



BEYOND SCARCITY

WATER SCARCITY AND DROUGHT RISK MANAGEMENT IN THE DANUBE REGION

WORKSHOP
SEPTEMBER 20-21, 2021

Context and objective

Water scarcity and droughts are amongst the most tangible – and devastating – consequences of the climate crisis. They increasingly affect communities across the planet, causing tolls on societies, the economy and environmental impacts. Europe and the Danube Region are no exception. In the last decades, a series of widespread droughts have affected significant parts of Europe. The droughts in 2003 have affected over 100 million people, a third of the EU territory, and cost approximately € 8.7 billion in damage to the European economy. They were followed by events that have affected portions of Northern, Southern, and Western Europe in 2007, 2011, and 2012.

Also, significant parts of the Danube River Basin were affected by droughts. In recent years such as 2003, 2007, 2012 and 2015, droughts caused negative impacts on various water-dependent economic sectors, the welfare of people, vegetation and on the aquatic environment. In 2017, a significant drought developed across the entire Danube Region and persisted in its northern parts throughout 2018 and 2019. This is one of the latest of a series of events which occurred, and these recent trends highlight the significance of the issue in European regions, including the Danube, specifically in the context of climate change. It is crucial that societies adapt, and that governments and water-dependent sectors accelerate prioritizing and scaling up their response mechanisms to water scarcity and droughts in the coming decade.

Managing drought needs to be conceptualized in the light of climate change, considering that drought is a slow onset disaster, which may cause even more severe damage than rapid events such as floods. As there is no specific EU legislation especially dedicated to water scarcity and drought, the existing policies and sectorial instruments in different water-related fields need to be used and integrated since they are partially or at least marginally related to drought and can support drought management policies.

In order to support Danube countries in their water management efforts, the **Danube Water Program**, a partnership program between the World Bank and the International Association of Water Service Companies in the Danube River Catchment Area (IAWD), has extended its scope of activities, addressing issues related to “Water Security,” including water services delivery, water resources management and water-related risk mitigation in the context of socio-economic development, climate change, and work on the implementation of the water-related EU Acquis Communautaire.

Established in 1998, the **Global Water Partnership Central and Eastern Europe** (GWP CEE) works to support the countries of Central and Eastern Europe in the sustainable development and management of their water resources. Since 2013, the Integrated Drought Management Programme in CEE (IDMP CEE) aims at enhancing drought resilience in the Central and Eastern Europe. It helps build up capacities of target groups for a proactive integrated drought management approach by improving drought monitoring and unification of drought impacts and risk assessments. IDMP CEE fosters dialogues between the scientific and policy-making communities for integrating water security and drought resilience into national development planning and decision-making processes.

Furthermore, in the frame of the **EU Strategy for the Danube Region** on Environmental Risks (Priority Area 5) together with GWP CEE, in 2020 a policy review “Revision of the EU policy instruments related to drought and water scarcity mitigation” has been published. The review was undertaken based on five criteria, including monitoring, incentives to water efficiency and circular economy, knowledge and research, measures to improve drought management and to develop drought management plans and financial instruments. The topic is also receiving increased attention in the frame of the **International Commission for the Protection of the Danube River** (ICPDR) in the context of the development of the next generation of the Danube River Basin Management Plan.

The **objective of the workshop** is to raise awareness about the relevance, past and potential future impacts of water scarcity and droughts in the Danube region, and to provide a forum for a technical exchange on good practice approaches and options to address the issue in order to make the region more resilient against such extreme events. The objective is also to allow for taking stock on challenges and potential support needs for future action.

Target Audience

The event is targeting a variety of water sector professionals interested in the topic, including national level policy makers and regulators, environmental agencies, representatives from national water and municipal associations, international organizations and river basin organizations, academia, private sector, NGOs and representatives from bilateral donors and international financing agencies.

Registration

Please register yourself to participate in the workshop using the [Registration link](#)! As soon as you have registered for participating you will receive a link via email to join the event.

The workshop will be brought to you by the Zoom webinar tool. We recommend downloading the Zoom App (for PC and mobile devices) [here](#).

I. SESSIONS OVERVIEW

Monday, 20 September	
13:30	Start of Day 1 - Welcome and introduction
13:30	Session 1: Setting the scene Welcome by organizers and keynote speeches on approaches for water scarcity and drought risk management
14:45	<i>Break</i>
15:00	Session 2: Relevance of water scarcity and droughts in the Danube region Presentations on scientific findings and latest developments at national and regional level
16:15	Session 3: Impacts and response activities from water-related sectors Interactive working group discussions
17:00	<i>End of Day 1</i>

Tuesday, 21 September	
13:30	Start of Day 2
13:30	Session 4: Feedback from working groups Feedback session with key outcomes from discussions Session 3
14:30	Session 5: Pathways, policy and regulatory approaches to improve resilience against water scarcity and droughts Showcasing examples of good practices and ongoing response activities
15:45	<i>Break</i>
16:00	Session 6: Wrap-up and closing Key take-away messages from the event
16:30	<i>End of Day 2</i>

II. MONDAY, SEPTEMBER 20TH

1. Setting the Scene

Date: Monday, September 20th
Time: 13:30 to 14:45
Location: Zoom link provided via registration
Chair: Mr. Raimund Mair, World Bank

Context and objective

Climate change is driving water scarcity and variability at a global scale. Droughts are no longer isolated to “dry” territories but have become a growing issue in regions previously considered “water rich.” Preparedness and long-term adaptation plans are needed for drought risk management. The session will allow to set the scene and introduce the topic of water scarcity and drought risk management at the global level. Speakers from different international institutions will inform about global and regional perspectives, relevance and practical activities to address the issue.

Session structure

Time		Content	Speaker
13:30	10'	Welcome and introduction to the event	Mr. Raimund Mair, on behalf of the World Bank and GWP CEE
13:40	15'	Global perspectives and innovative governance approaches for drought risk management	Mr. Nathan Engle, Senior Climate Change Specialist, World Bank
13:55	15'	Drought under Climate Change and the Need for Integrated Risk Management	Mr. Valentin Aich, GWP/WMO IDMP Technical Support Unit
14:10	15'	Managing environmental risk in the Danube basin with a focus on water scarcity and drought	Mr. László Balatonyi, Priority Area 5 Coordinator, EU Strategy for the Danube Region
14:25	20'	Q&A and discussion	Moderated by Mr. Raimund Mair, World Bank
14:45	End of Session 1		

Speakers' biographies



- ▶ **Mr. Raimund Mair** joined the World Bank Group Water Global Practice in January 2019. In his position as Senior Water Resource Management Specialist he is involved in addressing aspects related to Water Security in the Europe and Central Asia region, as well as leading the 3rd Phase of the Danube Water Program. In his previous occupations at the European Commission and the International Commission for the Protection of the Danube River, he was working on the implementation of the EU Water Framework Directive and transboundary cooperation. Mr. Mair holds diplomas in Engineering from the University of Natural Resources and Life Sciences, Vienna and Water Policy from Cranfield University, United Kingdom.



- ▶ **Mr. Nathan Engle** is Senior Climate Change Specialist with the World Bank's Water Global Practice. Nate works to mainstream climate change into World Bank water sector investments. He is also responsible for resilience-related analytical products and methodological developments and advises governments on climate change adaptation and drought policy & management. Nate completed his Ph.D. at the University of Michigan's School of Natural Resources & Environment (now School of Environment and Sustainability) and earned masters' degrees at the University of Michigan in Public Policy (MPP) and Natural Resources and Environment (MSc). He holds a BS in Earth Sciences from the Pennsylvania State University.



- ▶ **Mr. Valentin Aich** joined Global Water Partnership (GWP) as Senior Water and Climate Specialist in 2020 and he is seconded to the World Meteorological Organization (WMO), where he is working for the Technical Support Unit of the joint flood (APFM) and drought (IDMP) programs of both organizations as well as coordinating other joint activities. Previously Valentin was Associate Scientific Officer with the Global Climate Observing System (GCOS) of WMO. Before joining WMO, Valentin worked for 2 years as Climate Change Adaptation Specialist for UNEP in Afghanistan. He is guest scientist with the Potsdam Institute of Climate Impact Research (PIK) where he conducts research for 9 years with focus on hydroclimatic extremes and where he has written his PhD thesis about floods in the Niger basin.



- ▶ **Mr. László Balatonyi** is, since 2019, the co-coordinator of the EU Strategy for Danube Region of the Environmental Risks priority area. The main focus of the Priority Area is to address the challenges of water scarcity and droughts in line with the Danube River Basin Management Plan. Other activities of the priority area are focusing on - in general - various types of flood protection activities. For 10 years now he has been working for the General Directorate of Water Management (OVF), now as Head of the Urban Water Management Department. He is environmental expert (MSc) graduated at the Pécs University of Natural Sciences in 2009. The objective of the doctoral thesis is focused on the small streams flood (flash floods) in SW Hungary. He finished his PhD in 2016. Since 2019 he is a senior lecturer in the University of Public Service faculty of Water Sciences and teaching students on practically oriented subjects.

2. Relevance of water scarcity and droughts in the Danube region

Date: Monday, September 20th
Time: 15:00 – 16:15
Location: Zoom link provided via registration
Chair: Konstantin Ivanov, GWP CEE

Context and objective

In recent years, significant parts of the Danube River Basin (DRB) have been affected by drought, which had a negative impact on various water-dependent economic sectors, welfare of people, vegetation and on the aquatic environment. In 2017, significant drought developed across the entire DRB and persisted in its northern parts throughout 2018 and 2019. These recent trends highlight the significance of the issue in European regions, including the Danube, specifically in the context of climate change. The session will allow to shed light on the relevance of water scarcity and drought in the Danube region. Speakers will inform about latest scientific findings, including the impacts of past and current events, provide an outlook on expected future developments regarding potential exposure and impacts on different water-related sectors, and to inform about latest developments and response activities at national and regional level.

Session structure

Time		Content	Speaker
15:00	5'	Introduction	Mr. Konstantin Ivanov, GWP CEE
15:05	10'	Integrated Drought Management Program in CEE – perspectives and activities	Ms. Sabina Bokal, GWP CEE
15:15	10'	Tackling drought in South-east Europe	Dr. Andreja Sušnik, DMCSEE - Drought Management Centre for Southeastern Europe
15:25	10'	National Action Plan to address the effects of drought and water scarcity in Slovakia	Ms. Danka Thalmeinerová, Ministry of Environment, Slovakia
15:35	10'	A Water Balance for the Danube River Basin	Mr. Balázs Horváth, Hungary, and Mr. Miodrag Milovanovic, Serbia, in the frame of the ICPDR
15:45	30'	Q&A and discussion	Moderated by Mr. Konstantin Ivanov, GWP CEE
16:15	End of Session 2		

Speakers' biographies



- ▶ **Mr. Konstantin Ivanov** is the Regional Coordinator for Central and Eastern Europe of the Global Water Partnership, a global action network focused on the sustainable management of water resources with over 3,000 partner organizations in 179 countries, including 11 in the CEE region, focused on transboundary cooperation, SDGs, climate and youth issues among others. Mr Ivanov has extensive experience in nature conservation, including climate change adaptation projects and freshwater restoration, as well as advocacy, fundraising and campaigning work for WWF Central and Eastern Europe. In his earlier career as a journalist, he has worked for a variety of media outlets, last with the BBC World Service. Mr Ivanov holds a Master's Degree from the University of Sofia.



- ▶ **Ms. Sabina Bokal** has over 11 years of experiences in environmental management, project planning and team lead. She is a Senior Programme Manager with GWP CEE. Her role involves development and evolution of the themes: disaster risk reduction, climate resilience, transboundary cooperation and waste water management; development and fostering of multi-stakeholder partnerships; development, management and coordination of multi-annual, cross country and cross sectoral programmes and projects; design and coordination of stakeholder engagement activities and capacity building within programmes. Before, she has been involved in the Drought Management Centre for Southeastern Europe (DMCSEE). She holds a Master's degree in Geography from the University in Ljubljana and has completed courses in the areas of Climate Change, Integrated Water Resource Management, environmental policy and management, stakeholder engagement and EU funds.



- ▶ **Dr. Andreja Sušnik** is a head of the Agrometeorological Analysis Section at the Meteorology, Hydrology and Oceanography Office in the frame of the Slovenian Environment Agency (ARSO). She has Ph.D. in Agronomy, with an emphasis on agrometeorology. As a head of the Agrometeorological Section, her work is mainly focused on operational agrometeorology, in parallel, she is coordinating Drought Management Center for South Eastern Europe activities since 2006. The main topics of her work are the development of agrometeorological services for different stakeholders like preparation of strategical documents related to vulnerability assessments and adaptation of agriculture to climate change, development of drought monitoring tools and methodology and management on a national and international scale. She has been involved in and coordinating many national and international projects and working groups related to agrometeorology/drought. She also performs learning interactions with different target groups.



- ▶ **Ms. Danka Thalmeinerová** is a strategic water planning officer at the Slovak Ministry of Environment. She is working on the implementation of the EU Water Framework Directive and other water related directives. In her previous work, she worked as a senior knowledge management officer in Global Water Partnership, Sweden. She participated in projects related to EU approximation, water policy and legislative development, international treaty implementation and water economics. Since October 2000, she is a coordinator of the development of a new national water policy in Slovakia to address aspects of climate change adaptation in water sector. She holds her Ph.D. from the Slovak Technical University in Bratislava, Slovakia. She obtained further training at IHE Delft, the Netherland, and HIID, Cambridge, USA.



- ▶ **Mr. Balázs Horváth** holds an MSc in hydrology and geography from Eötvös Lóránd University of Sciences in Budapest (Hungary). For 23 years he has been involved in environmental public administration with special regard to water management at different levels. He worked at the European level for the European Commission, DG Environment, for 7 years on the implementation of the Water Framework and Groundwater Directives. He was a senior policy officer on water and soil at the European Environmental Bureau (EEB). He was involved in regional and state level implementation of integrated pollution control in the Hungarian public administration. He is currently the Head of the International Unit at the Hungarian General Directorate of Water Management and Priority Area Coordinator of the EU Strategy for the Danube Region Priority Area 4 "Water Quality".

3. Impacts and response approaches of water-related sectors

Date: Monday, September 20th
Time: 16:15 – 17:00
Location: Zoom link provided via registration
Chair: Individual working group chairs

Context and objective

The objective of the Working Group is to share experiences and draw attention to the impacts of water scarcity and drought on key water-related sectors and related response options. The session will be set up in an interactive format, allowing for parallel moderated discussions of participants. The results of the Working Group will be presented at Session 4 on day 2.

The Working Groups will focus on three topics for discussion:

1. **Observed drought impacts:** The participants will have the chance to share drought impacts observed in the different sectors and the environment in their respective contexts.
2. **Past and ongoing activities to improve resilience:** Participants will map together the kind of activities and measures already in place in their respective contexts and their nature (in preparation for a future drought or as a response to it).
3. **Implementation challenges and enabling environment for pro-active approach:** Participants will discuss whether the challenges discussed are hampering better DRM in their respective contexts and what is needed to enable better drought risk management.

Please refer to Chapter 5 of the *Danube Drought Workshop - Background Report* to prepare.

III. TUESDAY, SEPTEMBER 21ST

4. Feedback from Working Groups

Date: Tuesday, September 21st
Time: 13:30 to 14:30
Location: Zoom link provided via registration
Chair: Kathia Havens, World Bank

Context and objective

The session will allow for short presentations and discussion with all participants on the key outcomes from discussions from Session 3.

Session structure

Time		Content	Speaker
13:30	5'	Introduction	Kathia Havens, World Bank
13:35	30'	Presentations on key outcomes from working groups	Working Group reporters
14:05	25'	Q&A and discussion	Moderated by Kathia Havens, World Bank
14:30	End of Session 4		

5. Pathways, policy and regulatory approaches to improve resilience against water scarcity and droughts

Date: Tuesday, September 21st
Time: 14:30 to 15:45
Location: Zoom link provided via registration
Chair: Raimund Mair, World Bank

Context and objective

Despite extensive damages in the last decades and an expected increase due to climate change, in many places, drought often continues to be managed as a crisis situation, by implementing emergency procedures and urgent measures. However, this approach usually fails to achieve sustainable solutions. A proactive approach on the other hand counts on drought prevention, mitigation, vulnerability reduction, planning and preparedness. Therefore, the focus needs to shift from recovery to protection, from crisis management to risk management. Policy and regulation are vital to drought risk management and can be seen in a variety of forms from National Action Plans to River Basin Management Plans. This session aims to further highlight some successes and lessons learned from the Danube region regarding foundational assessments and pathways towards policy approaches, regulation and measures for water scarcity and drought risk management.

Session structure

Time		Content	Speaker
14:30	5'	Introduction	Mr. Raimund Mair, World Bank
14:35	10'	Water assessment in a water rich country – New “Wasserschatz” study	Mr. Johannes Grath, Leader of the Groundwater Team, Environment Agency, Austria
14:45	10'	Water resources and drought risk management in the Czech Republic	Ms. Jana Tejkalová, Ministry of the Environment, Czech Republic
14:55	10'	Hungarian drought in-situ monitoring system	Mr. Balázs Horváth, General Directorate of Water Management, Hungary
15:05	40'	Q&A and discussion	Moderated by Mr. Raimund Mair, World Bank
15:45	End of Session 5		

Speakers' biographies



- ▶ **Mr. Raimund Mair** joined the World Bank Group Water Global Practice in January 2019. In his position as Senior Water Resource Management Specialist he is involved in addressing aspects related to Water Security in the Europe and Central Asia region, as well as leading the 3rd Phase of the Danube Water Program. In his previous occupations at the European Commission and the International Commission for the Protection of the Danube River, he was working on the implementation of the EU Water Framework Directive and transboundary cooperation. Mr. Mair holds diplomas in Engineering from the University of Natural Resources and Life Sciences, Vienna and Water Policy from Cranfield University, United Kingdom.



- ▶ **Mr. Johannes Grath** is Leader of the Groundwater Team at the Environment Agency Austria. He is active at both national and international levels. In Austria his main activities include the development of groundwater management and protection strategies, the design and implementation of groundwater monitoring programs, elaboration of assessment methods and the development of the respective measures. At the European and international level, Johannes Grath deals with groundwater related issues of the European Water Framework Directive. He chaired the Task Group on Groundwater in the Danube River Basin from 2006 to 2008 and is currently co-chair of the EU Working Group on Groundwater. He was actively involved in the development of several groundwater related guidance documents supporting the implementation of the European Water Framework Directive.



- ▶ **Ms. Jana Tejkalová** joined Ministry of the Environment in February 2013. In his position in Department of Water protection as Head of Unit of International Cooperation and Planning in the Water Area is involved in implementation of Water Framework Directive and Flood Directive. In previous job she was working as a water designer in Czech Republic and United Kingdom. Mr. Tejkalová holds diplomas in Civil Engineering from Czech Technical University of Prague and in Philosophy & Arts from Charles University of Prague. She is Chartered Engineer Water Structures - Member of the Czech Chamber of Chartered Engineers and Technicians.



- ▶ **Mr. Balázs Horváth** holds an MSc in hydrology and geography from Eötvös Lóránd University of Sciences in Budapest (Hungary). For 23 years he has been involved in environmental public administration with special regard to water management at different levels. He worked at the European level for the European Commission, DG Environment, for 7 years on the implementation of the Water Framework and Groundwater Directives. He was a senior policy officer on water and soil at the European Environmental Bureau (EEB). He was involved in regional and state level implementation of integrated pollution control in the Hungarian public administration. He is currently the Head of the International Unit at the Hungarian General Directorate of Water Management and Priority Area Coordinator of the EU Strategy for the Danube Region Priority Area 4 "Water Quality".

6. Wrap up and Closing

Date: Tuesday, September 21st
Time: 16:00 to 16:30
Location: Zoom link provided via registration
Chair: Sabina Bokal, GWP CEE

Context and objective

This session will allow to summarize the key take home messages, draw conclusions, reflect on the lessons learned and identify potential future actions.

Session structure

Time		Content	Speaker
16:00	5'	Introduction	Sabina Bokal, GWP CEE
16:05	10'	Summary, conclusions, lessons learned and potential future actions	Natalia Limones Rodriguez, Senior Researcher
16:15	10'	Q&A and discussion	Moderated by Sabina Bokal, GWP CEE
16:25	5'	Closing words by event organizers	Konstantin Ivanov on behalf of GWP CEE and the World Bank
16:30	End of the event		

Speakers' biographies



- ▶ **Ms. Sabina Bokal** has over 11 years of experiences in environmental management, project planning and team lead. She is a Senior Programme Manager with GWP CEE. Her role involves development and evolution of the themes: disaster risk reduction, climate resilience, transboundary cooperation and wastewater management; development and fostering of multi-stakeholder partnerships; development, management and coordination of multi-annual, cross country and cross sectoral programmes and projects; design and coordination of stakeholder engagement activities and capacity building within programmes. Before, she has been involved in the Drought Management Centre for Southeastern Europe (DMCSEE). She holds a Master degree in Geography from the University in Ljubljana and has completed courses in the areas of Climate Change, Integrated Water Resource Management, environmental policy and management, stakeholder engagement and EU funds.



- ▶ **Ms. Natalia Limones Rodriguez** is a Senior Researcher for the Department of Physical Geography at the University of Seville (Spain) and a Consultant in Drought Management for the World Bank (WB) Water Global Practice. She has researched and cooperated with international experts and stakeholders from more than 20 countries in the fields of Water, Disaster Risk Management and Environment. Dr. Limones holds a PhD in Physical Geography and Natural Risks and an MSc in Water and Environmental Management from the University of Seville and the University of Bristol, both recognized with the highest honors.



- ▶ **Mr. Konstantin Ivanov** is the Regional Coordinator for Central and Eastern Europe of the Global Water Partnership, a global action network focused on the sustainable management of water resources with over 3,000 partner organizations in 179 countries, including 11 in the CEE region, focused on transboundary cooperation, SDGs, climate and youth issues among others. Mr Ivanov has extensive experience in nature conservation, including climate change adaptation projects and freshwater restoration, as well as advocacy, fundraising and campaigning work for WWF Central and Eastern Europe. In his earlier career as a journalist, he has worked for a variety of media outlets, last with the BBC World Service. Mr Ivanov holds a Master's Degree from the University of Sofia.