



# SWARM

## Erasmus+ project

This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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## Basic Information

- **Contract number** 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP
- **Project acronym** SWARM
- **Project name** *Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders*
- **Project duration** 15th November 2018 - 14th May 2022
- **Programme** Erasmus+ Call for Proposals EAC/A05/2017
- **Total cost** 931,289.00 €
- **Coordinator** University of Niš, Serbia  
Univerzitetski trg 2, 18000 Niš, Serbia
- **Project website** [www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)
- **Project e-mail** [swarmuni@gmail.com](mailto:swarmuni@gmail.com)



Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders



## Motivation

One of the major environmental and sustainability challenges of the 21st century is **preserving and ensuring the most precious resource – water**. Water as the basic resource incorporated into the functioning of different sectors requires an **innovative, interdisciplinary, structural, and transboundary approach** - strong coordination and cooperation across countries and across sectors. Carefully manage of this **limited resource** is urgent due to plenty of statistical facts.

WB countries should above all **develop new or improve the existing education** in this field, to **raise technical capacity** and accomplish the creation of **more efficient systems** in the field of **water resources management**.

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## Overall Broader Objective

**Education of experts** for water resources management in the Western Balkans (WB) **in line with the national and EU policies.**

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## Specific Objectives

- **Improve the level of competencies and skills in WB HEIs** by developing new and innovative master programmes in the field of water resources management (WRM) in line with the Bologna requirements and national accreditation standards
- **Design and implement seven new and up-to-date laboratories** in WB partner HEIs in cooperation with EU project partners
- **Develop and implement LLL courses for the water sector** in line with EU Water Framework Directive



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## Consortium – EU partners



*University of Natural Resources and Life Sciences, Vienna (BOKU, Austria)*



*Norwegian University of Life Sciences (NMBU, Norway)*



*Aristotle University of Thessaloniki (AUTH, Greece)*



*University of Architecture, Civil Engineering and Geodesy (UACEG, Bulgaria)*



*University of Rijeka, Faculty of Civil Engineering (UNIRIFCE, Croatia)*



*University of Lisboa (UL, Portugal)*



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## Consortium – WB partners



University of Niš (UNI, Serbia)



University of Novi Sad (UNS, Serbia)



University of Sarajevo (UNSA, Bosnia and Herzegovina)



Dzemail Bijedic University of Mostar (UNMO, Bosnia and Herzegovina)



University of Pristina in Kosovska Mitrovica (UPKM, Kosovo\*)



Academy of Applied Studies of Kosovo and Metohija (AASKM, Kosovo\*)



University of Montenegro (UoM, Montenegro)




Public Water Management Company "Vode Vojvodine" (PWMC VV, Serbia)



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## Consortium

### Associated partners



SOFIYSKA VODA AD



Association for Water Technology and Sanitary Engineering



Association Resource Aarhus center in B&H



Regionalni vodovod Crnogorsko primorje



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## Work Packages

- **Analysis of water resources management in the Western Balkan region**
- **Leader:** University of Natural Resources and Life Sciences, Vienna (BOKU)

Preparation  
WP1

- **Development of competence-based curricula aligned with EU trends**
- **Leader:** Aristotle University of Thessaloniki (ATh)

Development  
WP2

- **Development of trainings for professionals in water sector**
- **Leader:** University of Pristina in Kosovska Mitrovica (UPKM)

Development  
WP3

- **Implementation of developed master curricula and trainings**
- **Leader:** Norwegian University of Life Sciences (NMBU)

Development  
WP4

- **Quality assurance and monitoring**
- **Leader:** Universidade de Lisboa (UL)

Quality Plan  
WP5

- **Dissemination and Exploitation**
- **Leader:** University of Niš (UNI)

Dissemination &  
Exploitation WP6

- **Project management**
- **Leader:** University of Niš (UNI)

Management  
WP7

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## Outputs

- ✓ **Report on WB regional issues related to WRM**
- ✓ **Report on EU water policies and innovation and EU recommendations and legislation in water sector**
- ✓ **Report on master curricula related to WRM in EU and WB partner countries**
- ✓ **Workshop on innovative practices in the EU water sector: barriers and opportunities**
- ✓ **Report on innovative practices for WRM in EU**



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## Outputs

- ✓ Catalogue of competencies
- ✓ Report on development of specific competencies and learning outcomes of curricula
- ✓ Theme-based training of teaching staff for acquiring new teaching and learning methods (UACEG, NMBU, UNIRIFCE, AUTH, UL, BOKU)
- ✓ 7 laboratories equipped
- ✓ Report on LLL courses for professionals in EU water sector
- ✓ Survey of water sector needs in WB
- ✓ Register of companies in the field of WRM in the WB countries
- ✓ Handbook for training in water resources management

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## Theme-based training of teaching staff

- ✓ Six three-day training organised
- ✓ 92 WB teaching staff trained
- ✓ 5 study visits organised
- ✓ 7 video materials recorded



Report on acquired teaching and learning methods created >

<http://www.swarm.ni.ac.rs/activities?id=26>



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## Theme-based training of teaching staff

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## ✓ 7 Laboratories equipped

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# swarm Handbook for the training in WRM

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<http://www.swarm.ni.ac.rs/activities?id=53>



Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders

## Webinar Frontiers in Water Resources Management Tuesday, 5th May 2020

9:00 Greetings and Welcome  
Milan Gođić, University of Ni  
Zakhar Maletskiy, Norwegian University of Life Sciences

9:05 Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders (SWARM)  
Milan Gođić, University of Ni

9:15 Perception of Strengths and Weaknesses towards Improving Water Resources Management in the Western Balkans  
Michael Trithart, University of Natural Resources and Life Sciences, Vienna

9:30 Water Resources Management Issues in Bosnia and Herzegovina  
Evelina Hadžić, University of Sarajevo

9:40 Analyse of water sector needs in the Western Balkans  
Milan Gođić, University of Ni

9:50 Water Resource Management in Cold Climate  
Hanne Rattaveera, Norwegian University of Life Sciences

10:10 Flood Risk scenarios for high frequency/low damage events and Civil Protection actions  
Giuseppe Tio-Azuba, University of Messina

10:30 Integrated Quantitative Assessment of Climate Change Impacts on Mediterranean Coastal Water Resources and Socio-Economic Vulnerability Mapping  
Charalambos Skoulikaris, Aristotle University of Thessaloniki

10:50 Final Remarks  
Zakhar Maletskiy, Norwegian University of Life Sciences

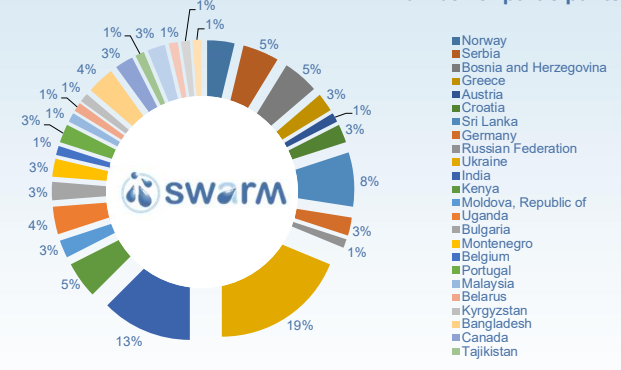
[www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)

## Webinar – Frontiers in WRM

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- ✓ 6 panelists
- ✓ 75 participants from 28 countries

### Number of participants



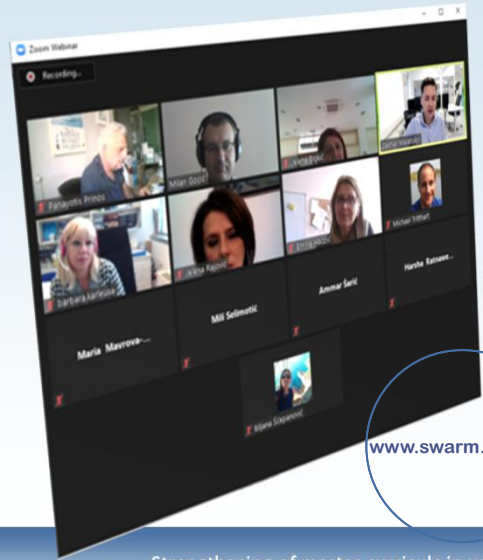
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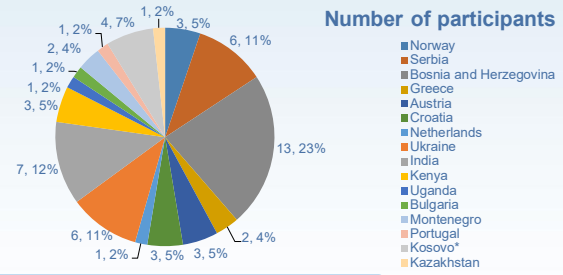
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# swarm Inter-project coaching meeting



- ✓ 18 panelists
- ✓ 57 participants from 16 countries
- ✓ Two main topics:
  - Innovation in teaching and learning methods
  - Achieved synergy with a non-academic sector

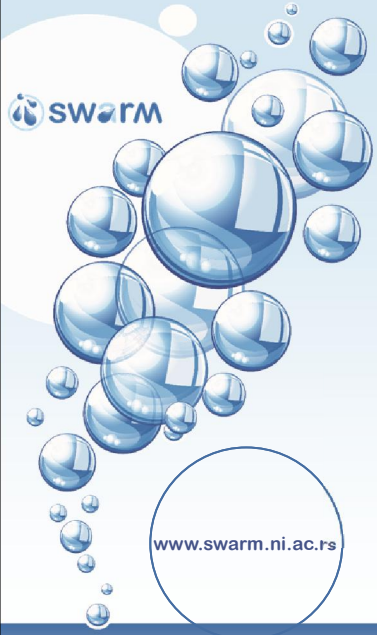


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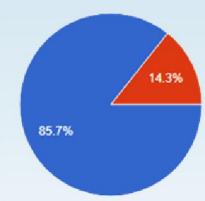
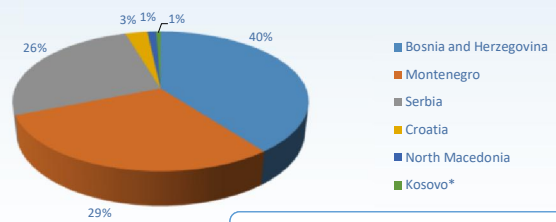


## Training in water resources management



- ✓ three-day online training
- ✓ 14 panelists
- ✓ 174 participants from 6 WB countries
- ✓ and 45 water related companies
- ✓ Topics related to the professionals in the water sector
- ✓ Academic and panelists from the water sector

Overall impression



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<http://www.swarm.ni.ac.rs/activities?id=75>



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- ✓ Dates: **September 23-24, 2021**
- ✓ Location: **Novi Sad, Serbia**
- ✓ Organizer: **Faculty of Technical Sciences**
- ✓ Supporter: **SWARM Erasmus+ Programme**

Speciality of participants

Speciality	Percentage
Water Management	39.5%
Water Treatment	19.8%
Water Monitoring	14.8%
Other	25.9%

<http://www.swarm.ni.ac.rs/symposium>

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