



Water for Sustainable Development and  
Adaptation to Climate Change under the  
auspices of UNESCO



World Wide Fund for  
Nature Adria-Serbia



Serbian  
National Commission  
for UNESCO

Komisija Republike  
Srbije za saradnju  
sa Uneskom

United Nations  
Educational, Scientific and  
Cultural Organization  
Organizacija  
za obrazovanje,  
nauku i kulturu  
Ujedinjenih nacija

Date: February 25, 2021

Time: 10:00-12:20

Platform: MC Teams

Participants: 30

## Webinar: "Impacts of Climate Change on Surface Water Quality in the Republic of Serbia and Recommendations"

### Introduction

Webinar on "**Impacts of climate change on surface water quality in the Republic of Serbia and recommendations**" was held on February 25, 2021 jointly organized by the Center for Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO (WSDAC) and the World Wide Fund for Nature ADRIA - Serbia (WWF Adria), with the support of the Commission of the Republic of Serbia for Cooperation with UNESCO.

Climate change is evident, and scientific evidence shows that the climate will continue to change.

Climate change will affect the availability, quality and quantity of water for basic human needs, jeopardizing basic human rights to access clean water and sanitation worldwide. Changing the water cycle will also pose risks to energy production, food safety, human health, economic development and poverty reduction, which will seriously jeopardize the achievement of sustainable development goals.

WWF Adria and WSDAC recognized the importance of exchanging information, knowledge and experience on climate change, as well as the importance of strengthening cooperation between various institutions at the national level, including members of the UNESCO network in Serbia.

In accordance with the recommendations due to the current epidemiological situation caused by Covid-19, the gathering was organized online. The list of participants is given in Annex 1.

The webinar was organized through two blocks. In the first block, the participants were addressed by: Brankica Majkić-Dursun PhD, Director of the WSDAC Center, who greeted those present and gave an introductory speech for the Webinar. Majkić-Dursun pointed out that the impact of climate change on the quality of water resources is insufficiently covered in national documents, but that the situation is similar in the world.



**Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO**



**World Wide Fund for Nature Adria-Serbia**



**Serbian National Commission for UNESCO**  
**Komisija Republike Srbije za saradnju sa Uneskom**

United Nations Educational, Scientific and Cultural Organization  
Organizacija za obrazovanje, nauku i kulturu Ujedinjenih nacija

The fact is that the United Nations World Water Development Reports 2019, 2020 indicate increasing water needs, unequal access to clean drinking water and sanitation, which will pose an additional challenge due to expected climate change.

After her presentation, on behalf of the Commission of the Republic of Serbia for Cooperation with UNESCO, Aleksandra Kovač, Secretary General of the Commission, addressed the participants. Ms. Kovac provided the participants with information related to the work of the United Nations and UNESCO in the field of climate change and stressed the importance of the UNESCO network in the field of water (UNESCO families in the field of water). She also pointed out the fact that the UN declared the period 2021-2030 as the decade of ocean science, with the aim of encouraging cooperation and scientific research on the "lungs" of the planet, which has undergone numerous and degrading changes. Considering that the Webinar was also attended by representatives of the UNESCO Network of Protected Natural Resources in the Republic of Serbia, IRTCUD and the National Committee for IHP, the importance of networking the UNESCO network at the national level was emphasized.

After Ms. Kovač's presentation, Ms. Duška Dimović addressed on behalf of WWF Adria and presented the project "Climate Pact for Impact" which is implemented from a donation provided by the Government of Sweden, and within which this Webinar was organized. The aim of this project is to connect different actors in society, different interest groups, professional and expert associations, young and interested citizens to raise the general social and individual level of understanding of the causes and importance of climate change and raise citizens' awareness of how they can reduce the devastating impact of these changes on the survival of the planet and future generations on it. Therefore, she pointed out the fact that this workshop is a way for us all to connect. Ms. Dimović emphasized the importance of raising the issue of the impact of climate change on the quality of surface waters and dependent ecosystems, which is not given enough attention both at the international and national level. Education and learning is one of the missions of UNESCO, and it presented available online courses (Longer and shorter course on Climate Change risks and challenges) that are available to all interested, as well as interactive courses that deal with terminology related to climate change available at the link: [wwfadapt.org](http://wwfadapt.org).

Within the first block, the next presentation on the topic "Climate change and activities related to climate change at the national level" was held by prof. Vladimir Đurđević Phd from the Faculty of Physics, University of Belgrade. Prof. Đurđević pointed out that the only document that has the force of national policy is the signed Paris Agreement from 2015. Other documents are mostly in the stages of finalization or adoption, and gave an overview of:



**Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO**



**World Wide Fund for Nature Adria-Serbia**



**Serbian National Commission for UNESCO**

**Komisija Republike Srbije za saradnju sa Uneskom**

United Nations Educational, Scientific and Cultural Organization  
Organizacija za obrazovanje, nauku i kulturu Ujedinjenih nacija

National Reports (National Communications) according to the UNFCCC (First from 2009/10 and second from 2016/17 and third in the final phase), then Biennial Reports on Emissions (BUR) from the UNFCCC (the first from 2016 and the second in the final phase), NDC UNFCCC (under implementation), as well as the Low Carbon Development Strategy (under adoption). It was stated that the adoption of the Law on Climate Change is expected in the coming days. Prof. Đurđević also mentioned documents / studies related to climate change that have been implemented at the national level as well as National Plans on Adaptation to Climate Change. The last document signed regarding climate change is the Sofia Declaration, in November 2020. Professor Đurđević pointed out that in the future adaptation plans, which should become more ambitious, many more experts and funds should be included. We need a legal and institutional framework, but for their faster adoption, prof. Đurđević emphasizes the necessity of deviating from the current energy policy, i.e. accepting the energy sector to reduce gas emissions, which is very difficult given the significant dependence on lignite in electricity production. This transformation of the transition from the use of coal to renewable energy sources from the aspect of climate change is the only one that is sustainable, and in the coming decades this production will certainly become unprofitable.

Presentation of prof. Đurđević was followed by Ms. Danijela Božanić, who pointed out that National Communications are reports that show the current situation and not national policies, and they do not create state policy. She agreed with prof. Đurđević that a national policy is necessary for the country to have a direction in terms of climate change. Emissions trading is not possible at the moment because the European Union does not see us as part of its system until the moment of entry, but that does not mean that we cannot do something since in June 2021 the EU will adopt a document defining the Carbon Border Adjustment Mechanism which will be implemented in 2023.

Professor Prvoslav Marjanović PhD, from the "Jaroslav Černi" Water Institute / WSDAC, held a presentation on "The impact of climate change on surface water quality in the Republic of Serbia and recommendations." Prof. Marjanović pointed out the fact that climate change is already happening and that we need measures immediately, that is, we need adaptation measures. Professor Marjanović pointed out that 80-90% of financial resources are going to change the trend, but it is necessary to allocate much more funds for adaptation to climate change that is happening now. The professor pointed out that climate change will be reflected as pressures on water quality and quantity, then as causes of pollutant emissions more or less in relation to the "normal" state, and these pressures will first produce effects on ecosystems, but also on resources that are products of these ecosystems. Quality water as a resource is the result of the interaction of nature and climate, and changes significantly due to climate change, through reduced flow in watercourses, higher pollution, higher concentrations of pollutants in the resource, which leads to difficult use of water resources for various purposes. Increased temperature changes the thermal structure of aquatic ecosystems, especially in lakes and reservoirs. Prof. Marjanović pointed out that quality



**Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO**



**World Wide Fund for Nature Adria-Serbia**



United Nations  
Educational, Scientific and  
Cultural Organization  
Organizacija  
za obrazovanje,  
nauku i kulturu  
Ujedinjenih nacija

**Serbian  
National Commission  
for UNESCO**

**Komisija Republike  
Srbije za saradnju  
sa Uneskom**

drinking water should be delivered to every user, but clean effluent from wastewater treatment devices should also be delivered. He emphasized the fact that the impact of climate change on the quality of water resources has been very little processed in the world and in our country. One of the facts is that, in addition to long series of measured water temperatures, a long period of measuring various quality parameters is necessary, which are unlike the temperature, measured in the last 30 years, where the number of measuring profiles decreases every year. The lack of data is evident, so we do not have the ability to establish a strong link between climate change and quality, which leads to the inability to predict the impact of climate change. Prof. Marjanović gave the example of Lake Tahoe in the USA, and then the example of cyanobacterial blooms in the Vrutci reservoir in Serbia. He also showed a trend of increasing surface water temperature of the Danube river at five stations along watercourse, where a trend of increasing surface water temperature is noticeable. The Vrutci reservoir was threatened by the blooming of cyanobacteria in 2014, which may have occurred as a result of the impact of climate change, although an unambiguous link cannot be made. As a consequence of the appearance of cyanotoxins, there was an interruption in the water supply of Užice for a long period of time. After 5 years, facility was made that can solve this problem, and prof. Marjanović points out that we also need to be technologically ready to face the effects of climate change. Analyzing the countries in the Danube basin, he showed that the strategies of countries in terms of resources they use for water supply differ. Some countries are switching to increased use of groundwater resources, while others are opting for the increased use of surface water, which may make them a little more vulnerable to the impact of climate change. The professor changed his personal opinion that, according to him, there are three independent systems of adaptation to climate change: system of adaptation and response of the system of water services to climate change, system of conservation of natural habitats, specially protected areas and ecological networks and finally, system of adaptation and response to climate change in the field of other activities. The professor stressed that it is necessary to exchange knowledge, include competent experts and work on education in order to jointly fight the effects of climate change. After presentations, a panel discussion was opened, moderated by Miodrag Milovanović, from the Jaroslav Černi Water Institute / WSDAC.

Dejan Dimkić, from the Jaroslav Černi Water Institute / WSDAC, stated the importance of preserving existing water sources and potential areas for future water supply sources. Dimkić emphasized the importance of the price of water. The current price is still low, and the transition to the economic one would enable less exploitation of the system. The lack of money in the water sector is evident. It is necessary to reduce losses in water supply systems, for which there is significant room for improvement, which would also reduce the pressure on resources. In order to solve part of the problem, it is necessary to allocate significant financial resources and investments are small. Dimkić stated that there is knowledge but not enough financial resources to solve all the problems. The attitude of local government in certain offered solutions is very important and cooperation between municipalities is



**Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO**



**World Wide Fund for Nature Adria-Serbia**



**Serbian National Commission for UNESCO**

**Komisija Republike Srbije za saradnju sa Uneskom**

United Nations Educational, Scientific and Cultural Organization  
Organizacija za obrazovanje, nauku i kulturu Ujedinjenih nacija

---

necessary. He also noted that when talking about water, it might be better to use the term global change.

Professor Gordana Subakov PhD, from the Faculty of Biology, University of Belgrade, pointed out that the curriculum change in the educational system of primary and secondary schools has been completed, and climate change is a mandatory topic that children will learn from next year. On the other hand, she pointed out that funding for science and research is decreasing, so the question is how to conduct the necessary monitoring and monitor the effects of climate change in the future. The World Health Organization is looking for the detection of only one cyanotoxin, and there are hundreds of them, so the big question is how to find the means to test them. Prof. Subakov mentioned that our lakes are rich in nutrients, which encourages blooming. There is no real monitoring and no financial resources to carry it out. Due to rising air temperatures and climate change, lake blooms and reservoirs are expected to occur more frequently in the future. There are indications that blooming can be expected soon in the Stubo-Rovni reservoir, and the water supply of five cities is planned from this accumulation. Cyanobacteria which are characteristic of Africa appeared in our country in 2008, and now they have been detected in shallow ponds and lakes throughout Vojvodina. The professor pointed out that natural resources must be preserved.

Dragana Milovanović, an independent expert, stressed that the NEXUS Drina project is currently being implemented and that cooperation and exchange of information through the participation of a wider circle of experts is necessary. The UN has launched NEXUS projects and is holding national meetings and updating data. Colleague Milovanović offered to submit a Concept Note for the NEXUS Drina project, and if there are any interested parties, to contact for more detailed information.

Jovana Rašeta Bastić, Secretariat of the Sava Commission, emphasized that the Sava Commission has developed a platform for data exchange in the Sava River Basin, SAVA HIS and SAVA GIS which are publicly available. The Sava Commission is also intensively dealing with climate change in the Sava River Basin, and she informed the participants that the document "Framework for Adaptation to Climate Change in the Sava River Basin" has been adopted.

Marko Tucakov, from the Provincial Institute for Nature Protection, introduced the attendees to the realization of the Bačko Podunavlje project. In the future, the proclamation of a large protected natural asset is expected, which will cover the territory of five countries (Mura-Drava-Danube). Colleague Tucakov emphasized the importance of protecting wetlands, especially due to the expected climate change.

Professor Jovan Despotović PhD, National IHP Committee, greeted those present on behalf of the National Committee for IHP (International Hydrology Program) UNESCO. Prof.





**Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO**



**World Wide Fund for Nature Adria-Serbia**



**Serbian National Commission for UNESCO**

**Komisija Republike Srbije za saradnju sa Uneskom**

United Nations Educational, Scientific and Cultural Organization  
Organizacija za obrazovanje, nauku i kulturu Ujedinjenih nacija

Despotović proposed that a conference to be organized on the topic of climate change and water resources, which would cover various issues that must be connected. The professor mentioned that such an event can be organized during the celebration of the International Water Day, at the end of March.

### CONCLUSIONS AND RECOMMENDATIONS:

1. Cross-sectoral, interdisciplinary and integrative approach is necessary for the analysis of the impact of climate change on water resources and dependent ecosystems
2. Stronger cooperation, involvement of experts from different professions and exchange of information is necessary
3. Databases are needed to monitor long-term trends
4. National legislation and a strategic adaptation plan are necessary legal acts that would regulate the issue of the national response to climate change. Legal acts need to be adopted faster
5. Significant financial resources are needed to conduct research, monitoring and the effects of climate change on water resources and dependent ecosystems
6. Education is an important factor in understanding the impact of climate change
7. Networking at national, regional and international level is needed

Report compiled by

Brankica Majkić-Dursun, PhD

### ANNEX 1: LIST OF WEBINAR PARTICIPANTS

No.	Name and Surname	Company/Institution
1.	Prof. Vladimir Đurđević PhD	Faculty of Physics, University of Belgrade
2.	Prof. Prvoslav Marjanović PhD	"Jaroslav Černi" Water Institute/WSDAC
3.	Aleksandra Kovač	Ministry of Foreign Affairs / Commission of the Republic of Serbia for Cooperation with UNESCO
4.	Ana Repac	Ministry of Environmental Protection
5.	Nataša Lalić	Ministry of Environmental Protection
6.	Mališa Mladenović	Ministry of Environmental Protection



Serbian  
National Commission  
for UNESCO  
Komisija Republike  
Srbije za saradnju  
sa Uneskom

Water for Sustainable Development and  
Adaptation to Climate Change under the  
auspices of UNESCO

World Wide Fund for  
Nature Adria-Serbia

7.	Duška Dimović	WWF Adria
8.	Brankica Majkić-Dursun, PhD	“Jaroslav Černi” Water Institute / WSDAC
9.	Miodrag Milovanović	“Jaroslav Černi” Water Institute / WSDAC
10.	Prof. Gordana Subakov Simić, PhD	Faculty of Biology, University of Belgrade
11.	Prof. Jovan Despotović, PhD	IHP National Committee
12.	Prof. Aleksandar Đukić, PhD	IRTCUD, International Research and Training Centre for Urban Drainage, Unesco Centar 2 kategorije
13.	Prof. Tina Dašić, PhD	Faculty of Civil Engineering, University of Belgrade
14.	Marko Tucakov	Institute for Nature Conservation of Vojvodina Province
15.	Gordana Jančić	Srbijašume
16.	Branka Popović	Srbijavode
17.	Nevenka Nikolić	Vode Vojvodine
18.	Jovana Rašeta Bastić	Secretariat of the Sava Commission, Zagreb
19.	Danijela Božanić	Independent consultant
20.	Dragana Milovanović	Independent consultant NEXUS Drina project
21.	Iva Svilar	WWF Adria
22.	Nikola Matović	WWF Adria
23.	Dragana Ninković	“Jaroslav Černi” Water Institute / WSDAC
24.	Ljiljana Marjanović	“Jaroslav Černi” Water Institute / WSDAC
25.	Nenad Milenković	“Jaroslav Černi” Water Institute / WSDAC
26.	Dušan Kostić	“Jaroslav Černi” Water Institute / WSDAC
27.	Lazar Ignjatović	“Jaroslav Černi” Water Institute / WSDAC
28.	Dejan Dimkić	“Jaroslav Černi” Water Institute / WSDAC
29.	Zoran Simić	“Jaroslav Černi” Water Institute / WSDAC
30.	Vesna Tripković	“Jaroslav Černi” Water Institute / WSDAC



Water for Sustainable Development and  
Adaptation to Climate Change under the  
auspices of UNESCO



Serbian  
National Commission  
for UNESCO

Komisija Republike  
Srbije za saradnju  
sa Uneskom

United Nations  
Educational, Scientific and  
Cultural Organization  
Organizacija  
za obrazovanje,  
nauku i kulturu  
Ujedinjenih nacija

To Whom it May Concern,

We would like to inform you that on February 25, 2021 we will be holding Webinar on **"Impacts of climate change on surface water quality in the Republic of Serbia and Recommendations"** organized jointly by the Water for Sustainable Development and Adaptation to Climate Change under the auspices of UNESCO (WSDAC) and the World Wide Fund for Nature (WWF Adria-Serbia), with the support of the Commission of the Republic of Serbia for Cooperation with UNESCO.

WWF and WSDAC recognized the importance of exchanging information, knowledge and experience on climate change, as well as the importance of strengthening cooperation between various institutions at the national level, including members of the UNESCO network in Serbia.

Climate change will affect the availability, quality and quantity of water for basic human needs, threatening basic human rights to access clean water and sanitation worldwide, as well as ecosystems and biodiversity of aquatic and wetland habitats. Changing the water cycle will also pose risks to energy production, food security, human health, economic development and poverty reduction, which will seriously jeopardize the achievement of sustainable development goals.

### Webinar agenda

**Date: February 25, 2021**

**Time: 10-12 h**

Platform: TEAMS platform

#### **Schedule:**

9:50-10:00 Registration of participants on the TEAMS platform

10:00-10:10 Welcome speech and goals of the Webinar (Brankica Majkić-Dursun PhD, Director of the WSDAC Center)

10:10-10:15 Welcome speech by the representative of the Commission for Cooperation with UNESCO of the Republic of Serbia (Aleksandra Kovač, Secretary General)

10:15-10:25 Review of the project "Climate Pact for Impact" (Duška Dimović, WWF Adria-Serbia)



Water for Sustainable Development and  
Adaptation to Climate Change under the  
auspices of UNESCO



United Nations  
Educational, Scientific and  
Cultural Organization  
Organizacija  
za obrazovanje,  
nauku i kulturu  
Ujedinjenih nacija

Serbian  
National Commission  
for UNESCO

Komisija Republike  
Srbije za saradnju  
sa Uneskom

---

10:25-10:45 Climate change and activities related to climate change at the national level (Prof. Vladimir Đurđević, Faculty of Physics, University of Belgrade)

10:45-11:15 Impact of climate change on surface water quality in the Republic of Serbia and recommendations (Prof. Prvoslav Marjanović PhD, "Jaroslav Černi" Water Institute / WSDAC Center)

11:15-11:45 Panel discussion (moderator: Miodrag Milovanović)

11:45-12:00 Conclusions

The webinar will be held through the **TEAMS platform**. A link will be sent to all registered participants, so you do not need to have the platform installed on your computers.

For the purposes of organizing the Webinar, you need to submit your e-mail address to which you will receive a link to the Webinar. The application deadline is February 23, 2021 until 16:00. Please send your e-mail addresses to e-mail: [brankica.majkic-dursun@jcerni.rs](mailto:brankica.majkic-dursun@jcerni.rs)

The webinar will be recorded for reporting and use purposes to promote the activity.

Current activities in various fields, your opinion and suggestions for future cooperation are of great importance to us.

That is why we invite you to participate in the Webinar and panel discussion.

Best regards,

Brankica Majkić-Dursun, PhD

---

Duška Dimović

