Webinar on the “Remembrances of Dr. Mannava V.K. Sivakumar, Former Advisor of International Society for Agricultural Meteorology”

Regional initiatives to enhance agrometeorological avtivities and service within WMO

Dr Elena Mateescu – Director General of Romanian National Meteorological Administration
President RA VI with WMO

3 May 2025

WORLD METEOROLOGICAL ORGANIZATION

Early Warnings for All

Outline

1. WMO regions – brief introduction
2. WMO - RAVI
3. International, regional and national initiatives on EWS
3.1. Early Warning for ALL (EW4All) – overview
3.2. Southeast European Multi-hazard Warning Advisory System
3.3. European Agricultural Meteorological Centre

Short introduction

WMO regions

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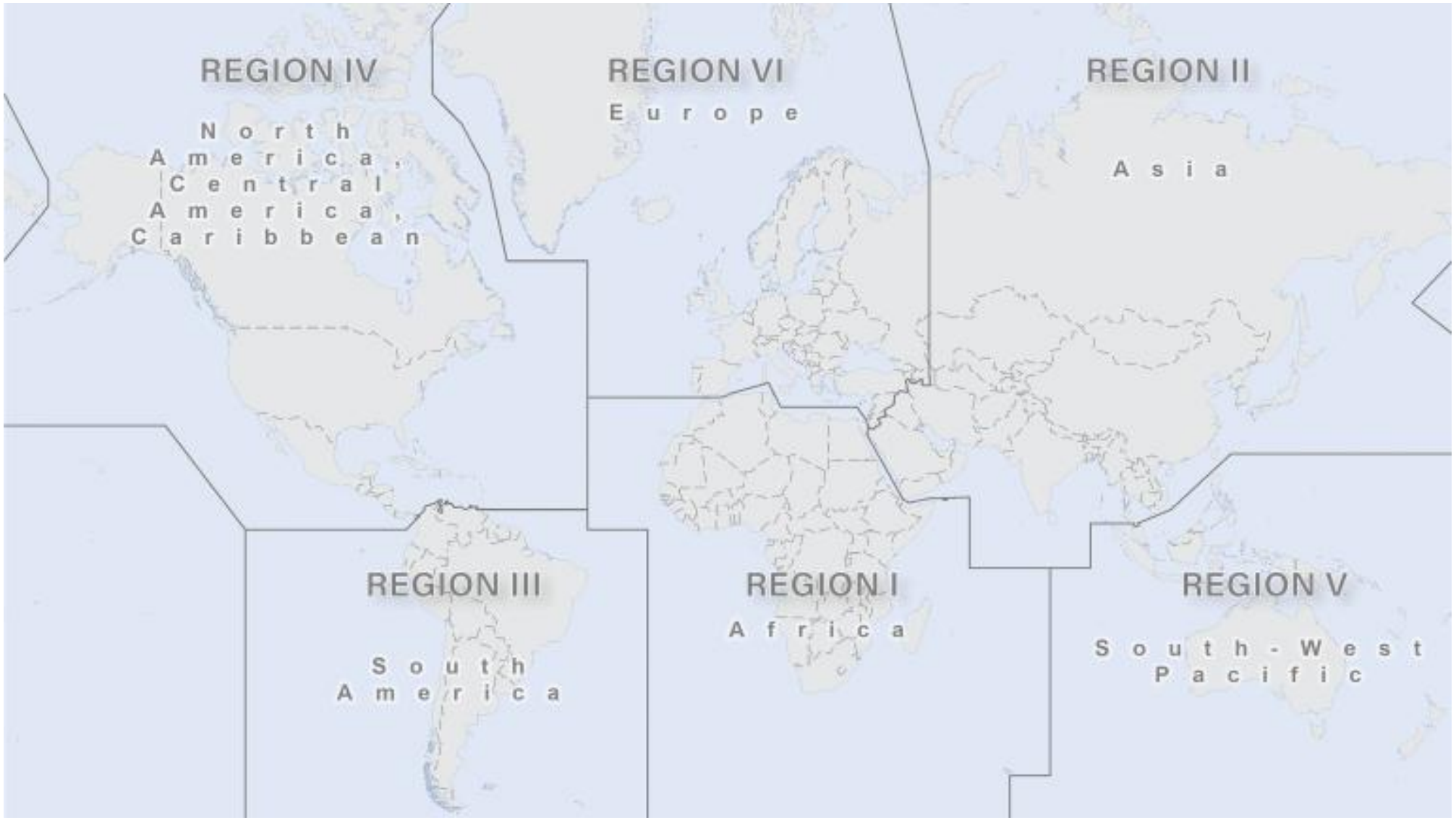

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WMO RA VI / EUROPE

50 Member states

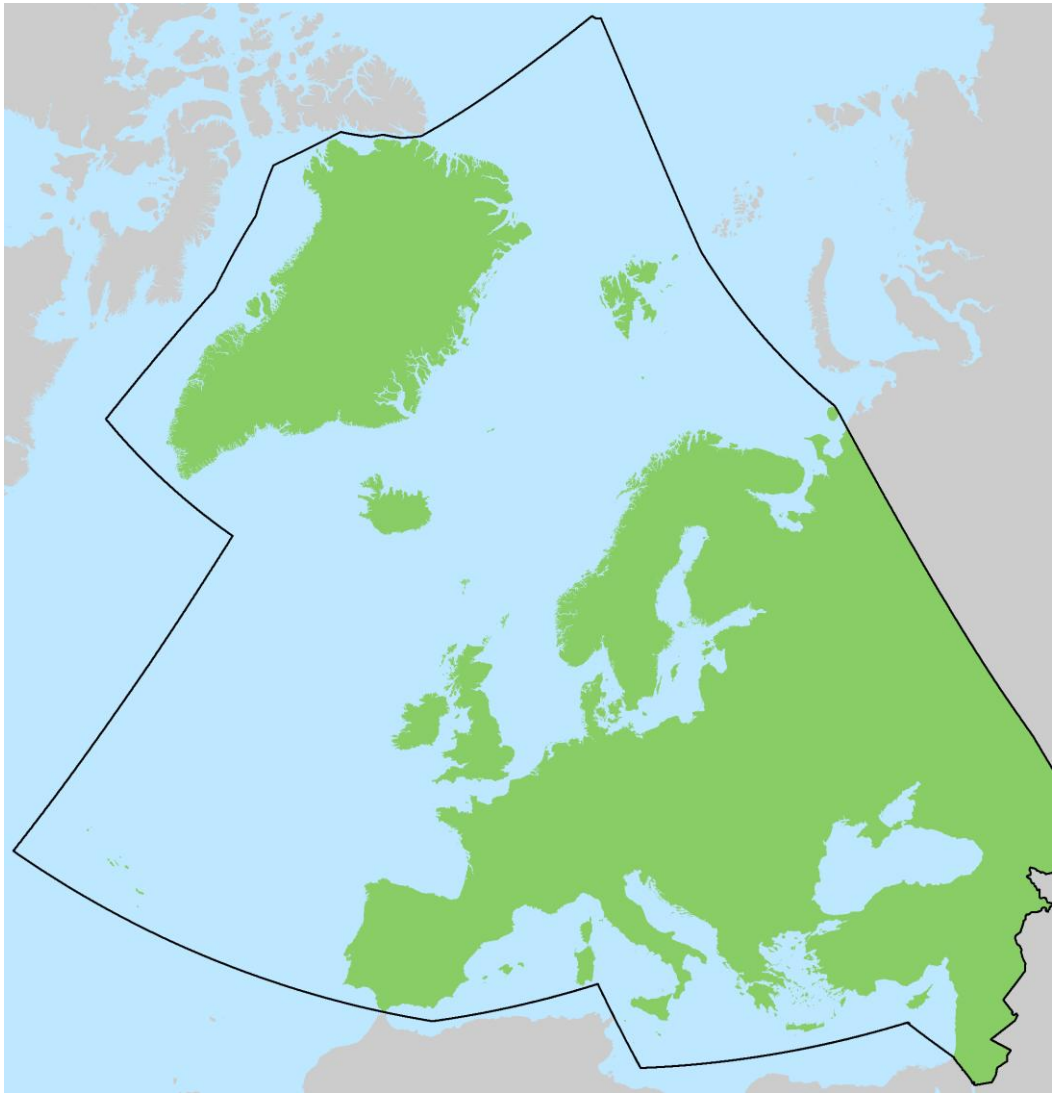
Broad geographic scope → diverse meteorological and climatic conditions

19 middle-income, 1 low-income countries

→ distinct needs and priorities

→ **huge capacity gaps in the eastern part**

Active cooperation with members of European Meteorological Infrastructure (ECMWF, EUMETSAT, EUMETNET)



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Overview

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3.3 to 3.6 billion

people live in contexts that are highly vulnerable to climate change

Climate change is accelerating
→ the world needs a unified approach to disaster mitigation

Early Warnings for All

- Disasters are set to **increase by 40%** before 2030
- **Extreme weather events** are becoming **more frequent and intense**, and extreme temperature events will triple
- Countless **lives and livelihoods are at risk**
- **Disaster costs are rising**, costing billions of dollars in economic losses
- International **collaboration is essential** in the face of such a global and complex danger

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Only
half of the world's countries
report having
sufficient capacity
to alert their citizens about
impending hazardous weather
conditions

Early Warnings For All initiative

Early Warnings for All

- Proven, efficient, and cost-effective way **to save lives, livelihoods, and to protect progress on sustainable development**
- **People-centered, end-to-end, multi-hazard early warning** systems, that can help minimize harm to people and damage to assets by triggering **well-prepared and tested early action**
- Enable individuals, governments, and communities to **reduce the risks of disaster ahead of hazardous climate events**
- EWS insights help with the formulation of **national policies and regulations**

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Early Warnings for All (EW4All)

Early Warnings for All

- UN Secretary-General António Guterres launched in 2022
- Global initiative of **people-centered Early Warning Systems** → helps countries adapt to climate change and build resilience
- Will **save lives, reduce economic losses**, and enhance **risk reduction** efforts
- Contributes directly to the UN's **Sustainable Development Goals** (SDGs)

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Early Warnings for All

CREWS CLIMATE RISK & EARLY WARNING SYSTEMS

SOFF
Systematic Observations Financing Facility

ADAPTATION FUND

USAID
UNITED STATES AGENCY INTERNATIONAL DEVELOPMENT

GREEN CLIMATE FUND

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EW4All vs. the EU's Disaster Resilience Goals

1. ANTICIPATE	2.PREPARE	3. ALERT	4. RESPOND	5. SECURE
To improve **risk knowledge**, risk assessment, anticipation, and disaster risk management planning.	To increase **risk awareness** and preparedness of the population **(risk communication)**	To **enhance early warning**	To enhance the Union Civil Protection Mechanism **response** capacity	To ensure a **robust civil protection system**
EW4All: **Pillar 1** **Led by UNDRR**	**EW4All:** **Pillar 3** **Led by ITU**	**EW4All:** **Pillar 2** **Led by WMO**	**EW4All:** **Pillar 4** **Led by IFRC**	**EW4All:** **All Pillars** **UNDRR, WMO, ITU, IFRC**

EW4All Roadmap for WMO RAVI (Europe)

- **EW4All Roadmap for WMO Regional Association VI (Europe) aims to establish efficient early warning systems by 2027.**
- **It includes a strategic guide with a high-level action plan, referring to operationalization, education and training, infrastructure development, research and innovation to develop an early warning systems at regional/national levels. It covers assessment, planning, and resource allocation with a focus on collaboration across Member states and agencies.**
- **The Roadmap stresses the importance of monitoring, evaluation, risks, sustainability, and continuous improvement, with a call to action for collective efforts towards resilience and disaster risk reduction.**
- **The scope of the WMO RA VI Roadmap and its accompanying Action Plan should cover all facets of the EW4ALL initiative. As the World Meteorological Organization's (WMO) has the role of principal United Nations agency overseeing Pillar 2, which referrs to detection, observations, monitoring, analysis and forecasting of hazards, the primary focus of the Roadmap is concerns this particular pillar.**

Priority hazards in WMO RAVI

In the context of the EW4All initiative, prioritization of hazards in RA VI (Europe) is crucial due to the increasing severity of extreme weather events driven by climate change.

The priority hazards for WMO Regional Association VI (RA VI), which require attention for the enhancement of Early Warning Systems (EWS) as part of the EW4ALL initiative, include:

- **floods (combined)**
- **extra-tropical storms (including severe storms, strong winds, and thunderstorms)**
- **heatwaves and cold waves,** and
- **drought**

These hazards were identified based on EM-DAT statistics, the KRONER database maintained by the WMO RA VI RCC Node on Climate Monitoring, recommendations from the RA VI Hydrology Advisers Forum, and the EUMETNET Survey on Hazard Types and Common Alert Protocol (CAP) parameters. Additionally, EUMETNET members have suggested including up to 11 new hazards in the MeteoAlarm CAP profile, with drought, air quality, hail, landslide, and slippery road conditions as the top five new hazards to be added.

RAVI regional priorities to 2027

Unified Data Policy: Enhancing data availability and cross-border exchange to support regional cooperation and informed decision-making.

Improvement of Services: Advancing weather, water, climate, and environmental services to ensure they are reliable, accessible, and responsive to regional needs.

Research and Development: Driving innovation to support better adaptation and mitigation strategies in the face of climate change.

Capacity Development and Technology: Leveraging artificial intelligence and new technologies to advance weather, water, and climate services, improving their accuracy and effectiveness.

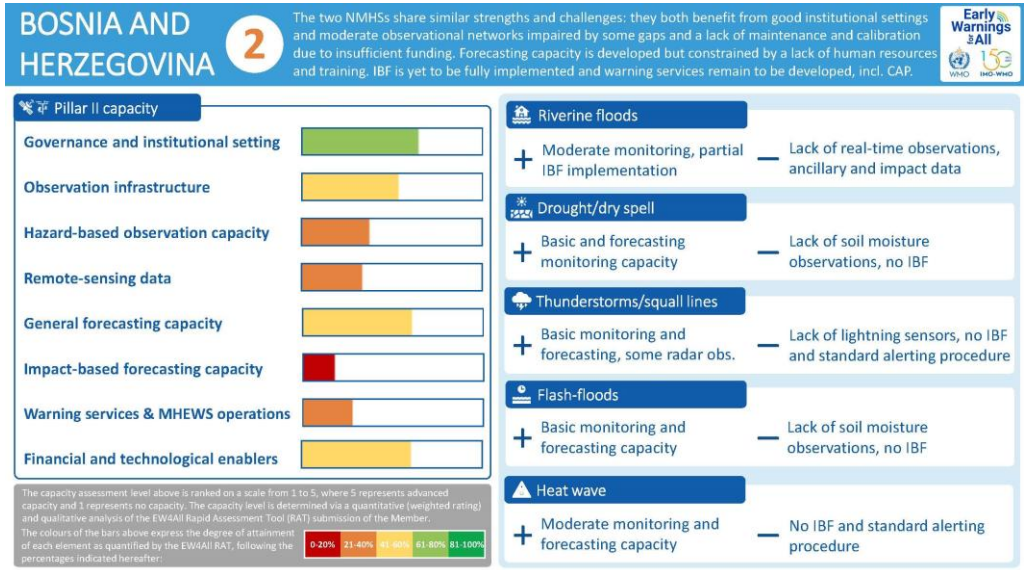
HydroSOS Implementation: Enhancing water resource management and resilience through the Hydrological Status and Outlook System (HydroSOS), focusing on sustainable water management.

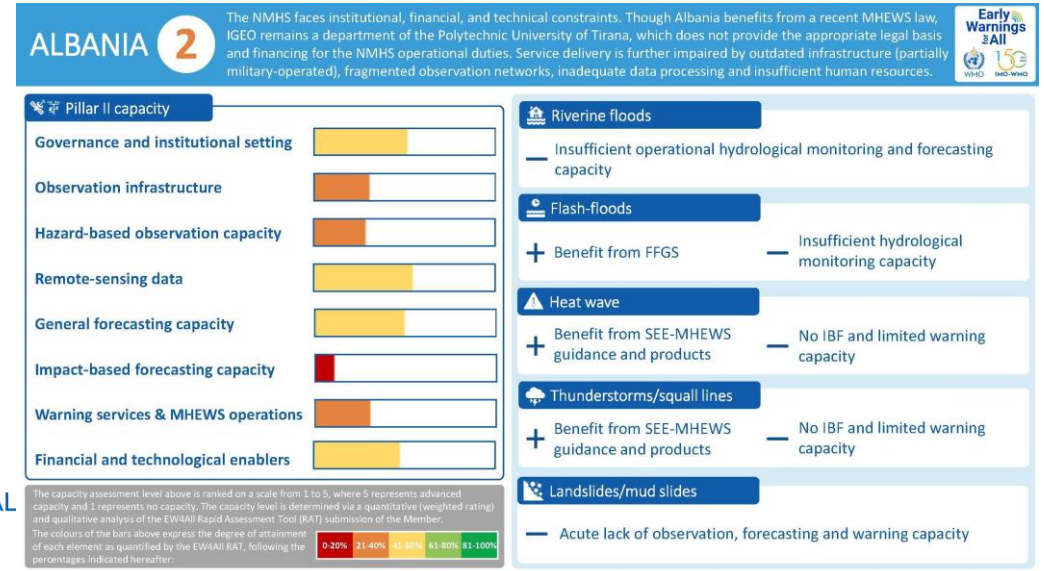
EW4All Rapid Assessment

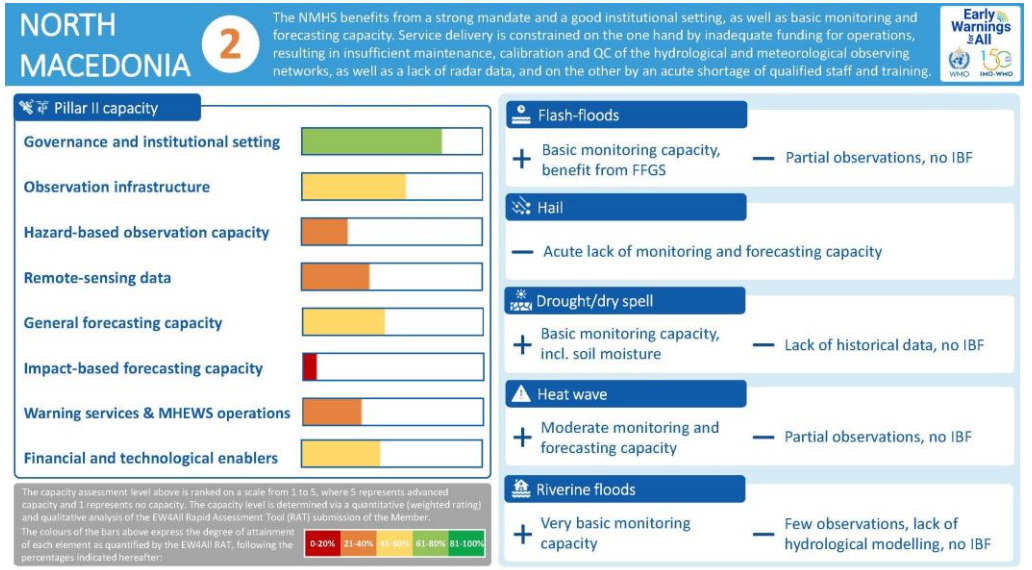
Many countries in Europe (among them **EU candidates**) **don't have adequate Multi-hazard Early Warning System**

Challenges:

- Big gaps in the observing, data processing and forecasting systems
- Lack of formal links between the stakeholders in the dissemination chain
- Missing regulatory frameworks that connect early warnings to emergency plans







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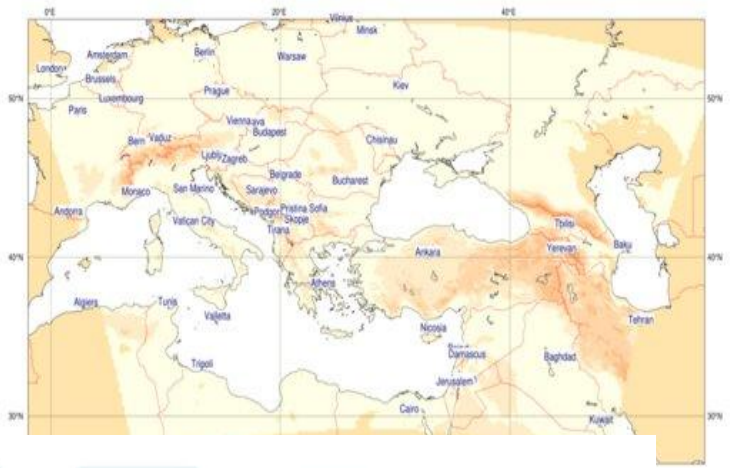
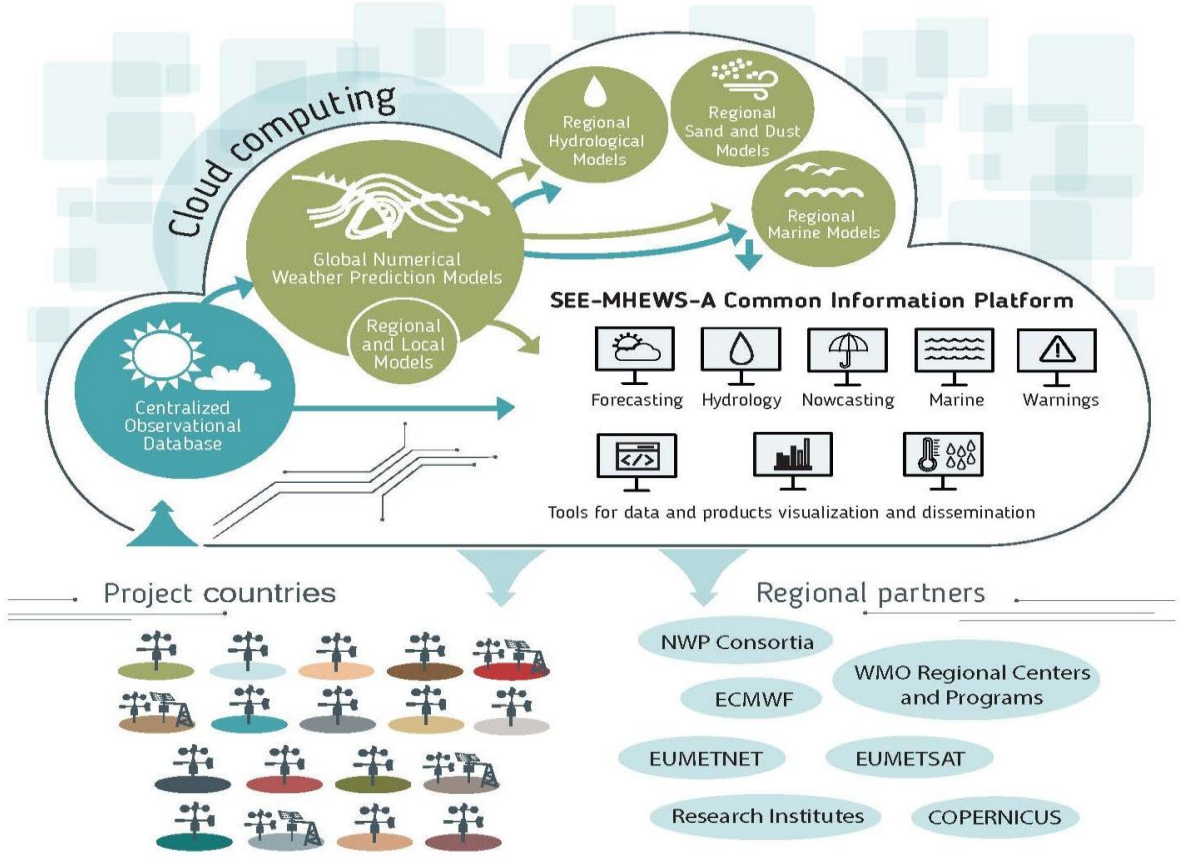
Southeast European Multi-hazard Early Warning Advisory System



In the frame of the project **18 NMHSs agreed to**:

- Improve collaboration in hazard identification
- **Jointly create a Multi-hazard Early Warning System** (MHEWS)
- Implement state of the art prediction technology for hydrometeorological hazards
- **Collaborate on the operational data exchange**
- Collaborate with the private and academic sectors – exchange of know-how and data
- Sustain in continuous development and maintenance of the common system



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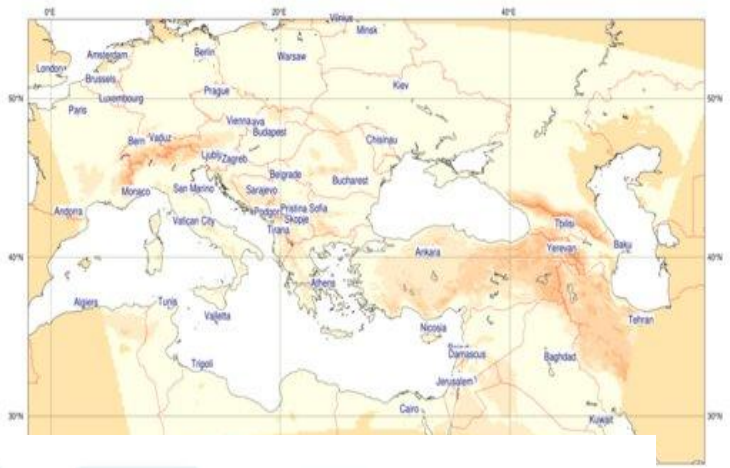
https://www.see-mhews.org/

Southeast European Multi-hazard Early Warning Advisory System



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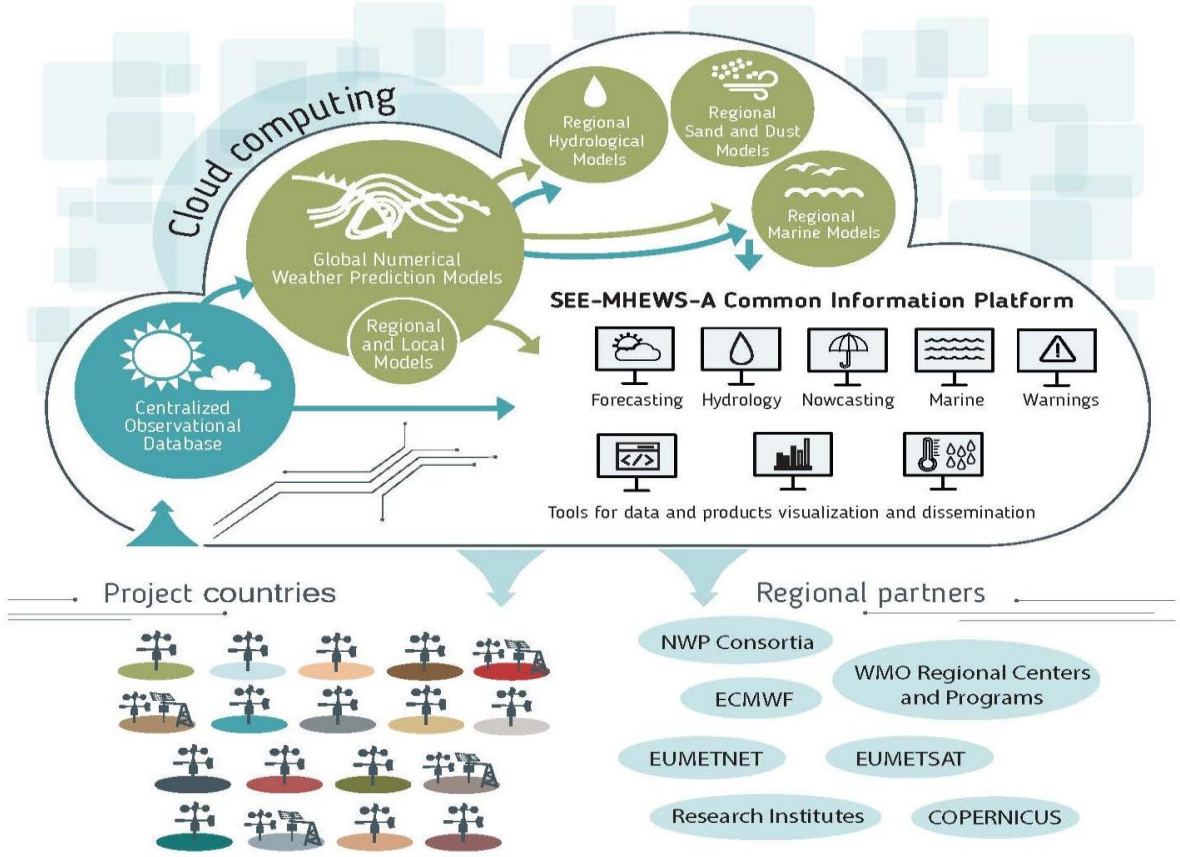

https://www.see-mhews.org/

European Agricutural Meteorological Centre

Main functions:

- The Centre will aim to strengthen cooperation between the National Meteorological and Hydrological Services within Region VI, to improve the skills/professional training of agrometeorology experts and facilitate the conclusion of beneficial partnerships at European and international level, to ensure the successful implementation of research programmes and projects to reduce the effects of global warming and climate change.
- Among the activities to be performed within the Centre, an important place is taken by the continuous training and professional capacity development of the specialists in agrometeorology and related sciences, as well as of the young researchers. Exchanges of experience and examples of good practice as well as training sessions/stages will be encouraged both at the National Meteorological Services' and at the WMO Regional Centres' level.

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European Agricutural Meteorological Centre

Investment stage (1)

The investment includes:

- **a 2-floor building**, having a built area of about 780 m^2 and a developed area of about 2660 m^2, which will accommodate: two conference rooms, offices, laboratories, bedrooms, kitchen, a library and a state-of-the-art videoconference system. The building is in the final phase of execution, and preparation for reception, currently being executed interior finishes and presentation of samples for equipment and furniture. This will be a *„smart & green”* building, a high-performance, energy and resource-efficient, clean, flexible and adaptable one, smoothly combining innovation and technology with high-performance management, to maximise return of investment and the benefit/cost ratio, in accordance with the design theme and legislation in force. The building will have many green areas with resilient vegetation, specific to the area. The roof of the construction itself will be a green terrace-type with a drip irrigation system, also meant to reduce noise in the outer area, both around the building and at the level of the terraces. The building will be energy efficient, so that to limit the heat loss and reduce energy consumption. It will use an alternative power supply system with photovoltaic panels mounted on its roof.

European Agricutural Meteorological Centre

Investment stage (2)

- an IT Data Center

The IT Data Centre will be equipped with modern computer systems and IT equipment, that will provide a high-performance Mission-Critical infrastructure and implement reliability facilities, high availability and maintenance capacity (*RAS: Reliability - Availability - Service Ability*) at all levels that can impact the availability of the hardware system and allow the expansion of RAS facilities to software applications. **A videoconference system** will include specific equipment for conference management and VOIP communications (*Call Manager*) as well as specific video conference equipment (2 „video wall" systems and 7 video terminals), with the aim of disseminating the information and providing communication with the National Agrometeorological Services in Europe and with the Standing Committee on Services for Agriculture within WMO.

A dedicated software application development and implementation services:

- **„Application 1"** - for aggregation and visualization of geospatial data to be made available in real-time, to partner countries and decision-makers;
- **"Application 2"** - for the management and dissemination of phenological questionnaires, with the aim of analyzing the impact of weather and climate on existing and future agricultural systems, as well as defining the necessary actions to ensure the long-term sustainability of agricultural systems within RA-VI;
- **"Application 3" -** for the processing of meteorological data in agrometeorological indicators and carrying out studies and research meant to understand the effects of climate change and variation on food security, including effects due to extreme weather events on the atmosphere-ground-plant system.

European Agricutural Meteorological Centre

Source of funding

INFRAMETEO Project: ”Modernization of the infrastructure for monitoring and warning of severe hydro-meteorological phenomena in order to ensure the protection of life and material assets”

- Cohesion Fund through the Large Infrastructure Operational Program (POIM) 2014-2020, Priority Axis 5 "Promoting adaptation to climate change, risk prevention and management", Specific Objective 5.1 "Reducing the effects and damages on the population caused by the associated natural phenomena the main risks accentuated by climate change, mainly by floods and coastal erosion".
- Cohesion Fund through the Sustainable Development Program (FEDR) 2021-2027, Specific Objective OS 2.4 Promoting climate change adaptation and disaster risk prevention and resilience based on ecosystem approaches

Objective 7 “Establishment of the Regional Agrometeorological Centre for Regional Association VI-Europe of WMO”:

Objective 7a ”Services for the design and execution of works for the Regional Agrometeorological Centre for the VI-Europe Region of the WMO ”. The Contract started on 12.12.2022 and it will be finished in September 2024. The value of the investment is 4.665.622 euro (excluding VAT).

Objective 7b ”Establisment of the Regional Agrometeorological Centre for Regional Association VI-Europe of WMO; Supplying equipment – IT Data Centre, videoconference system, software licences; Software development services - 3 dedicated software applications”. The Contract started on 04.06.2024 and it will be finished in June 2025. The value of the investment is 2.219.497 Euro (excluding VAT).

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Thank you.

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