



**INTEGRATED DROUGHT
MANAGEMENT PROGRAMME**



WORLD
METEOROLOGICAL
ORGANIZATION



**Global Water
Partnership**
Central and Eastern Europe

**IDMP Central and Eastern Europe
&
Drought Management Centre for Southeast
Europe**
Update on regional activities

**Andreja Sušnik, DMCSEE, ARSO
Sabina Bokal, GWP CEE**

Preparation of action plan for drought management

Integrated Drought Management System and measures to mitigate the impact of the climate change in Kosovo

Enhancing drought resilience: Action plan for Kosovo



2. Recommendations and next steps

2.1. Drought Monitoring

State of the art-from review	Recommendations	Action
The responsible body for meteorological, hydrological, ground water, agriculture and hydro-ecological drought is the Kosovo Hydrometeorological Institute, which is part of the Kosovo Environmental Protection Agency.	Establish joint monitoring capacity for covering meteorological, hydrological ground water, agriculture and hydro-ecological droughts assessment.	Upgrade existing drought monitoring systems as recommended by integrating advanced drought indices and a multifaceted approach that includes various data types and sector-specific analysis
According to our experience, joint meteorological, hydrological, groundwater, soil and hydro-ecological monitoring capacity is a good foundation for complex monitoring of all aspects of drought effects. Kosovo already has in place drought monitoring at the national level maintained by Hydrometeorological Institute. It covers many aspects of drought, however only one basic drought index – Standard Precipitation Index (SPI) is implemented. There are no assessment systems in place for hydrological and groundwater drought effects. Essential part would be to give into practice the hydro-ecological monitoring of surface water categories (including wetlands). We encourage improvement of national drought monitoring by means of new, more complex drought indices that would combine a wider range of available data, and by means of implementing a multifaceted (sectoral) approach. We recommend increased cooperation of different sectoral experts and international collaboration (IDMP, DMCSEE and other regional and international fora).		
Hydro-meteorological monitoring system in river basin Drini i Bardhe (7 meteo/14 hydro/ 18 precipitation). There is only limited information on groundwater and on the	Enhance the existing hydro-meteorological, groundwater, soil and hydrological monitoring systems by incorporating advanced sensors for measured elements as soil moisture,	Install soil moisture sensors across the Drini i Bardhe basin to accurately monitor soil dryness and optimize irrigation advising. Upgrade existing meteorological stations with

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National Dialogue - finalization of the action plan

Launch of the Kosovo Drought Community of Practice



Webinars / Online Training

Drought monitoring and early warning (19 March)



Trainign on SPEI index



Knowledge transfer on drought issues due to climate change for Armenia



Main results - *Capacity building & Community of Practice*

- Armenian Community of Practice on Droughts (5 webinars, study visit of Armenian hydromet experts to Bratislava (SHMI, GWP CEE) and Ljubljana (ARSO, DMCSEE and GWP SI); drought monthly bulletins)
- Training for Armenian drought stakeholders on the IDMP
- Supporting and fundraising for IDMP activities in Armenia



Analyzing GESI in National Drought Plans

- GESI as an essential Tool for Drought Resilience
- **Methods to Review Drought Plans with a GESI Perspective**
- GESI Aspects in Drought Plans and their Impact on Plan's effectiveness
- Interaction between National Drought Plans, National Action Plans and Drought Policies in the context of GESI

Integrating Gender Equality and Social Inclusion in National Drought Management Planning

- **Approaches to mainstream GESI in management planning**
- Drought Management Planning from GESI perspective
- Setting gender sensitive indicators in drought management planning
- Case studies for applying the GESI mainstreaming

Capacity building

- GESI and drought vulnerability (UNCCD, DAO workshop, London)
- Online Capacity building (FAO)

Quality Categories	Criteria	Guiding Questions	Rating 0-1
Gendering of the policy/plan	i.	Does the background or situation analysis section explore or make mention of the drought or climate issues affecting women, men, and other social groups in the country?	0.6
	ii.	Was the policy/ plan informed by data and information from a social analysis or gender assessment? Did the vulnerability assessment include a separate social vulnerability assessment or gender analysis?	0.2
	iii.	Does the policy/plan examine the differentiated effects of drought on men, <u>women</u> and other social groups such as the elderly, persons with disability?	0.3
	iv.	Can the language used in the policy / plan be defined as gender transformative?	0.1

Overview Report on Droughts/Low Water Levels in the Danube River Basin



International Commission for the Protection of the Danube River
Internationale Kommission zum Schutz der Donau

- Collect and update recent situations on different parts of drought management
- Show existing approaches and best practices
- Define common approaches to improve drought management in the basin
- Provide key suggestions for increasing the Danube's resilience to drought and proposals for further activities at national and basin-wide levels

Suggestions of Possible Future Activities on the Transboundary Level	Possible Added Value for the ICPDR
Policy	
Consider the internationally accepted <i>three-pillar Integrated Drought Management approach</i> as a basis to tackle drought in the DRB.	Agreed basin-wide framework to guide the ICPDR in transboundary drought management.
Establish an ICPDR mechanism ⁹³ and/or an ad-hoc Task Group to technically address and coordinate drought-related issues.	Mechanism to coordinate drought topics within the ICPDR framework in an effective way.
Introduce the <i>Danube Drought Strategy</i> (DriDanube Project) to the ICPDR and consider in consequence its use to guide the ICPDR in basin-wide drought management.	A <i>Drought Strategy</i> would support an effective approach to manage droughts in the DRB. Hence, it would support the ICPDR and its countries to coordinate and address droughts on the basin-wide level also making use good-practice approaches.
Monitoring	
Initiate the definition of low water levels in the Danube River making use of <u>DanubeHIS</u> , the ICPDR's TNMN and good-practice approaches already implemented in other river basins like in the Sava and the Rhine.	Identified low water level thresholds will support the ICPDR and water sectors affected by low water levels in the Danube River in effective management in case of water scarcity. <u>DanubeHIS</u> is already a tool collecting hydrological data, can deliver the data for operational low water level
Initiate a technical dialogue on transnational drought monitoring towards harmonised and coherent assessments the DRB as well as to discuss the role of <u>DanubeHIS</u> in this.	Agreed common approach to harmonised basin-wide drought monitoring using existing tools like <u>DanubeHIS</u> and harmonised drought monitoring common methodologies (e.g. models, data sources, thresholds, drought) that ensure consistency
Complementing <u>DanubeHIS</u>, consider already existing basin-wide drought monitoring systems	Additional monitoring systems to complement <u>DanubeHIS</u> and

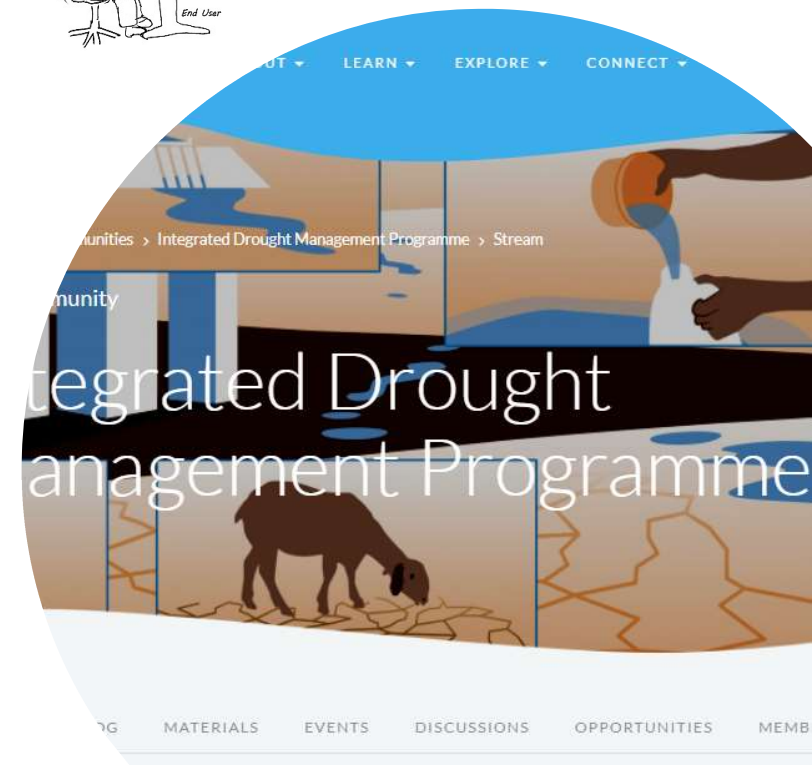
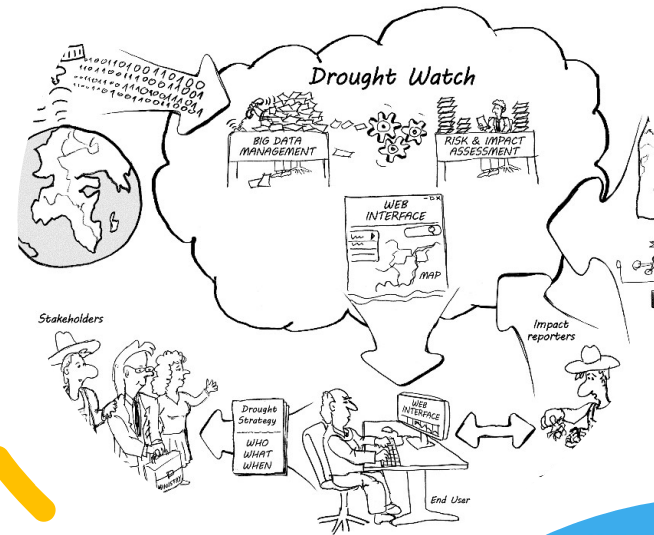


WMO ET Drought questionnaire included in the country's state of the art analysis



Planned activities

- Integrate the successful elements of DroughtWatch into existing regional systems to ensure continuous and effective drought monitoring and management.
- Assist the ICPDR in implementing selected drought management activities in the Danube River Basin (DRB) as per the recommendations outlined in the "Overview Report.,,
- Facilitate the transfer of knowledge and lessons learned, fostering exchange and collaboration between partners both within and outside the region.
- Support the establishment and development of a community of practice dedicated to drought management





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DMCSEE
*Drought Management Centre
for Southeastern Europe*



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ARSO METEO
Slovenian Environment Agency



**Global Water
Partnership**
Central and Eastern Europe



**Drought Management Centre for Southeastern
Europe**
Update on ARSO drought-related projects

Interreg



Co-funded by the European Union

Alpine Space

X-RISK-CC



X-RISK-CC

How to adapt to changing weather eXtremes and associated compound RISks in the context of Climate Change

<https://www.alpine-space.eu/project/x-risk-cc/>

HOME

OUTCOMES

PILOTS

NEWS & EVENTS

Partners

European Academy of Bozen-Bolzano – EURAC Research (Lead partner)

Civil Protection Agency, Autonomous Province of Bolzano

Autonomous Province of Trento

Slovenian Environment Agency

Development agency Sora

Auvergne Rhône-Alpes Energy Environment Agency

GeoSphere Austria

Forest-technical service for torrent and avalanche control, Section Tyrol

Technical University of Munich

Environment Agency Austria



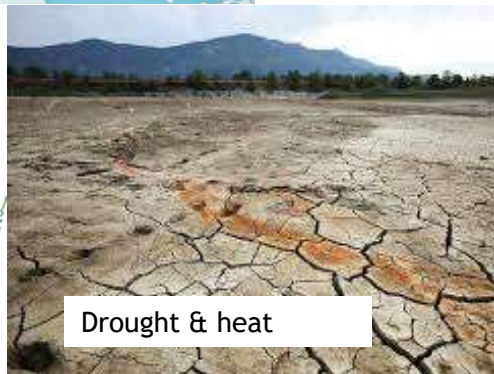
First results



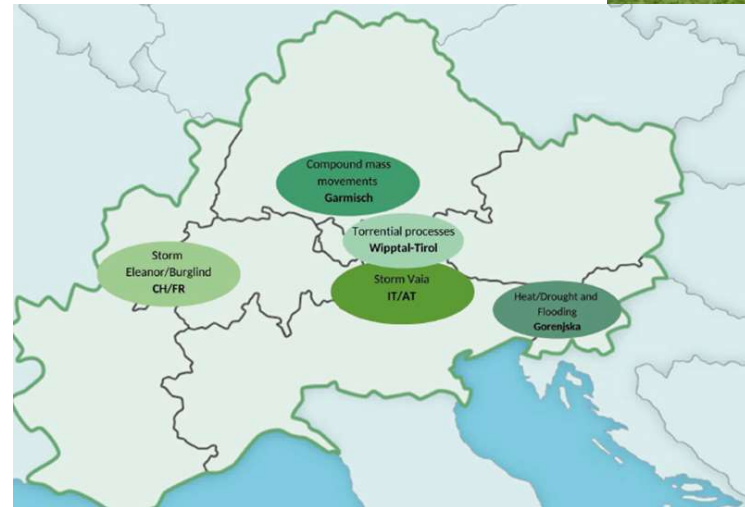
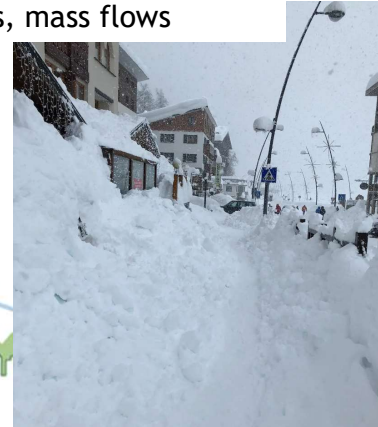
Extreme rain, floods



Avalanches, mass flows



Drought & heat



Windthrow, mass movements

Interreg



Co-funded by
the European Union

X-RISK-CC

Alpine Space

- **Digital library** on past and future weather extremes across the AS including the webGIS platform
- **X-RISK-CC manual:** A conceptual approach designed for risk managers/practitioners to support them in assessing and coping with the newly emerging risks of weather extremes in their area
- **Pilot area dossiers**
- **Pilot action plans of tailored risk management measures** to be developed in the pilot areas to cope with increasing weather extremes and their compound impacts/risks

CLIM4CAST PROJECT

„Central European Alliance for Increasing Climate Change Resilience to Combined Consequences of Drought, Heatwave, and Fire Weather through Regionally-Tuned Forecasting“

Interreg CENTRAL EUROPE Co-funded by the European Union

Clim4Cast

Clim4Cast
www.interreg-central.eu/projects/clim4cast
 #Clim4Cast

Lead partner contact:

centrum@czechglobe.cz
www.czechglobe.cz

Time frame: Mar 2023 - Feb 2026 (3 years)
 Budget: 1.913.954,00 EUR (80 % ERDF funds)
 Programme: Interreg Central Europe 2021-2027

8 project partners , 26 associated partners (observers)
 7 CE countries



 Global Change Research Institute CZ	Lead partner	(CZ)	(CZ)	 - Department of Geography UNIVERSITY
 TECHNISCHE UNIVERSITÄT WIEN Vienna University of Technology		(AT)	(PL)	 Institute of Soil Science and Plant Cultivation State Research Institute
 Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e.V.		(D)	(SI)	 Slovenian Environment Agency
 Croatian Hydrological and Meteorological Service		(HR)	(SK)	 Slovak Hydrometeorological Institute

MAIN TASKS

(2) Forecasting tool for DHF and their compound effects

- Collect best practices on monitoring and prediction of DHF and compound events
- Mid-range (~10 days), extended (~50 days) and seasonal (~6 months) DHF forecasts functionalities to the national EWS systems

(1) Integrated strategy to increase awareness on DHF and climate change effects

- Collect data on occurrence & impacts of DHF events
- Methodology for attribution of occurrence of DHF events to CC
- Strategy on improved climate change awareness

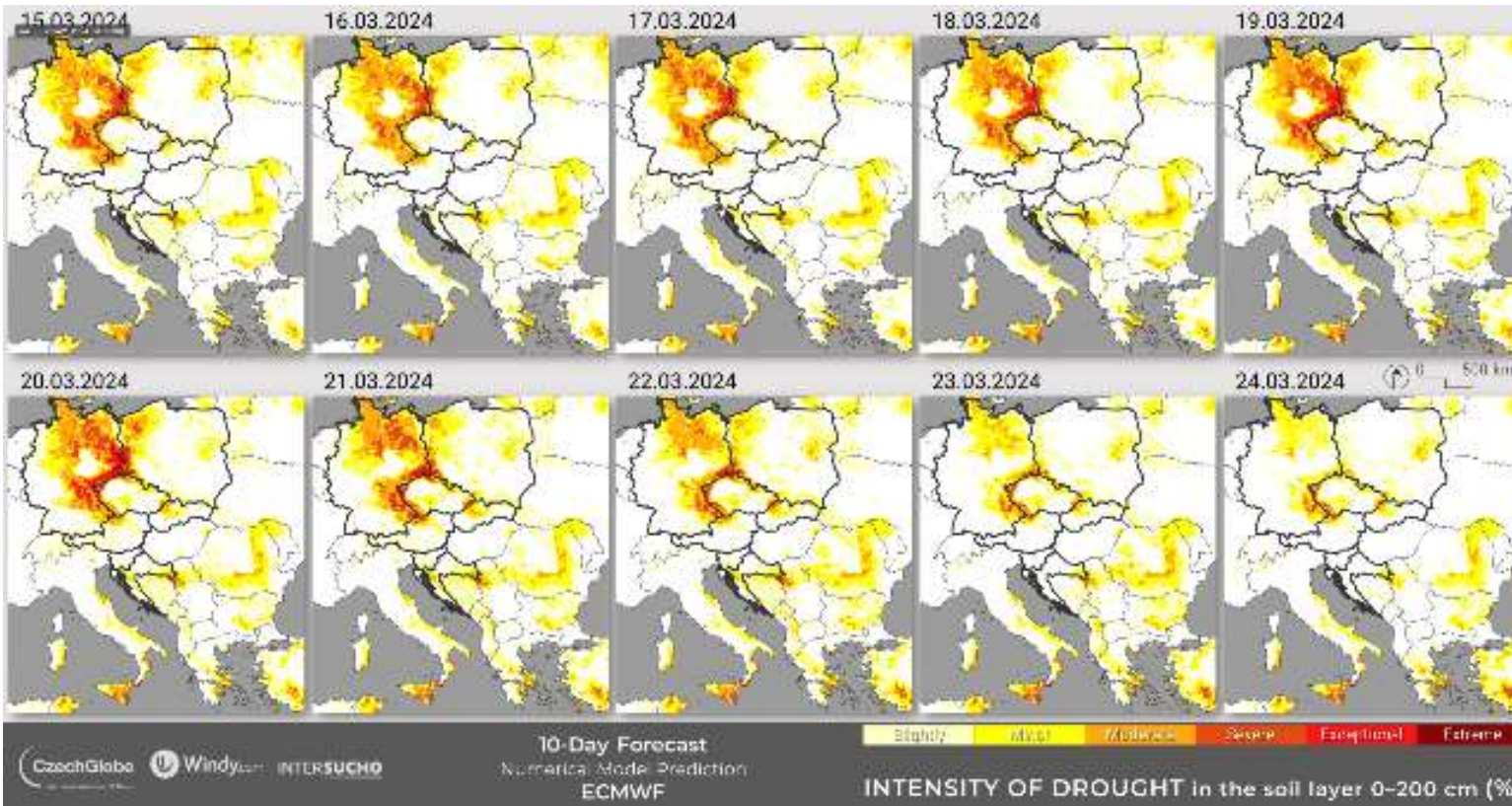
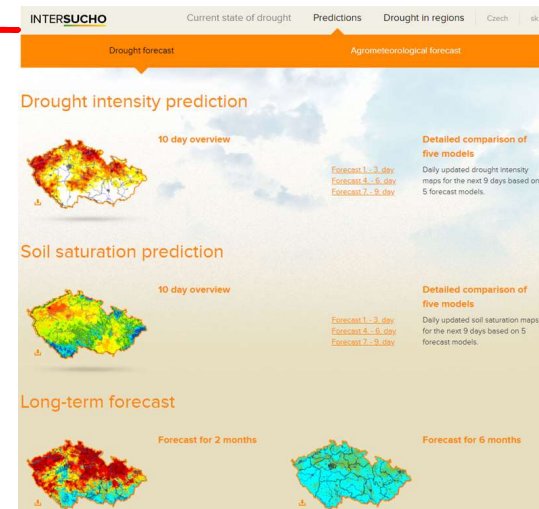
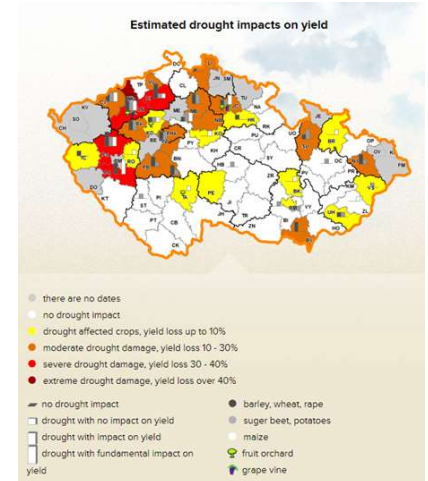


(3) DHF response action plan through efficient EWS

- Existing status of DHF response & best practices
- Institutions communication and engagement action plan within existing legal frameworks

1. DHF indicators (CEE and SEE Europe; ~10 , ~50 day, seasonal forecast) produced by CzechGlobe

1. Common platform
2. Widget for the integration into national operational tools



2. DHF impact database (l. 2000-)



Country	droughts	heatwaves	wildfires	Total
Austria	197	177	163	537
Croatia	550	232	971	1753
Czechia	88	103	172	363
Germany	13	7	15	35
Poland	118	32	303	453
Slovakia	140	164	79	383
Slovenia	264	48	196	508
Total	1370	763	1899	4033

PREMIUM | OKOLJE
Suša v slovenski Istri: vojna v času miru
 V Rižanskem vodovodu so ponosni, da še vedno zagotavljajo pitno vodo. Ribiči svarijo, da Rižana ne sme presahnti.





PREMIUM | OKOLJE
Preti najhujša suša zadnjega pol stoletja

Analize so, a še vedno se nihče ne zgane, čeprav suša grozi tako pridelavi hrane kot energije, vročina pa ubija.



Brez zalivanja zdaj nič ne zraste. A nimamo konkretnih načrtov, kako to urediti bolje v prihodnje. FOTO: Matej Družnik/Delo

3. Strategy and Action plans for the proactive response to DHF



EXISTING STATUS OF RESPONSE IN THE FACE OF DHF EVENTS

– Country profile

A. Context of this questionnaire

Purpose

The aim of this questionnaire is to provide a comprehensive review of the existing ground on proactive DHF response in partner countries and partners' best practises on development and communication of early warning information and enhancement of wide public awareness on DHF impacts and required proactive response.

It focuses on specific (narrow) topics in relation to DHF events, and this way complements the scanning-of-ground within other project activities (carried out in parallel or later in the project timeline):

- Act. 1.4: Analysis of DHF events cross-border effects in all involved countries,
- Act. 2.1: Collection of partner best practices on monitoring and prediction of DHF and compound events and identification of specific needs,
- Act. 3.2: Developing a joint communication and engagement action plan within existing legal frameworks,
- Act. 3.3: Communication of the action plan with stakeholders.

The information gathered through this questionnaire presents the crucial ground for further work on developing DHF response action plan (Output 3.1).



TRANSNATIONAL RECOMMENDATIONS ON IMPLEMENTATION OF PROACTIVITY & PREPAREDNESS

– in the face of drought, heatwave and forest fire weather (DHF)

A. Context of this report

In parallel with the review of existing national response regarding DHF (D3.1.1 Country profile reports), transnational ground is reviewed in search of recommendations in place on how DHF proactivity and preparedness can be implemented both in national operational practice as well as in national regulations. Recommendations found were categorised by their form, as either document proposals, initiatives, tools, project results or other, with further short description of the implementation into practice or regulation.

B. Transnational recommendations - a review

The information gathered in this Report were sourced via / with the help of:

National reports of partner countries

„Fostering regional drought resilience in SEE“ DMCSEE Consortium meeting

Date and time: 12-13 November 2024

Tuesday, 12th November:

9:00 - 13:00 Joint session with project Clim4Cast

13:00 - 17:00 DMCSEE meeting

Wednesday, 13th November:

9:00 - 13:00 DMCSEE meeting

Place: Ljubljana (some parts of the meeting will be hybrid)



Ministerial conference in
Ljubljana in spring 2025
(WMO SG)



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Thank you for your attention!

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