Regional Administration	Multiple roles, including e.g. civil protection activities	✓ ✓	Hazard characterization Record of events	✓ ✓	Info on alternative water sources Implementation of mitigation measures
PROV	Province	Coordination among municipalities at sub-regional level. They may also support hazard analysis and intervention selection	✓ ✓	Preparation of civil protection plan (operation continuity)		

Involved actors
15 actors!!!

MUN	Municipality	The major is the local civil protection authority	✓ ✓	Preparation of civil protection plan (operation continuity)	✓ ✓ ✓	
ARERA	National regulating agency far energy, networks and the environment	Regulatory and supervisory activities in the sectors of electricity, natural gas, water services, waste cycle and district heating	✓	Service regulation (e.g. tariff)		
OTHER WUs			✓ ✓	Identification of mitigation measures Best practices Information on WSS Coordination on WSP	✓ ✓	Activation of alternative water sources Implementation of mitigation measures Mutual support
RES	Research bodies and institutions		✓ ✓	Identification of mitigation measures Best practices Information on water quantity/quality		
USERS	Users	Require/use water and might provide a feedback on water quality/level of service	✓	Information on service levels	✓	Information on service levels

WPT3 – STRATEGY AND ACTION PLAN DEVELOPMENT

TOPIC	BOTTLENECK	SUGGESTIONS
Identification of institutional actors and stakeholders	➢ Sovrapposizione e **attribuzione non chiara dei diversi ruoli** e responsabilità. ➢ **Usi conflittuali** della risorsa	➢ Istituzione e/o potenziamento di **Osservatori Permanenti per gli Utilizzi Idrici**. ➢ Organizzazione di **Table Top Exercise**
Emergency Planning Process,	➢ Mancanza, specie nelle water utilities di piccole dimensioni, di personale competente per attività di carattere modellistico a support dell'analisi di rischio	➢ Istituzione di **"team modellistici"** condivisi tra diversi gestori a support dello sviluppo dei Piani di Sicurezza dell'Acqua
Water System Information,	➢ I diversi attori a diverso titolo coinvolti nella gestione delle risorse, sia nella fase ordinaria che emergenziale, spesso producono **"pezzi" di informazione**, non sempre facilmente disponibili	➢ Favorire il **coordinamento e l'interoperabilità dei differenti database** quali-quantitativi esistenti ➢ I relazione agli aspetti quantitativi tali database dovrebbero includere: • Dataset condivisi rappresentativi del regime climatico passato e future; i dati dovrebbero essere rappresentati mediante indici comuni; • Dataset condivisi rappresentativi dei diversi fabbisogni idrici • **Indici comuni** rappresentativi dello stato attuale e future della disponibilità di risorse idriche • **Strumenti condivisi** to per la valutazione dell'impatto degli eventi climatici estremi (sia positivi che negative) sui sistemi di approvvigionamento idrico

Main outcomes of the MUHA project (December 2022)

OT2.5 Action plan for the development of table-top exercises for improved WSS reliability

OT3.1 REWAS – ADRION strategy towards resilient water supply

OT3.2 Institutional action plans for resilient water supply

GRAZIE DELL' ATTENZIONE

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https://muha.adrioninterreg.eu/

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