

# REPORT ON REALIZED DISSEMINATION ACTIVITIES

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University of Nis



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

## PROJECT INFO

Project title	Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders
Project acronym	SWARM
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Funding scheme	Erasmus+ Capacity building in the field of higher education
Web address	www.swarm.ni.ac.rs
Coordination institution	University of Nis
Project duration	15 November 2018 – 14 May 2022

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## List of abbreviations

AASKM	Academy of Applied Sciences Kosovo and Metohija
AUTH	Aristotle University of Thessaloniki
BOKU	University of Natural Resources and Life Sciences, Vienna
CBHE	Capacity Building in Higher Education
EACEA	Education, Audiovisual and Culture Executive Agency
HEI	Higher Education Institution
LFM	Logical Framework Matrix
NEO	National Erasmus Office
NMBU	Norwegian University of Life Sciences, Norway
PWMC VV	Public Water Management Company "Vode Vojvodine"
SWARM	Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders
UACEG	University of Architecture, Civil Engineering and Geodesy, Bulgaria
UNI	University of Nis, Serbia
UL	University of Lisbon, Portugal
UoM	University of Montenegro
UNIRIFCE	University of Rijeka, Croatia
UNMO	Dzemal Bijedic University of Mostar
UNS	University of Novi Sad
UNSA	University of Sarajevo
UPKM	University of Pristina in Kosovska Mitrovica
WB	Western Balkan
WP	Work package
WRM	Water Resources Management



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## 1. Introduction

Report on realized dissemination activities summarizes information regarding realized dissemination activities for the whole period of project realisation in the framework of the WP6 “Dissemination and exploitation” and activity A6.2 “Development of project website and promotional materials” of the SWARM project - Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders, co-funded by the Erasmus+ Programme of the European Union under Grant Agreement no. 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP.

The activities were realized in line with the adopted Dissemination and Exploitation Plan by the Steering Committee describing how promotional material, SWARM results and activities will be used to promote and engage with target groups in order to increase awareness of the SWARM results.

Dissemination is one of the award criteria on which the application was assessed. WP6 (Dissemination and Exploitation) runs in parallel with the other WPs over the project lifetime. The Dissemination and Exploitation Plan focused on defining comprehensive and consistent project dissemination and exploitation strategy, which ensured maximum visibility of project results during and beyond the project lifetime.

Efficient communication and timely information delivery of project activities ensured short- and long-term success of the project which was a core interest of the SWARM project. Therefore, dissemination activities were fundamental in order to create project visibility and reach various target groups.

The applied dissemination methodology during the project realization included phases that form the processes to ensure efficient and sustainable information sharing in SWARM even beyond the lifespan of the project. SWARM dissemination methodology had six basic questions to building blocks for a coherent dissemination approach:

- 1) TO WHOM and WHERE to disseminate,
- 2) WHAT to disseminate,
- 3) WHO to disseminate,
- 4) WHEN to disseminate,
- 5) HOW to disseminate, and
- 6) WHY to disseminate (expected achievements).

The created clear message of SWARM was supported by the creation of dissemination materials and activities such as social media updates, a dedicated website, articles, newsletters, mailing lists, strong branding through logos and document style, project presentations, and workshop participation.

Internal and external communication activities provided the relationship between operational work packages and stakeholders to ensure the building of clear SWARM messages. All communication and dissemination activities and related material acknowledged Commission guidelines. This ensured

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that information shared on SWARM was in line with the norms of the EU and Commission and promoted the set standards of best practice.

The dissemination objectives of SWARM were to:

- identify target groups at different territorial levels: national, regional, EU,
- identify the communication needs of different target groups,
- establish core messages of the project tailored to the target groups,
- identify dissemination methods - tools and channels for the public in general,
- disseminate the results, solutions and knowledge collected within a project to the general audience,
- define concrete dissemination activities and a time scheduling of dissemination activities,
- define partners' responsibilities in dissemination activities,
- define indicators to assess dissemination activities.

The objectives for the external communications and dissemination were to:

- ensure efficient communication,
- create project visibility,
- reach various target groups,
- guarantee the sustainability of the project results by implementing the Dissemination and Exploitation Plan.

The objectives for internal communications were to:

- monitor the status of SWARM developments in order to keep WPs aware of the project progress,
- ensure coherent internal communication between WPs,
- make relevant internal information available also to external communication,
- support delivery of the SWARM results according to the work plan mentioned in the project proposal.

To achieve the dissemination objectives, the SWARM activities grouped in work plan were the following:

- Development of the project website and promotional materials,
- Info days for student enrolment,
- Roundtables with the non-academic sector,
- Symposium for promoting WRM in WB,
- Webinar "Frontiers in Water Resources Management",
- Workshop on the sustainability of the SWARM results,
- Final conference.

All planned dissemination activities met the requirements for dissemination of the Grant agreement i.e. to make project results visible, all produced material to be available and to use the correct logo and disclaimer.

The main purpose of SWARM dissemination activities was to achieve the involvement of all relevant stakeholders and to provide updated information of project results. The dissemination activities were therefore focused on:

- making accessible tangible SWARM products (outputs),
- raising awareness and extend the impact (SWARM outcomes).

The scope of the project and the importance of mentioned activities resulted in a variety of target groups:

- students of bachelor studies related to WRM,
- WB teaching staff,
- representatives of bodies and agencies for WRM, and
- engineers from the non-academic and water sector in WB countries.

Dissemination activities related to new/improved master curricula and organization of winter/summer schools involved students and teaching staff. Promotion of new master curricula was done by using promotional leaflets for master curricula, brochures for master curricula and spreading information through project website, HEIs websites and social networks. Promotions were organized for the WB non-partner HEIs in order to promote master studies in the field of WRM during info days. Promotions in HEIs were performed by WB teachers involved in the project implementation. All events were documented and displayed on the project website.

The key messages were:

- Water resources became the greatest global challenge and an indispensable requirement for sustainable development,
- New educated professionals in the field of water resources management,
- New LLL courses for enhancing the skills of personnel in the water sector contribute to using of new and innovative methods in solving problems in the water sector.

The following keywords were used in dissemination materials:

- Strengthening of educational base: modern curriculum, harmonization, competencies, Bologna, interdisciplinary, innovative, master, innovative learning,
- Enhancing professionals' in water sector awareness and skills: drinking water, pollution, sewage, purification, watershed, lack of water, water shortage, discharge, drainage, irrigation, irrigation, lifelong learning, trainings, skills.

All materials are freely available at the SWARM website ([www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)).

## 2. Promotional materials and channels

Different types of dissemination tools were created:

- SWARM website and social media such as Instagram and Facebook (used for online dissemination),
- project publications and promotional materials such as flyer, brochure, poster, videos, newsletters, newspapers' and magazines' articles (used for offline dissemination),
- dissemination events at institutional, national, regional or international levels with possible participation of external stakeholders,
- participation in radio and TV programmes.

The SWARM dissemination tools and their purpose are presented in Table 1.

**Table 1** Swarm dissemination tools and their purpose

Tool	Purpose
Project website	- Awareness - Inform - Engage - Promote
Newsletter	- Awareness - Inform
Flyer/brochure	- Awareness - Promote
Poster/roll-up	- Promote
Pencil/notebook/folder	- Promote
Banner	- Promote
Newspaper/magazine	- Awareness - Inform - Promote
Radio/television/video	- Awareness - Inform - Promote
Conferences/workshops/meetings	- Awareness - Inform - Engage - Promote
Presentation/publication	- Inform
Social network (Facebook, YouTube)	- Awareness - Inform - Engage - Promote

Communication materials and tools were developed to provide concrete support to dissemination activities. The primary, core tool for internal communication and information sharing was the project website (internal and external communications) and the online platform accessible via the project website (internal communications). For external communication, social media was heavily used, specifically Facebook.

The SWARM project logo was designed at the beginning of the project life cycle and used in all project documents:



Developed templates were used to bring a coherent visual image to all information produced on SWARM including official communication to the Commission, and presentations to wide audiences. Templates were used on every occasion when SWARM was presented or information on the project was shared. The templates were also provided in order to ease the communication inside the consortium ensuring coherent and smooth work flow. The templates were provided either in Windows Word Document or Power Point Document format.

The templates included three core elements that are always requested to be present when SWARM is presented: project logo, EU emblem and the official information requested by the Commission (disclaimer).

The following templates are developed:

- Annex DE1 – Word document template,
- Annex DE2 – Power Point presentation template,
- Annex DE3 – Dissemination activity form,
- Annex DE4 – Newsletter template.

All produced SWARM materials contained an acknowledgement of EU funding through the Erasmus+ Programme by using the European emblem (the 'EU flag') and the name of the European Union spelled out in full in all communication and promotional material and with the following text 'Co-funded by the Erasmus+ Programme of the European Union' next to the EU emblem.

Also, the following disclaimer was added to the inner pages of the publications:

*"The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein."*

## 2.1 SWARM project website

The SWARM project website ([www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)) is an important dissemination tool for the presentation of project results as well as a place where all the information on the project activities and other relevant data are being published. The website contains all information related to the project: description, objectives, outputs of the project, the list of the Consortium Members with their short presentations, Logical Framework Matrix (LFM) and Work plan documents, the contact details of the coordinator.

Development of the website and the continuously updated information will be ensured by the University of Nis (UNI). The website was developed at the early beginning of the project life cycle and

launched in December 2018. It was regularly updated with new information in order to inform all target groups about the project realization and achieved results.

Information about the SWARM project will be published in the languages of project partners i.e. English, Serbian, Bosnian, German, Bulgarian, Norwegian, Portuguese, and Greek.

All partners will regularly provide information for dissemination on the website. The website will be linked with all partners' websites and interested stakeholders.

The initial version of the SWARM project website structure consisted of 6 categories (Figure 1): (1) Home, (2) Project, (3) Activities, (4) News and Events, (5) Gallery, (6) Project management.



Figure 1 The initial version of the SWARM home page

The final version of the SWARM project website structure consisted of 8 categories (Figure 2): (1) Home, (2) Project, (3) Activities, (4) News and Events, (5) Gallery, (6) Symposium, (7) LLL courses and (8) Management.



The screenshot shows the SWARM project website homepage. At the top, there is the SWARM logo and the text "Co-funded by the Erasmus+ Programme of the European Union" with the European Union flag. Below this is the project title: "Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders". A navigation bar contains links for HOME, PROJECT, ACTIVITIES, NEWS & EVENTS, GALLERY, SYMPOSIUM, LLL COURSES, and MANAGEMENT. Social media icons for Facebook and YouTube are also present.

The main content area is divided into two columns. The left column is titled "ABOUT THE PROJECT" and features a grid of circular icons representing the participating countries: Serbia, Croatia, Bosnia and Herzegovina, Bulgaria, Austria, Greece, Norway, Portugal, and Montenegro. The right column is titled "UPCOMING EVENTS" and displays a calendar for April 2022. The calendar shows dates from 1st to 30th, with the 30th highlighted in red. Below the calendar is a "NEWSLETTER" section with a list of newsletter issues from June 2019 to July 2021.

## WELCOME TO THE OFFICIAL WEB SITE OF ERASMUS+ SWARM PROJECT

This is the official web site of Erasmus+ Capacity building in Higher Education project, titled:

**Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders (SWARM)**

Project number 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP.

### Disclaimer

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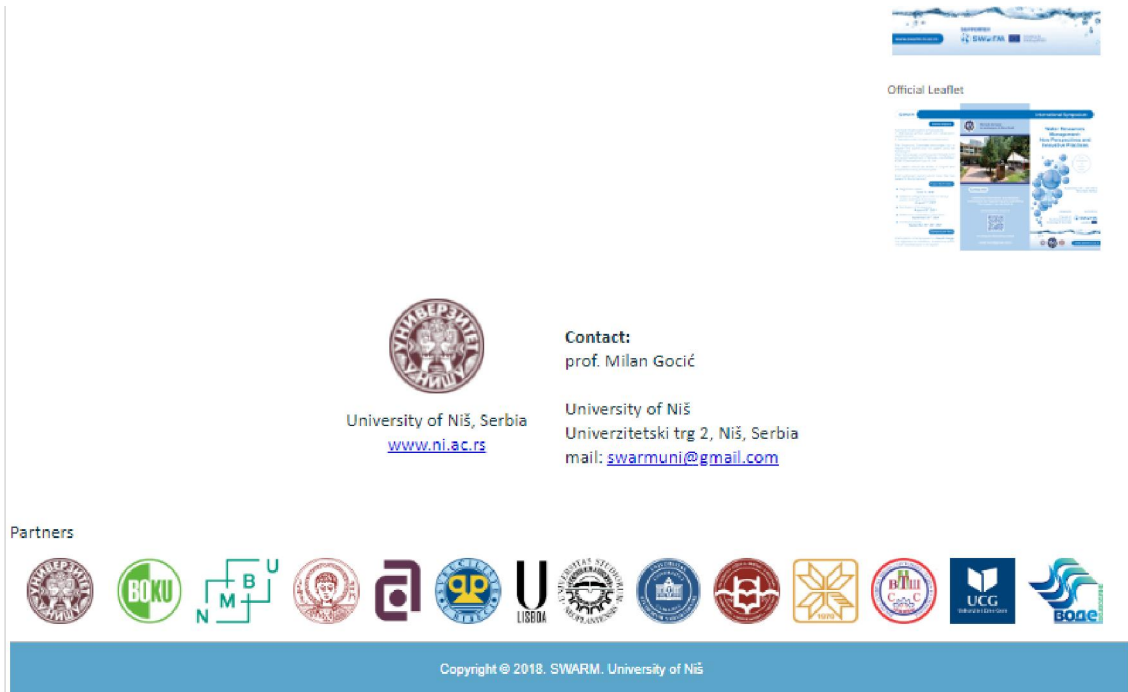
## INTERNATIONAL SYMPOSIUM

Water Resources Management:  
New Perspectives and Innovative Practices

Official Poster

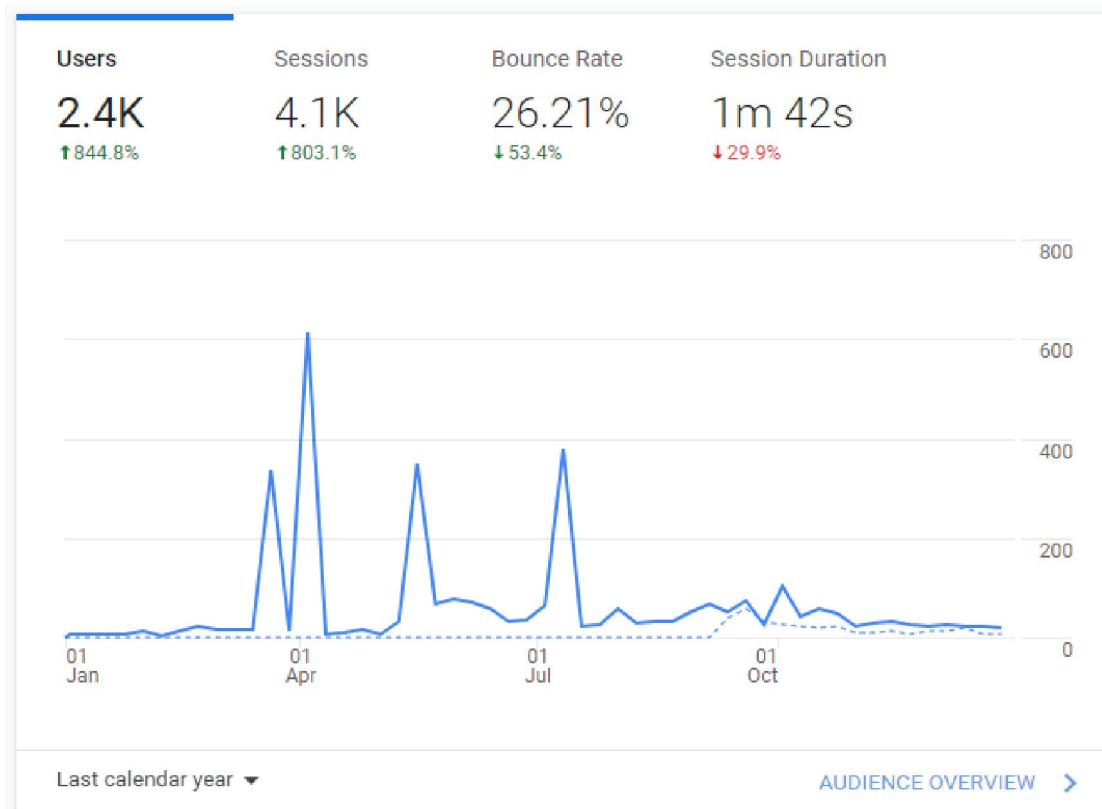






**Figure 2** The final version of the SWARM home page

### Google Analytics



**Figure 3** Number of users from 01 January to 31 December 2021



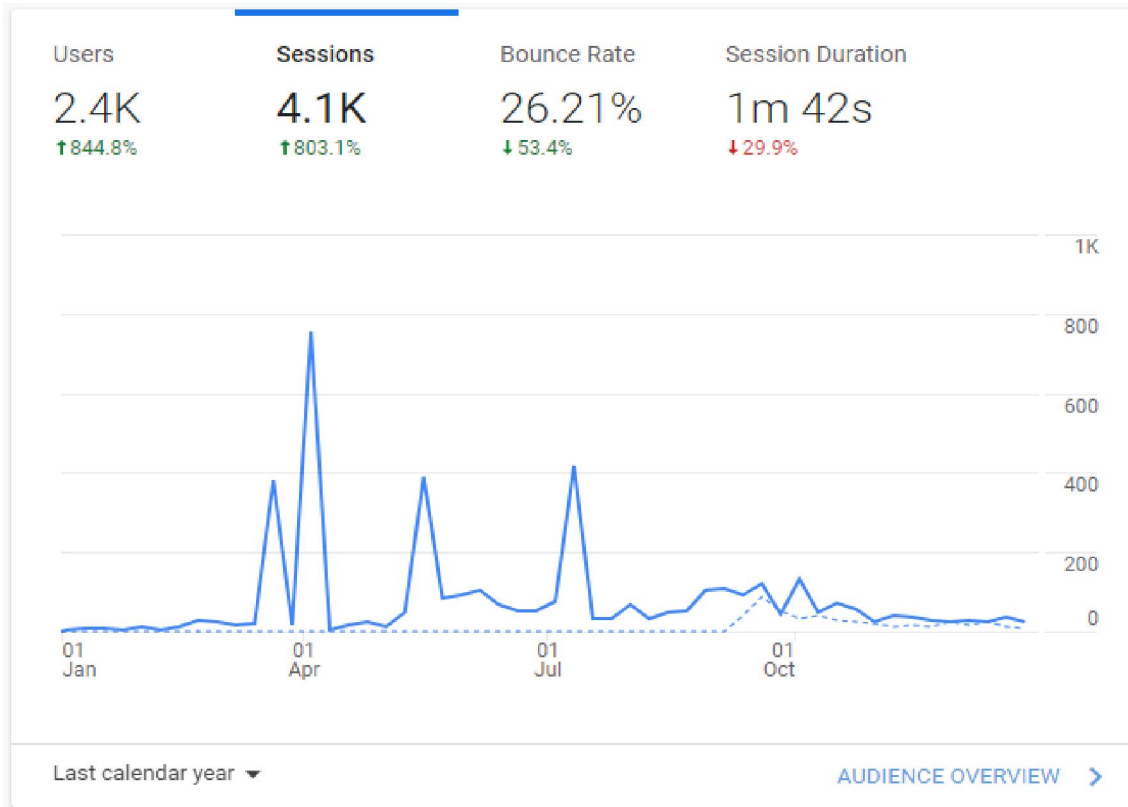


Figure 4 Number of sessions from 01 January to 31 December 2021



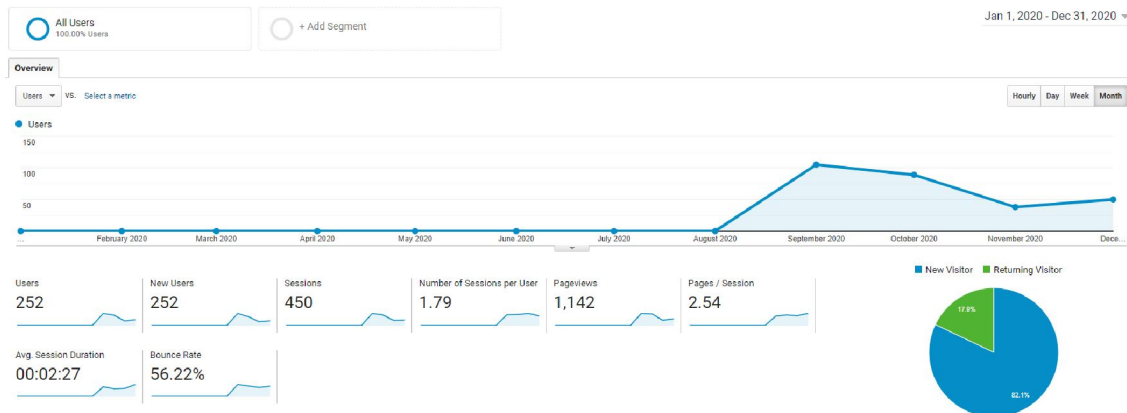
Figure 5 Bounce rate from 01 January to 31 December 2021












Figure 6 Session duration (1m 42s) from 01 January to 31 December 2021

### Audience overview

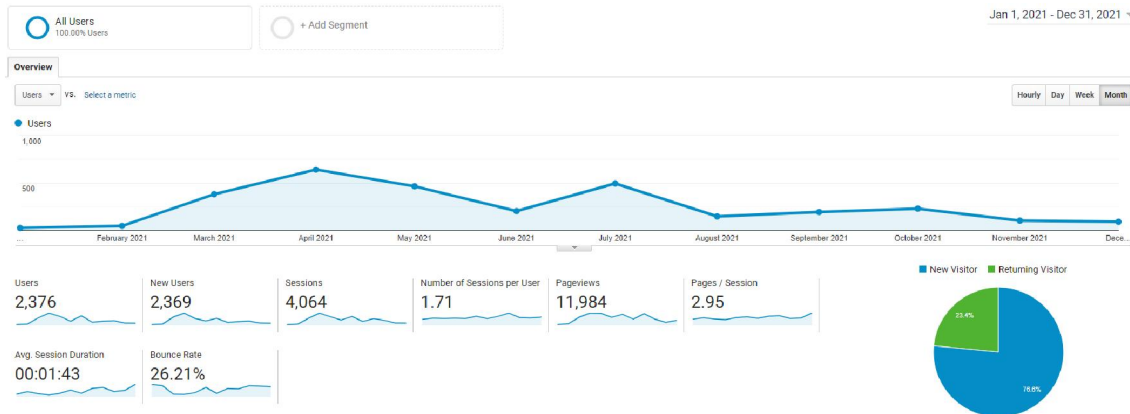
#### 1 January 2020 – 31 January 2020













Continent ?	Acquisition		
	Users ? ↓	New Users ?	Sessions ?
	252 % of Total: 100.00% (252)	252 % of Total: 100.00% (252)	450 % of Total: 100.00% (450)
1. Europe	190 (75.40%)	190 (75.40%)	381 (84.67%)
2. Americas	35 (13.89%)	35 (13.89%)	35 (7.78%)
3. Asia	20 (7.94%)	20 (7.94%)	22 (4.89%)
4. Africa	4 (1.59%)	4 (1.59%)	9 (2.00%)
5. Oceania	2 (0.79%)	2 (0.79%)	2 (0.44%)
6. (not set)	1 (0.40%)	1 (0.40%)	1 (0.22%)

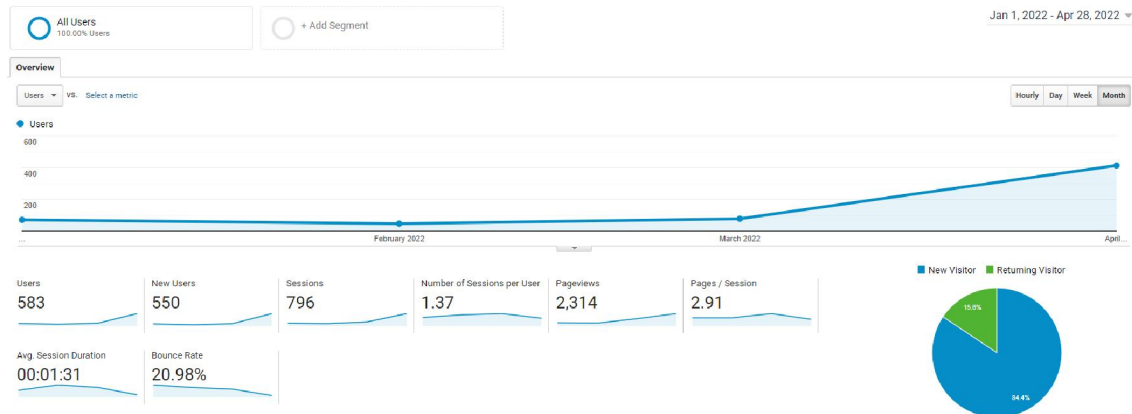
Country ?	Acquisition		
	Users ? ↓	New Users ?	Sessions ?
	190 % of Total: 75.40% (252)	190 % of Total: 75.40% (252)	381 % of Total: 84.67% (450)
1.  Serbia	70 (36.65%)	69 (36.32%)	201 (52.76%)
2.  Bosnia & Herzegovina	24 (12.57%)	24 (12.63%)	40 (10.50%)
3.  Montenegro	15 (7.85%)	15 (7.89%)	18 (4.72%)
4.  Croatia	13 (6.81%)	13 (6.84%)	18 (4.72%)
5.  Norway	11 (5.76%)	11 (5.79%)	25 (6.56%)
6. Kosovo	11 (5.76%)	11 (5.79%)	20 (5.25%)
7.  Netherlands	7 (3.66%)	7 (3.68%)	7 (1.84%)
8.  Greece	6 (3.14%)	6 (3.16%)	8 (2.10%)
9.  Ukraine	6 (3.14%)	6 (3.16%)	9 (2.36%)
10.  Austria	5 (2.62%)	5 (2.63%)	11 (2.89%)

## 1 January 2021 – 31 January 2021



Country ?	Acquisition		
	Users ? ↓	New Users ?	Sessions ?
	<b>2,376</b> % of Total: 100.00% (2,376)	<b>2,369</b> % of Total: 100.00% (2,369)	<b>4,064</b> % of Total: 100.00% (4,064)
1.  Serbia	<b>374</b> (15.56%)	367 (15.49%)	951 (23.40%)
2.  United States	<b>175</b> (7.28%)	175 (7.39%)	229 (5.63%)
3.  Bosnia & Herzegovina	<b>173</b> (7.20%)	171 (7.22%)	251 (6.18%)
4.  China	<b>90</b> (3.74%)	89 (3.76%)	<b>116</b> (2.85%)
5.  Montenegro	<b>78</b> (3.24%)	77 (3.25%)	<b>128</b> (3.15%)
6.  Japan	<b>60</b> (2.50%)	60 (2.53%)	82 (2.02%)
7.  Brazil	<b>59</b> (2.45%)	59 (2.49%)	93 (2.29%)
8.  India	<b>56</b> (2.33%)	55 (2.32%)	80 (1.97%)
9.  Germany	<b>51</b> (2.12%)	51 (2.15%)	69 (1.70%)
10.  Croatia	<b>48</b> (2.00%)	46 (1.94%)	<b>119</b> (2.93%)

1 January 2022 – 28 April 2022



Country ?	Acquisition		
	Users ? ↓	New Users ?	Sessions ?
	<b>583</b> % of Total: 100.00% (583)	<b>550</b> % of Total: 100.00% (550)	<b>796</b> % of Total: 100.00% (796)
1.  Serbia	<b>64</b> (10.87%)	54 (9.82%)	138 (17.34%)
2.  United States	<b>34</b> (5.77%)	33 (6.00%)	39 (4.90%)
3.  India	<b>26</b> (4.41%)	26 (4.73%)	27 (3.39%)
4.  Bosnia & Herzegovina	<b>23</b> (3.90%)	17 (3.09%)	40 (5.03%)
5.  China	<b>21</b> (3.57%)	21 (3.82%)	22 (2.76%)
6.  Montenegro	<b>18</b> (3.06%)	16 (2.91%)	30 (3.77%)
7.  Germany	<b>17</b> (2.89%)	16 (2.91%)	21 (2.64%)
8.  Spain	<b>15</b> (2.55%)	15 (2.73%)	15 (1.88%)
9.  Japan	<b>14</b> (2.38%)	14 (2.55%)	14 (1.76%)
10.  Brazil	<b>13</b> (2.21%)	13 (2.36%)	14 (1.76%)

Year	Users	New users	New visitor	Returning visitor
2020	252	252	252 (82.1 %)	55 (17.9 %)
2021	2376	2369	2364 (76.6 %)	724 (23.4 %)
January-April 2022	583	550	550 (84.4 %)	102 (15.6 %)

## How do you acquire users?

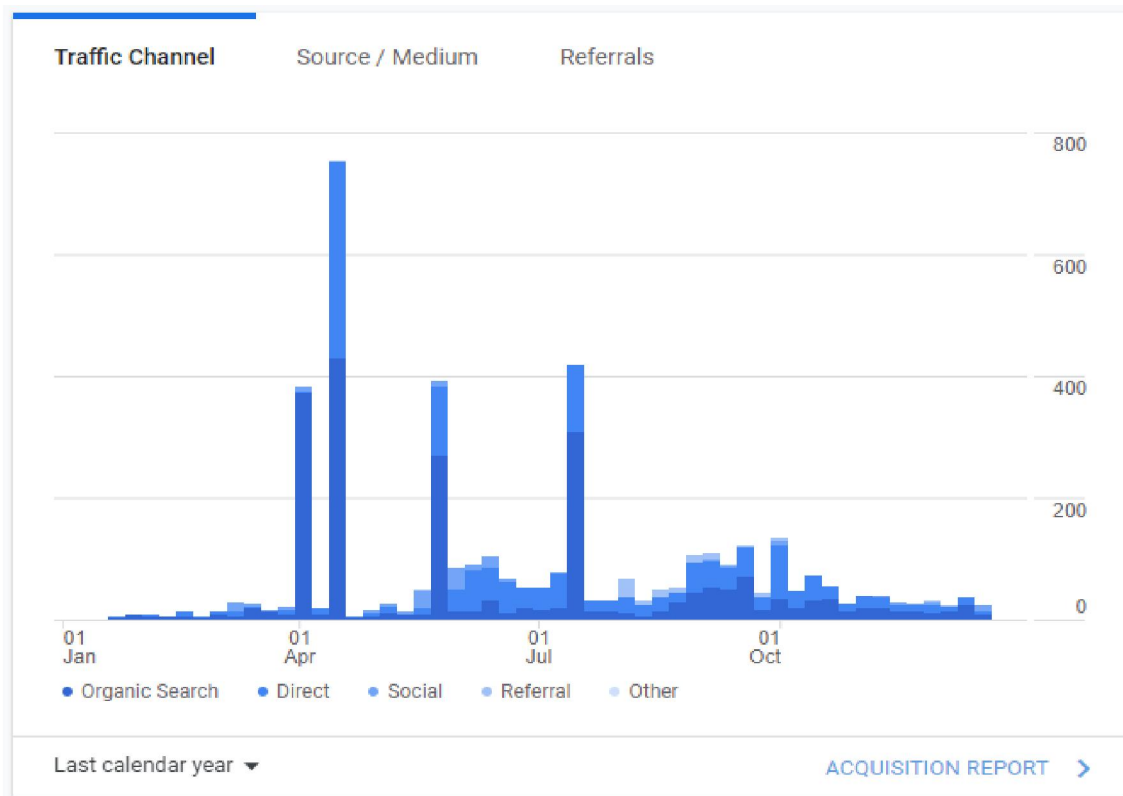


Figure 7 Traffic Channel from 01 January to 31 December 2021

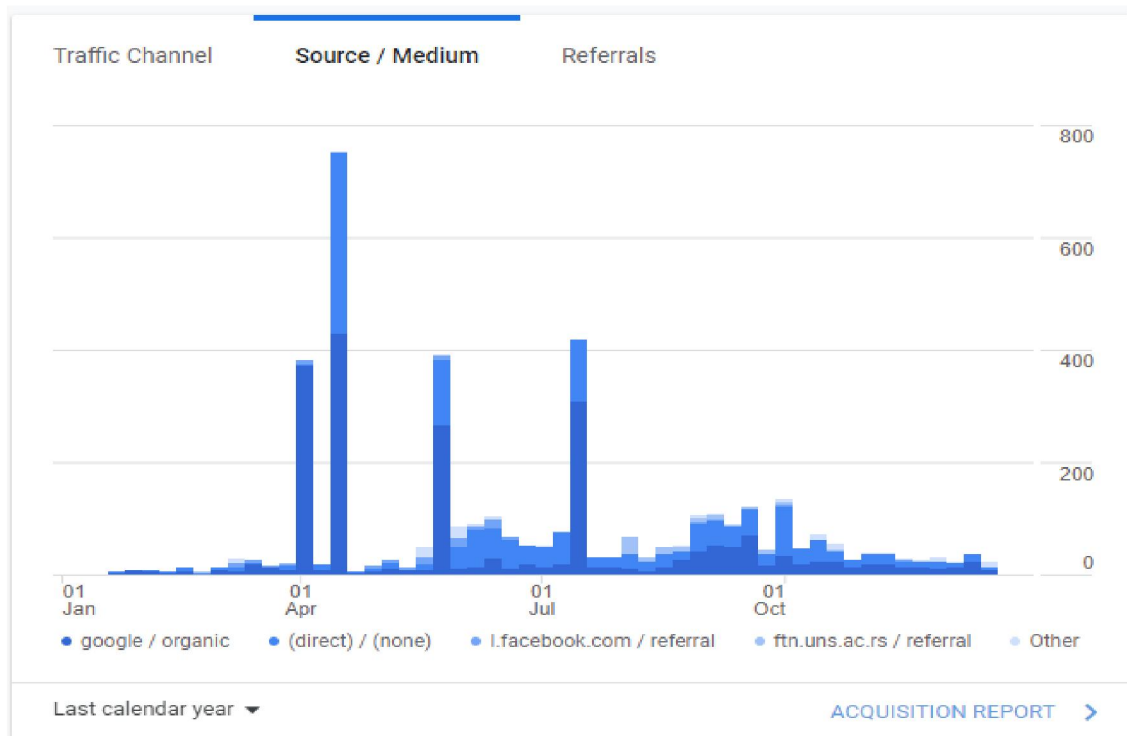


Figure 8 Source/Medium from 01 January to 31 December 2021

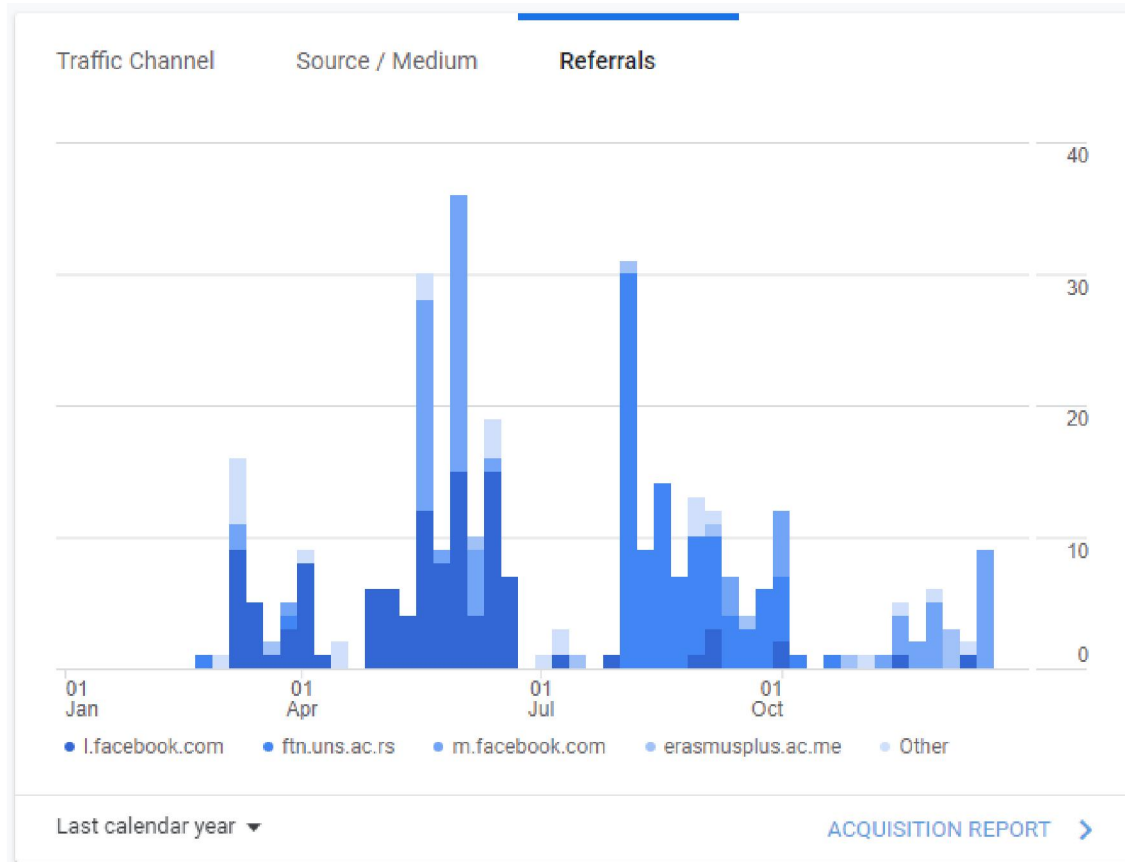












Figure 9 Referrals from 01 January to 31 December 2021

### What pages do your users visit?











1 January 2020 – 31 January 2020

Page ?	Pageviews ?	↓	Unique Pageviews ?
	<b>1,142</b> % of Total: 100.00% (1,142)		<b>843</b> % of Total: 100.00% (843)
1. /	<b>389</b> (34.06%)		<b>305</b> (36.18%)
2. /activities	<b>202</b> (17.69%)		<b>123</b> (14.59%)
3. /news-events	<b>89</b> (7.79%)		<b>53</b> (6.29%)
4. /project/consortium	<b>37</b> (3.24%)		<b>29</b> (3.44%)
5. /gallery	<b>35</b> (3.06%)		<b>21</b> (2.49%)
6. /index.php?option=com_content&view=article&id=36	<b>31</b> (2.71%)		<b>20</b> (2.37%)
7. /project/objectives	<b>25</b> (2.19%)		<b>18</b> (2.14%)
8. /activities?id=51	<b>24</b> (2.10%)		<b>15</b> (1.78%)
9. /activities?id=55	<b>21</b> (1.84%)		<b>15</b> (1.78%)
10. /project/contacts	<b>21</b> (1.84%)		<b>18</b> (2.14%)

## 1 January 2021 – 31 January 2021

Page ?	Pageviews ?	↓	Unique Pageviews ?
	<b>11,984</b> % of Total: 100.00% (11,984)		<b>7,199</b> % of Total: 100.00% (7,199)
1. / 	<b>5,363</b> (44.75%)		2,913 (40.46%)
2. /activities 	<b>1,020</b> (8.51%)		495 (6.88%)
3. /symposium 	<b>872</b> (7.28%)		649 (9.02%)
4. /news-events 	<b>382</b> (3.19%)		164 (2.28%)
5. /gallery 	<b>248</b> (2.07%)		118 (1.64%)
6. /activities?id=90 	<b>201</b> (1.68%)		80 (1.11%)
7. /symposium/12-symposium/66-registration-and-submission 	<b>200</b> (1.67%)		156 (2.17%)
8. /symposium/12-symposium/70-program 	<b>199</b> (1.66%)		152 (2.11%)
9. /activities?id=75 	<b>152</b> (1.27%)		64 (0.89%)
10. /symposium/12-symposium/68-templates 	<b>139</b> (1.16%)		109 (1.51%)

## 1 January 2022 – 28 April 2022

Page ?	Pageviews ?	↓	Unique Pageviews ?
	<b>2,314</b> % of Total: 100.00% (2,314)		<b>1,399</b> % of Total: 100.00% (1,399)
1. / 	<b>1,142</b> (49.35%)		648 (46.32%)
2. /activities 	<b>242</b> (10.46%)		131 (9.36%)
3. /gallery 	<b>84</b> (3.63%)		24 (1.72%)
4. /news-events 	<b>75</b> (3.24%)		42 (3.00%)
5. /activities?id=91 	<b>55</b> (2.38%)		32 (2.29%)
6. /activities?id=74 	<b>46</b> (1.99%)		17 (1.22%)
7. /symposium 	<b>43</b> (1.86%)		33 (2.36%)
8. /project/consortium 	<b>41</b> (1.77%)		35 (2.50%)
9. /project/objectives 	<b>36</b> (1.56%)		26 (1.86%)
10. /activities?id=90 	<b>31</b> (1.34%)		17 (1.22%)



## 2.2 Social network profiles

Social networking is the major tool that students today utilize to communicate with each other and to be informed on current issues. For this reason, social media will be utilized to access and engage future targeted students into SWARM activities.

The SWARM project was active on Facebook. Facebook is the most widely utilized social network in the world. Through the SWARM Facebook page, information, events, pictures and links were shared, and the public reacted by “liking” the page, giving “likes” to single elements and writing directly to the Project account.

The typical user is a young adult, who wants to keep in touch with friends and relatives. Therefore, a conversational, informal communication style is to be preferred.

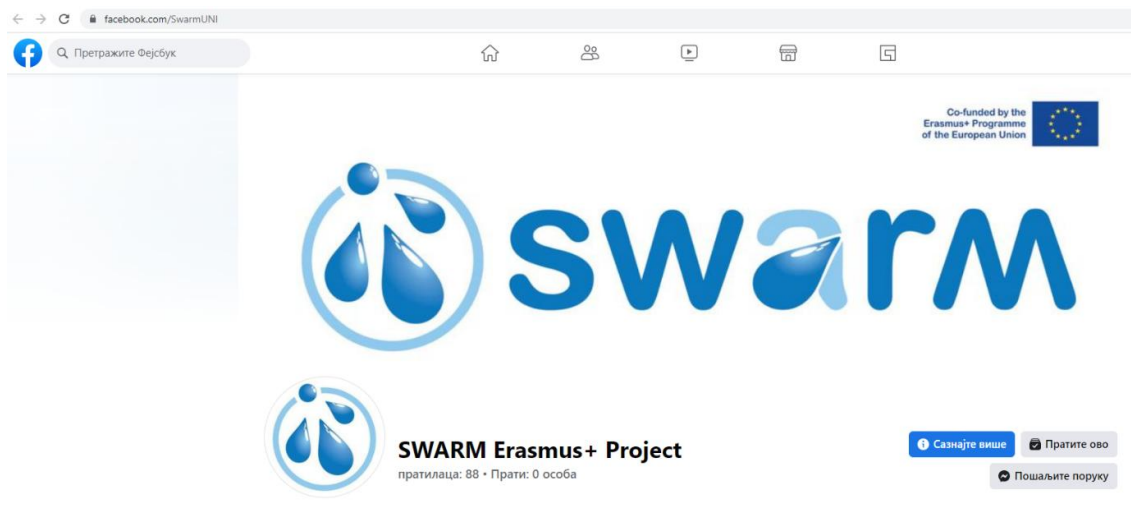


Figure 10 SWARM Facebook page

In total, there are **88 followers** of the SWARM Facebook page and **75 posts**.

SWARM YouTube channel was used to upload original project content and share it with friends and public in general.

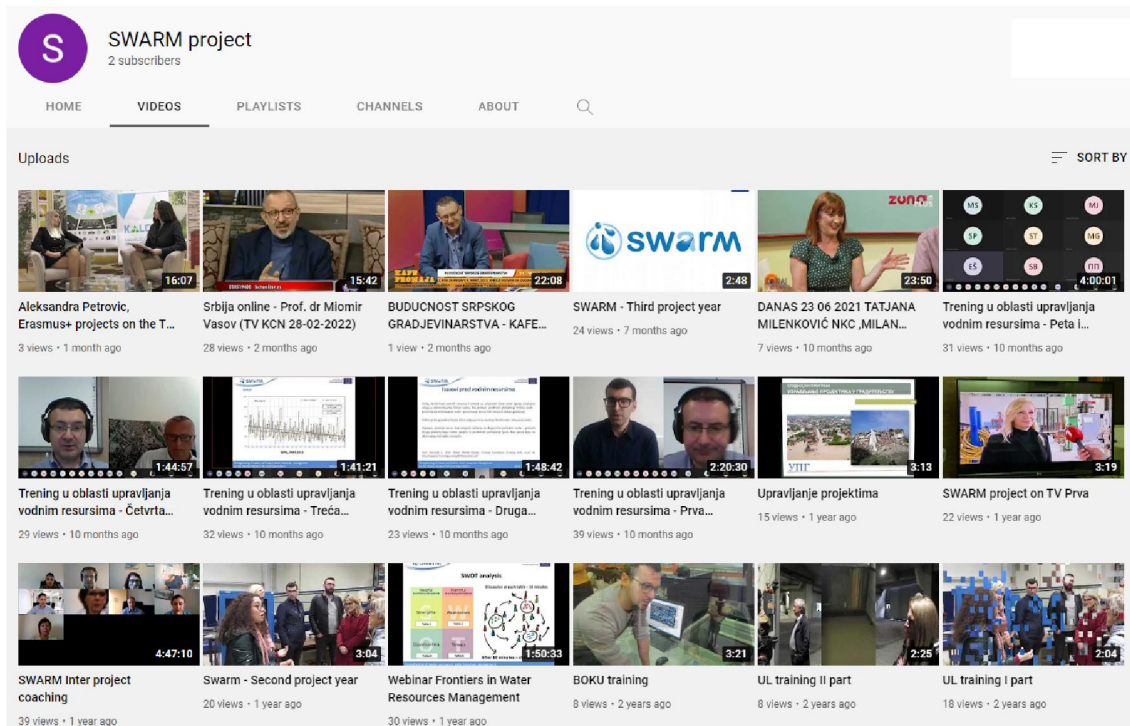


Figure 11 SWARM YouTube channel

In total, 25 videos were published and average view of each video is 18.88.

### 2.3 Newsletter

In total, six electronic newsletters were produced to ensure stakeholders remain well aware of the SWARM project. The newsletter template (Annex DE4) was used and the template structure includes at minimum following elements to fill in:

- Introduction, main text and summary section,
- Bullet points section to highlight core information delivered,
- Project contact information details,
- List and short description of project events,
- Picture or image.

The Newsletter is connected to the milestones described in the project description or when it will be commonly assessed to be needed or beneficial for other reasons, with a minimum of biannual publication to maintain interest of existing subscribers.

The following newsletters were created:

1. Issue 1 June 2019
2. Issue 2 November 2019
3. Issue 3 May 2020
4. Issue 4 November 2020

5. Issue 5 July 2021
6. Issue 6 December 2021



Strengthening of master curricula in water resources management for the  
Western Balkans HEIs and stakeholders (SWARM)  
(597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP)

SWARM newsletter, Issue 1/June 2019

### IN THIS ISSUE

- ❖ [Project](#)
- ❖ [Consortium](#)
- ❖ [Kick-off meeting](#)
- ❖ [Workshop on innovative practices](#)
- ❖ [First theme-based training](#)
- ❖ [Report on WB regional issues related to WRM](#)
- ❖ [Report on EU water policies and innovation](#)



Co-funded by the  
Erasmus+ Programme  
of the European Union

*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*

Welcome to the SWARM newsletter!

This bulletin provides information on the latest SWARM project activities.



Enjoy your reading and visit the SWARM website ([www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)) to find more information.

With the best regards,

SWARM project team

Figure 12 Example: Issue 1 June 2019

All created newsletters are freely available at <http://www.swarm.ni.ac.rs/activities?id=14>.

## 2.4 Project brochure

The project brochure was designed with idea to present briefly main information about the SWARM project to potentially interested parties. Text in the brochure gives short info on the type of the project, partners involved, main and specific objectives as well as the goals.

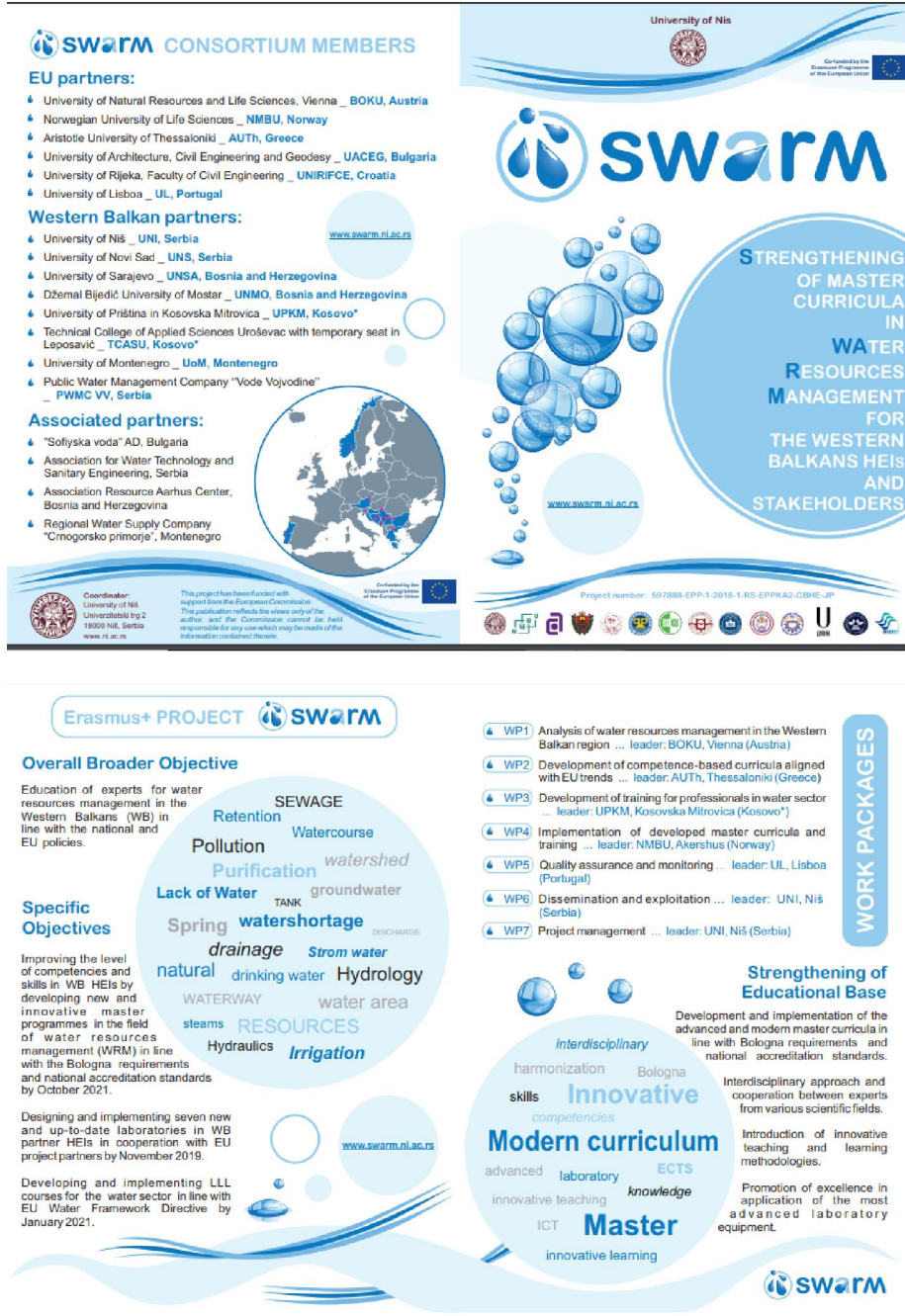


Figure 13 Project brochure (front and back page)



## 2.5 Other promotional materials

The most important print material for project promotion is the project brochure, designed to briefly present objectives and outcomes of the project. Other print materials (poster, rollup, folder, notebook) are designed for the use during project events (workshops, trainings).

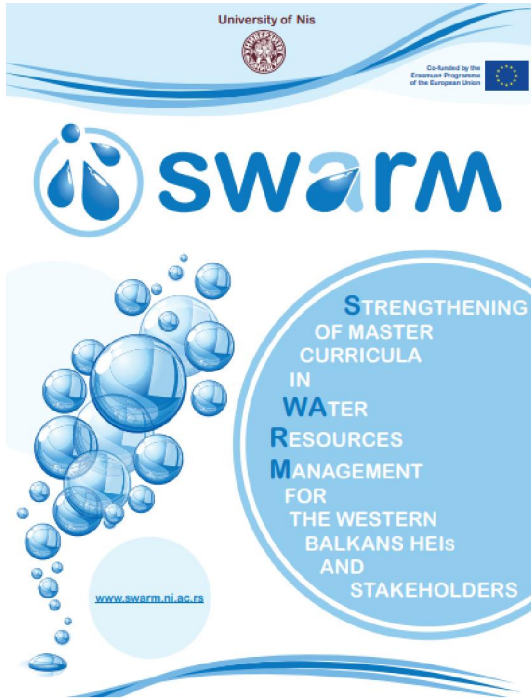


Figure 14 Poster



Figure 15 Folder (front page)



Figure 16 Bag



Figure 17 ID cards

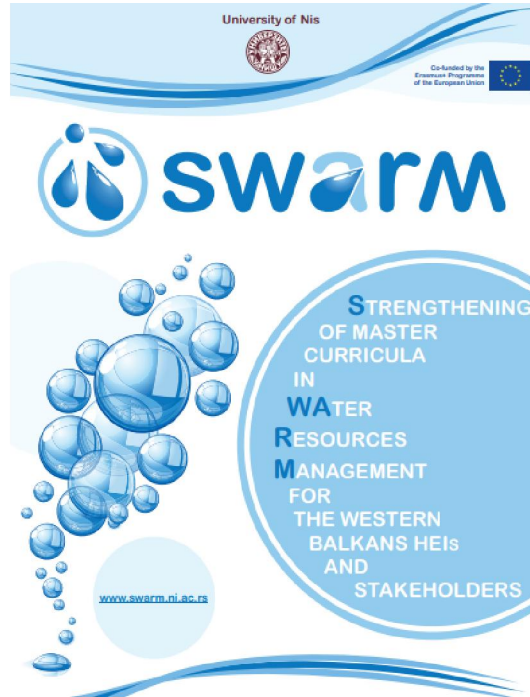


Figure 18 Roll-up



Figure 19 Printed promotional material

**Table 2** Type of promotional material and quantity

Type	Quantity
Notebook with the project logo	100
Roll up	2
Poster	50
Folder with the project logo	700
Project brochure	500
ID card	50
Bag with the project logo	300
Pencil with the project logo	400
Leaflet for training promotion	1200
Leaflet with project results	1200


ERASMUS+ Project

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

**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  
 Universidade de Lisboa \_ UL, Portugal

**WB partners**

University of Niš \_ UNI, Serbia  
 University of Novi Sad \_ UNS, Serbia  
 University of Sarajevo \_ UNSA, Bosnia and Herzegovina  
 Džemal Bijedić University of Mostar \_ UNMO, Bosnia and Herzegovina  
 University of Priština in Kosovska Mitrovica \_ UPKM, Kosovo\*  
 Technical College of Applied Sciences Uroševac with temporary seat in Leposavić \_ TCASU, Kosovo\*  
 University of Montenegro \_ UoM, Montenegro  
 Public Water Management Company "Vode Vojvodine" \_ PWMC VV, Serbia



**THE PROJECT MID-TERM RESULTS**

**Strengthening of Master Curricula in Water Resources Management for the Western Balkans HEIs and stakeholders**

**ASSOCIATED PARTNERS:**

"Sofijska voda" AD, Sofia, Bulgaria  
 Association for Water Technology and Sanitary Engineering  
 Association Resource Aarhus Center in B&H  
 Regional water supply "Crnogorsko primorje", Montenegro

**PROJECT DURATION:**  
November 2018 - November 2021



**Coordinator:**  
University of Niš  
Univerzitetski trg 2  
18000 Niš, Serbia  
www.ni.ac.rs



Co-funded by the Erasmus Programme of the European Union

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



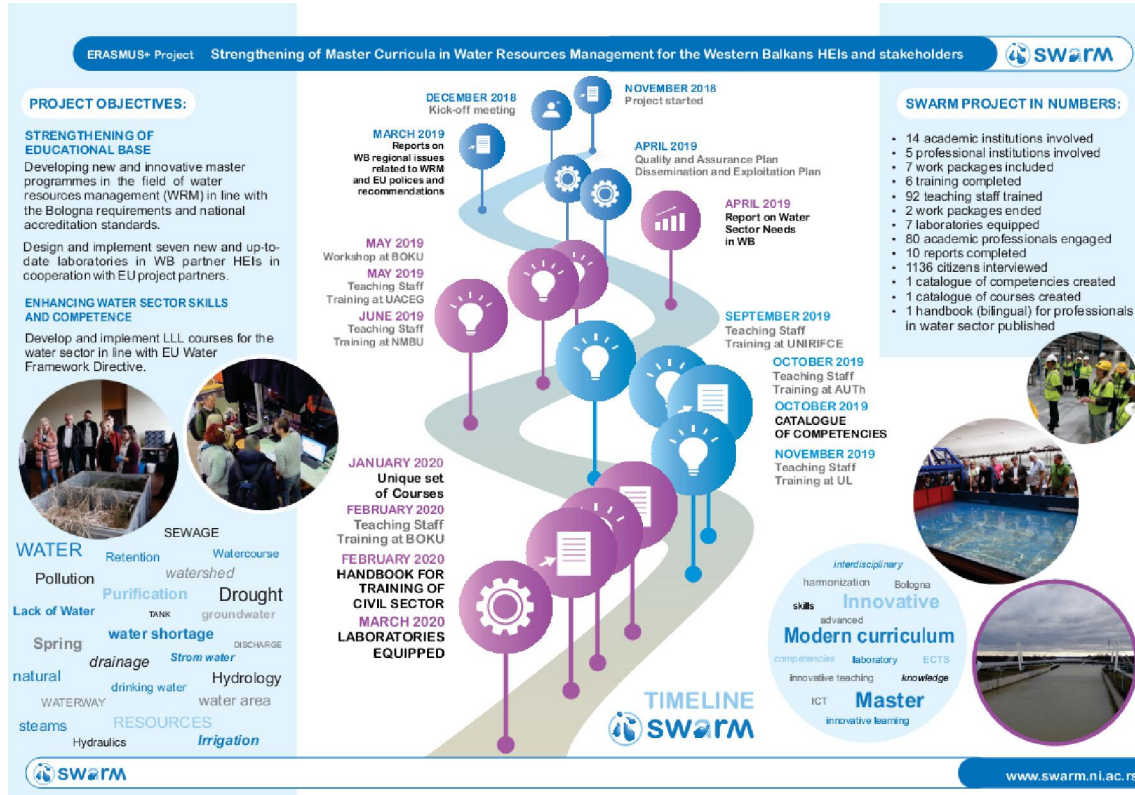


Figure 20 Leaflet with the mid-term results





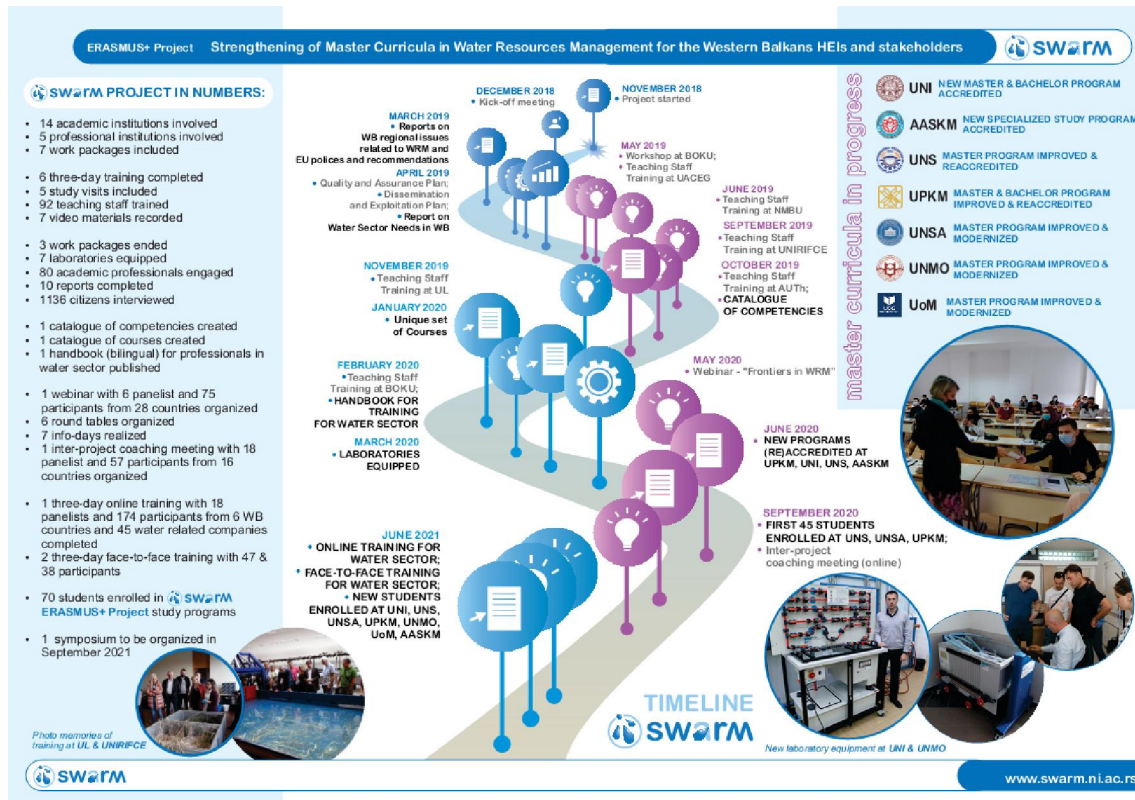
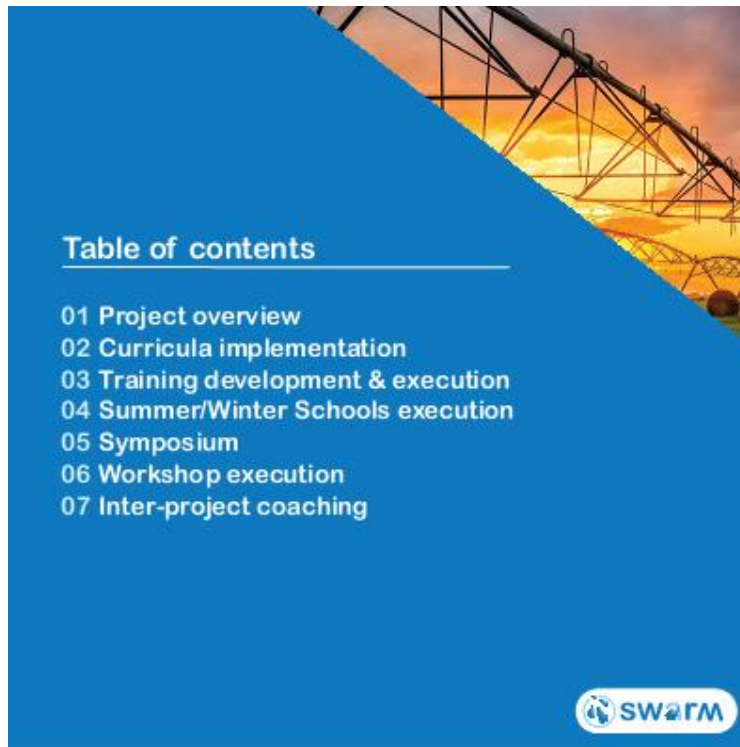


Figure 21 Leaflet with the project results (2021)





**Figure 22** SWARM booklet

For the final conference and project promotion, the SWARM booklet was developed and online distributed.

## 2.6 Erasmus+ Project Results Platform

The Erasmus+ Project Results Platform (<http://ec.europa.eu/programmes/erasmus-plus/projects/eplus-project-details/#project/597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP>) will enable to achieve wider visibility of project results. The platform also makes available products/deliverables/intellectual outputs which are the result of the projects funded.

The SWARM project summary consisted of the following elements:

- context/background of the project,
- objectives of the project,
- number and profile of participants,
- description of activities; methodology to be used in carrying out the project,
- a short description of the results and impact envisaged; the potential longer-term benefits.

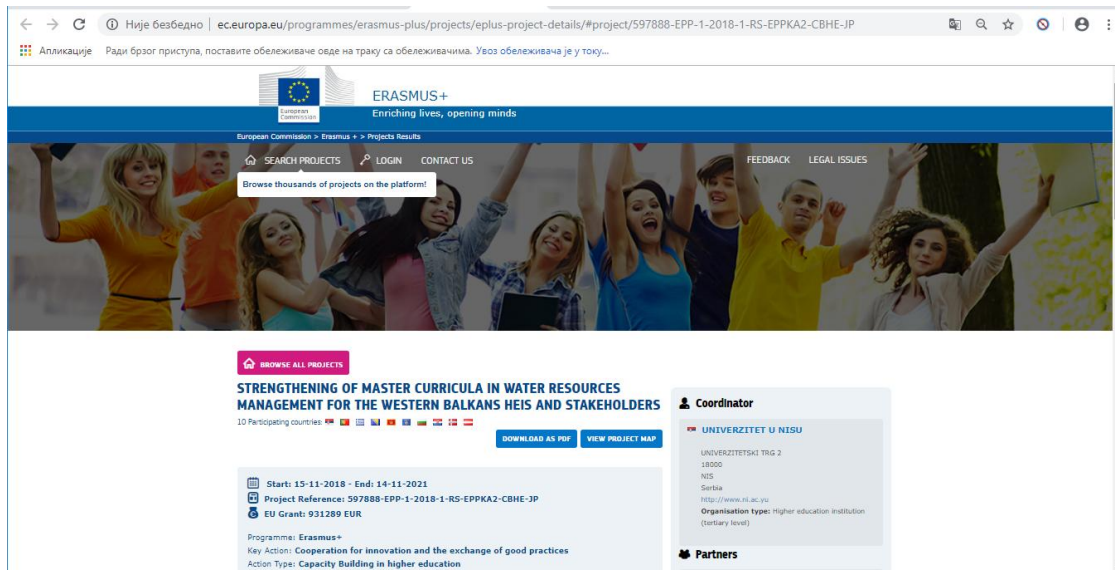


Figure 23 Erasmus+ Project Results Platform

## 2.7 SWARM partners' websites

The links to partners' websites are presented in Table 3.

Table 3 Institutions and link to SWARM news

Institution acronym	Link
UNI	<a href="https://gaf.ni.ac.rs/news/info21/swarm-watter.pdf">https://gaf.ni.ac.rs/news/info21/swarm-watter.pdf</a> <a href="https://gaf.ni.ac.rs/news/info21/swarm%20trening.pdf">https://gaf.ni.ac.rs/news/info21/swarm%20trening.pdf</a>
UPKM	<a href="http://xn--j1aebtj.xn--90a3ac/%D1%83%D1%81%D0%BF%D0%BE%D1%81%D1%82%D0%B0%D0%B2%D1%99%D0%B0%D1%9A%D0%B5-%D1%81%D1%82%D1%83%D0%B4%D0%B8%D1%98%D1%81%D0%BA%D0%BE%D0%B3-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B0-%D0%B4%D0%B8/">http://xn--j1aebtj.xn--90a3ac/%D1%83%D1%81%D0%BF%D0%BE%D1%81%D1%82%D0%B0%D0%B2%D1%99%D0%B0%D1%9A%D0%B5-%D1%81%D1%82%D1%83%D0%B4%D0%B8%D1%98%D1%81%D0%BA%D0%BE%D0%B3-%D0%BF%D1%80%D0%BE%D0%B3%D1%80%D0%B0%D0%BC%D0%B0-%D0%B4%D0%B8/</a>
UNMO	<a href="https://gf.unmo.ba/page59543425.aspx">https://gf.unmo.ba/page59543425.aspx</a>
UNIRIFCE	<a href="http://gradri.uniri.hr/hr/erasmus/projekt-swarm.html">http://gradri.uniri.hr/hr/erasmus/projekt-swarm.html</a>
NMBU	<a href="https://www.nmbu.no/fakultet/realtek/om/aktuelt/node/36350">https://www.nmbu.no/fakultet/realtek/om/aktuelt/node/36350</a>
UNS	<a href="http://www.uns.ac.rs/index.php/en/science/projects/by-programmes/erasmusplus">http://www.uns.ac.rs/index.php/en/science/projects/by-programmes/erasmusplus</a> <a href="https://www.izzs.uns.ac.rs/vesti/swarm-projekat">https://www.izzs.uns.ac.rs/vesti/swarm-projekat</a>
UNSA	<a href="http://gf.unsa.ba/index.php?lokacija=novosti#3073">http://gf.unsa.ba/index.php?lokacija=novosti#3073</a> <a href="https://www.unsa.ba/novosti/provedene-aktivnosti-u-okviru-projekta-swarm">https://www.unsa.ba/novosti/provedene-aktivnosti-u-okviru-projekta-swarm</a> <a href="https://www.unsa.ba/index.php/novosti/objavljen-cetvrti-bilten-e-newsletter-projekta-swarm">https://www.unsa.ba/index.php/novosti/objavljen-cetvrti-bilten-e-newsletter-projekta-swarm</a> <a href="http://www.gf.unsa.ba/20201201-swarm-newsletter.pdf">http://www.gf.unsa.ba/20201201-swarm-newsletter.pdf</a>

BOKU	<a href="http://www.wau.boku.ac.at/en/iwa/forschung/">http://www.wau.boku.ac.at/en/iwa/forschung/</a>
UoM	<a href="http://www.swarm.ucg.ac.me/">http://www.swarm.ucg.ac.me/</a> <a href="https://www.ucg.ac.me/objava/blog/1287/objava/119171-odrzan-okrugli-sto-u-okviru-erasmus-projekta-swarm">https://www.ucg.ac.me/objava/blog/1287/objava/119171-odrzan-okrugli-sto-u-okviru-erasmus-projekta-swarm</a>
AASKM	<a href="https://www.vtsurosevac.com/aktivnosti.php?IDP=3">https://www.vtsurosevac.com/aktivnosti.php?IDP=3</a>

The SWARM partners' websites were used to disseminate results.



Figure 24 a) UNIRIFCE website, b) UNSA website

## 2.8 Newspaper

During the SWARM project realisation, 16 materials were published in online or offline media. The purpose of publishing in media was to increase the importance of investing in the water sector and education.

Links to the published materials:

[https://www.ucg.ac.me/skladiste/blog\\_1287/objava\\_92583/fajlovi/Dan,%205.11](https://www.ucg.ac.me/skladiste/blog_1287/objava_92583/fajlovi/Dan,%205.11)

<https://www.dan.co.me/?nivo=3&rubrika=Povodi&clanak=766588&datum=2020-11-05>



- <https://www.aktuelno.me/crna-gora/najsavremenija-hidraulicka-laboratorija-na-ucg/>
- <http://www.rtcg.me/vijesti/drustvo/298494/najsavremenija-hidraulicka-laboratorija-na-ucg.html>
- <https://www.portalanalitika.me/clanak/postavljena-savremena-hidraulicka-laboratorija-na-gradjevinskom-fakultetu-ucg>
- <https://me.ekapija.com/news/3060690/na-gradjevinskom-fakultetu-ucg-postavljena-savremena-hidraulicka-laboratorija>
- <https://volimpodgoricu.me/2020/11/04/postavljena-savremena-hidraulicka-laboratorija-na-gradjevinskom-fakultetu-ucg/>
- <https://niskevesti.rs/voda-ce-u-buducnosti-biti-skuplja-od-naft/>
- <https://studenti.alo.rs/medjunarodni-simpozijum-upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse/>



Figure 25 Pobjeda 18 July 2019

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## 2.9 Radio/television/video

Links to the media (radio and television):

FTN TV – 8 October 2019

<https://www.youtube.com/watch?v=xTpkpLZAUMs>

Danas 23 June 2021, TV ZONA PLUS, Milan Gocić, UNI

<https://www.youtube.com/watch?v=hpRTGh0LboQ>

Prof. Dr. Srdjan Jovic vice dean of the FTS/UPKM promoted the Erasmus + Projects and student enrollment on the TV DANKOS Plus, on 2 September 2021

Link <https://www.youtube.com/watch?v=BuZlrNrpOi4>

Dr. Aleksandra Petrovic, Researcher, Erasmus + Officer promoted the Erasmus + projects and incoming KALCEA Local Workshop at FTS/UPKM on the TV KISS on 15 November 2021

Link [https://drive.google.com/file/d/13fPfa9qp-CkuGTHfyQkAY\\_MOo9pLsx7\\_/view?usp=sharing](https://drive.google.com/file/d/13fPfa9qp-CkuGTHfyQkAY_MOo9pLsx7_/view?usp=sharing)

Dr. Aleksandra Petrovic Researcher, Erasmus + Officer FTS/UPKM promoted the Erasmus + Projects on the TV DANKOS Plus, on 29 November 2021

Link <https://www.youtube.com/watch?v=PIbN15voaAY>

TV ZONA PLUS – Kafe Promaja 17 February 2022

[https://www.youtube.com/watch?v=FajhaSBFR\\_0](https://www.youtube.com/watch?v=FajhaSBFR_0)

TV Kopernikus – Srbija online – 28 February 2022

<https://www.youtube.com/watch?v=R6z502agfOY>

Informer - (TV KCN 22.04.2022) – Open Day at UNI, Faculty of Civil Engineering and Architecture

<https://www.youtube.com/watch?v=Hesx5zgVrdQ&t=1377s>

One presentation on radio was done:

[https://www.rtv.rs/sr\\_lat/vojvodina/novi-sad/upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse%E2%80%9C-okupilo-strucnjake-iz-regiona-\(audio\)\\_1274255.html](https://www.rtv.rs/sr_lat/vojvodina/novi-sad/upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse%E2%80%9C-okupilo-strucnjake-iz-regiona-(audio)_1274255.html)



Figure 27 FTN TV – 8 October 2019

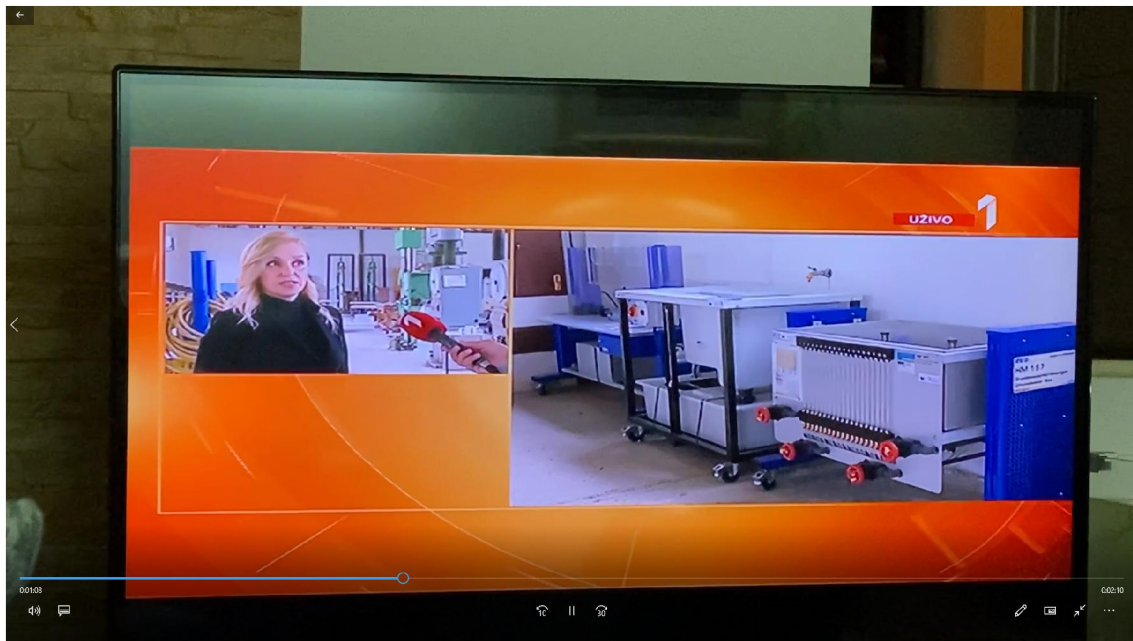


Figure 28 Promotion of SWARM project on TV Prva in Montenegro 19 November 2020



Figure 29 New study program at UNI -Informer - (TV KCN 22.04.2022)

## 2.10 Publications

In total, seven papers published related to the educational process in water resources management in the Western Balkan directly connected to the SWARM project.

- [1] Filkov, P., 2019. **SWARM – Development of water resources management education in the Western Balkans in line with the national and EU policies**, Vodnodelo 3-4, 39-41.
- [2] Karleusa, B., 2019. **Aktivnosti na Građevinskom fakultetu u Rijeci u okviru Erasmus+ projekta SWARM**, Hrvatske vode 110, 371-373.
- [3] Hadžić, E., Gocić, M., Bačić, Ž., 2020. **Staff education in the context of sustainability – Impact of Erasmus+ projects on capacity building of higher education in the Western Balkans**, Proceedings of the second Conference on Urban Planning and Regional Development – sustainable urban development, Sarajevo, Bosnia and Herzegovina, 15-16 October 2020, pp. 258-268, Vol. 2, number 2, ISSN 2744-1563.
- [4] Gocić, M., 2020. **Water resources management education in the Western Balkan region**, Proceedings of the International conference on water, society and climate change – Part II, WASO 2020, Concluding event of the 7-year Norad-Norhed project, 15th-16th December 2020, pp. 378-383.
- [5] Gocić, M., Tritthart, M., Prinos, Panagiotis, Skoulikaris, C., Djokić, J., Gavrilović, O., Vojvodić, J., Hadžić, E., Selimović, M., Sekulić, G., Rajović, J., Petrović, M., Jevremović, Lj., Trajković, S., 2021. **Strengthening water resources management in the Western Balkans**, Proceedings of the International Symposium „Water Resources Management: New Perspectives and Innovation Practices“, Novi Sad, Serbia, 23-24 September 2021, pp. 1-9, ISBN 978-86-6022-367-0.



- [6] Tritthart, M., Gocic, M. 2021. **Strengthening Water Resources Management in the Western Balkans - Insights from an Erasmus+ Capacity Building Project**. In: Kalinowska, M., Rowinski, P., Okruszko, T., Nones, M. (Eds.), 6th IAHR Europe Congress Abstract Book, 848-849.
- [7] Gocic, M., Hadzic, E., Karleusa, B., 2022. **Modernization of the teaching process in the field of water resources management in the Western Balkans**, 3 BH Water Congress, 11<sup>th</sup> and 12<sup>th</sup> May 2022 Sarajevo



6<sup>th</sup> IAHR Europe Congress, June 30<sup>th</sup> – July 2<sup>nd</sup>, 2020, Warsaw, Poland

### **Strengthening Water Resources Management in the Western Balkans – Insights from an Erasmus+ Capacity Building Project**

Michael TRITTHART<sup>1</sup>, Milan GOCIC<sup>2</sup>

<sup>1</sup> Institute of Hydraulic Engineering and River Research, Department of Water-Atmosphere-Environment, BOKU – University of Natural Resources and Life Sciences, Vienna, Austria  
email: michael.tritthart@boku.ac.at

<sup>2</sup> Faculty of Civil Engineering and Architecture, University of Nis, Serbia  
email: milan.gocic@gaf.ni.ac.rs

#### ABSTRACT

In the scope of an Erasmus+ CBHE (Capacity Building in Higher Education) project, shortcomings and needs in the implementation of innovative methods and concepts in Water Resources Management were determined in several partner countries of the Western Balkans. Based on this information, the still ongoing project develops new and updated university curricula as well as training programs for practitioners. This paper presents insights and lessons learned during the project and summarizes findings from a three-day workshop on innovative methods in Water Resources Management.

#### 1. Introduction

In the age of climate crisis careful management of water resources is paramount. Worldwide, 1.8 billion people are predicted to live in water-scarce regions by 2025, and by the year 2030, the global demand for water will increase by 40 percent (World Bank, 2019). The IPCC (2014) predicts that the number of people living under water stress in Europe will rise from 28 million to 44 million by the 2070s. The interwoven nature of water issues is reflected in global socioeconomic development and has the potential to cause socioeconomic imbalance. Hence, sustainable water solutions should be developed ranging from basic water safety, water quality and sanitation, to food supply and generation of renewable energy. Required solutions should be global in character considering also national idiosyncrasies, have to be based on the most up-to-date scientific knowledge and anchored in broader and long-term strategies and action plans.

Education, capacity building and life-long learning (LLL) play a crucial role in the development of sustainable solutions in the field of water resources management (WRM). This is acknowledged particularly in the integration process of countries aiming for membership within the European Union, such as the countries within the Western Balkans (WB). The Erasmus+ CBHE Key Action 2 project “Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders” (SWARM) started in 2018 to address these issues. The wider objective of the project is to improve the quality of higher education in the field of WRM, strengthen its relevance for the labor market and society, and enhance the level of competences and skills of experts in the WB partner countries by developing new competence-based and improving existing master curricula in line with EU policy, innovations and trends. Specific project objectives are: (i) improving the level of competencies and skills in higher education institutions (HEIs) by developing new and innovative master programs in the field of WRM in line with the Bologna requirements and national accreditation standards; (ii) designing and implementing new laboratories in WB countries; and (iii) developing and implementing LLL courses for professionals in the water sector in line with the EU Water Framework Directive (2000).

#### 2. Materials and methods

The project consortium consists of 13 partner HEIs and one associated water utility. From the WB region, Serbia, Kosovo\*, Bosnia and Herzegovina as well as Montenegro are partnering within the consortium; on behalf of the EU and its associates, universities from Austria, Norway, Greece, Bulgaria, Croatia and Portugal are providing their knowledge and expertise. Within the inception phase, a detailed analysis of WB regional issues related to WRM was conducted and EU innovations in water policy as well as EU recommendations and legislation in the water sector were put together. On this basis, existing curricula both in the EU as well as in WB partner countries were analyzed in order to determine gaps and needs for improvement. Moreover, required laboratory equipment was determined. Finally, a three-day workshop on “Innovative practices in the

**Figure 31** Tritthart, M., Gocic, M. 2021. **Strengthening Water Resources Management in the Western Balkans - Insights from an Erasmus+ Capacity Building Project**. In: Kalinowska, M., Rowinski, P., Okruszko, T., Nones, M. (Eds.), 6th IAHR Europe Congress Abstract Book, 848-849.

**Zbornik radova** • 2. Konferencija o urbanom planiranju i regionalnom razvoju \_ održivi urbani razvoj  
**Proceedings** • 2nd Conference on Urban Planning and Regional Development \_ sustainable urban development

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Geodetski fakultet Sveučilišta u Zagrebu  
 zbacic@geof.hr

# 21

## OBRAZOVANJE KADROVA U KONTEKSTU ODRŽIVOSTI - UTICAJ ERASMUS+ PROJEKATA NA JAČANJE KAPACITETA VISOKOŠKOLSKOG OBRAZOVANJA ZAPADNOG BALKANA

### STAFF EDUCATION IN THE CONTEXT OF SUSTAINABILITY- IMPACT OF ERASMUS+ PROJECTS ON CAPACITY BUILDING OF HIGHER EDUCATION IN THE WESTERN BALKANS

#### Sažetak / Abstract

Najveći program Europske unije iz oblasti unapređenja kapaciteta visokog obrazovanja, namjenjeni prvenstveno obrazovanju i osposobljavanju, mladima i sportu, za razdoblje od 2014. do 2020. godine su Erasmus+ programi. Ovim programima se potiče povezivanje institucija aktivnih u području obrazovanja s poslovnim sektorom, odnosno tržištem rada, te se programom nude brojne mogućnosti za njihovu saradnju - zajedničke projekte. Ovakvi projekti doprinose povećanju kompetencija, znanja i vještina budućih stručnjaka, pomažu gospodarski i socijalni napredak, stvarajući okvir za budući održivi razvoj. Strateška partnerstva, koja se formiraju tijekom realizacije projekta otvorena su za organizacije strukovnog obrazovanja i osposobljavanja, škole, javna tijela na svim razinama, profesionalna udruženja, univerzitete, ustanove za obrazovanje odraslih, institute, udruge, neprofitne/nevladine organizacije, kulturne organizacije, istraživačke institute, socijalne partnere ili druge predstavnike tržišta rada, javna ili privatna mala, srednja ili velika poduzeća, organizacije za profesionalnu orijentaciju i dr.

Ključne akcije koje se sprovode kroz ove programe odnose se na mobilnost pojedinaca, saradnju za inovacije i razmjenu dobrih praksi, potporu za jačanje politike, aktivnosti programa Jean Monnet, te podrška sportu. Za jačanje visokoškolskih institucija Zapadnog Balkana poseban značaj imaju projekti fokusirani na izgradnju i jačanje kapaciteta u visokom obrazovanju, koji podupiru saradnju s partnerskim državama u područjima visokog obrazovanja i mladih, sa ciljem jačanja sposobnosti ustanove u njihovom postupku modernizacije i internacionalizacije. S tim u vezi, u radu će se dati osnovni ciljevi, sprovedene aktivnosti i rezultati dva trogodišnja Erasmus+ projekta: SWARM projekat (Razvoj master kurikuluma iz oblasti upravljanja vodnim resursima za visokoškolske institucije Zapadnog Balkana i zainteresovane strane) i Erasmus+ GEOBIZ projekat (Poslovno vođeno učenje zasnovano na problemima za akademsku izvrsnost u geoinformatici).

*Ključne riječi: internacionalizacija, Erasmus+ projekti, visokoškolsko obrazovanje, upravljanje vodnim resursima, prostorni podaci, Zapadni Balkan*

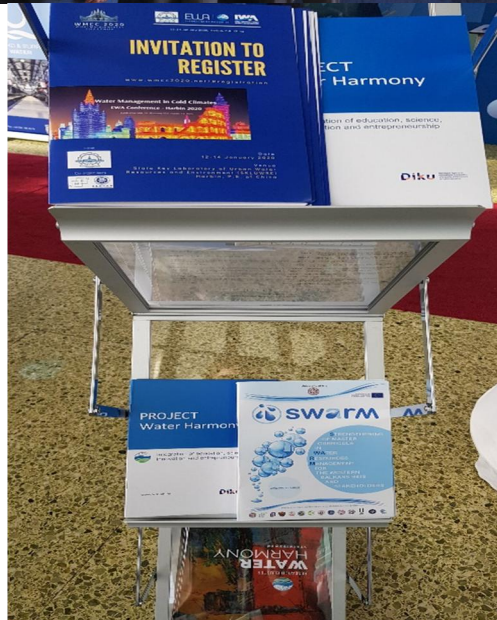
258

Figure 31 Hadžić, E., Gocić, M., Bačić, Ž., 2020. Staff education in the context of sustainability – Impact of Erasmus+ projects on capacity building of higher education in the Western Balkans, Proceedings of the second Conference on Urban Planning and Regional Development – sustainable urban development, Sarajevo, Bosnia and Herzegovina, 15-16 October 2020, pp. 258-268, Vol. 2, number 2, ISSN 2744-1563



## 2.11 Organised promotional activities

In total, 61 different promotional events organised to reach public in general and the SWARM target groups.



### 3. Info days for student enrolment

Eleven promotional activities were organized by the WB project partners (<http://www.swarm.ni.ac.rs/activities?id=58>) i.e.

- University of Pristina in Kosovska Mitrovica (UPKM) – 03 September 2020
- University of Pristina in Kosovska Mitrovica (UPKM) – 23 September 2020
- Dzemal Bijedic University of Mostar (UNMO) - 05 October 2020
- University of Sarajevo (UNSA) – 26 October 2020
- University of Montenegro (UoM) – 12 November 2020
- University of Novi Sad (UNS) – 01, 02 and 10 June 2021
- Dzemal Bijedic University of Mostar (UNMO) - 03 June 2021
- University of Nis (UNI) - 18 June 2021
- Academy of Applied Studies in Kosovo and Metohija (AASKM) – 10 September 2021

The goal of the promotion is to inform future students regarding SWARM study programmes in the field of water resources management (WRM).

All materials are freely available at the SWARM website (<http://www.swarm.ni.ac.rs/activities?id=58>).

WB HEI acronym, type of produced promotional material and quantity are presented in Table 4.

**Table 4** Institution, type of promotional material and quantity

HEI acronym	Type	Quantity
UNI	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
UNSA	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
UNMO	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
UPKM	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
AASKM	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
UNS	Leaflet for promotion of study programe	1000
	Brochure for promotion of study programe	500
UoM	Leaflet for promotion of study programe	500
	Brochure for promotion of study programe	200

For the promotion of developed and modernized study programmes in the field of water resources management leaflets and brochures have been developed.

University of Nis (UNI)

Studijski program  
UPRAVLJANJE PROJEKTIMA  
U GRADITELJSTVU

Kofinansira  
Evropska unija  
program Erasmus+  Ova publikacija odražava stavove isključivo svojih autora. Evropska komisija se ni na koji način ne može smatrati odgovornom za sadržaj, izdavanje ili širenje u ovoj publikaciji.

 UNIVERZITET U NIŠU  
GRAĐEVINSKO-ARHITEKTONSKI FAKULTET 

OSNOVNE AKADEMSKE STUDIJE (OAS)

akademska titula:  
**diplomirani inženjer menadžmenta**  
trajanje studija:  
**4 školske godine (8 semestra)**  
broj bodova:  
**240 ESPB**  
upisna kvota (budžet):  
**30 studenata**



MASTER AKADEMSKE STUDIJE (MAS)

akademska titula:  
**master inženjer menadžmenta**  
trajanje studija:  
**1 školska godina (2 semestra)**  
broj bodova:  
**60 ESPB**  
upisna kvota (budžet):  
**16 studenata**

Studijski programi  
startuju školske:  
2021./2022. godine

**kontakt:**  
a: Aleksandra Medvedeva 14  
18000 Niš, Srbija  
t: +38118588200  
e: [info@gaf.ni.ac.rs](mailto:info@gaf.ni.ac.rs)  
i: [www.gaf.ni.ac.rs](http://www.gaf.ni.ac.rs)



OSNOVNE AKADEMSKE  
STUDIJE (OAS)  
MASTER AKADEMSKE  
STUDIJE (MAS)

Upravljanje projektima  
u graditeljstvu

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

Kompetencije  
diplomiranih studenata:

- efikasno upravljanje građevinskim preduzećem
- realizacija građevinskih projekata
- koordinisano upravljanje tehničkim sistemima
- upravljanje izradom projekata organizacije građenja
- upravljanje ljudskim resursima na investicionim projektima u građevinarstvu
- kreiranje i obrada informacionog modela građevinskih objekata
- primena metoda i alata u identifikaciji problema, potencijala i ograničenja, kao i u upravljanju projekata
- upravljanje projektima i inovacijama u sistemu upravljanja rizicima od prirodnih katastrofa
- primena IT tehnologija u upravljanju projektima

Izvod iz nastavnog plana i programa

OAS UPG (8 semestra) 240ESPB

- Studijski program osnovnih studija obuhvata:
- četrdeset (40) obaveznih predmeta
  - šest blokova izbornih predmeta (bira se ukupno 10 od 21 ponuđenog predmeta),
  - stručnu praksu u trajanju od 90 časova u toku semestra,
  - predmet završnog rada i
  - diplomski rad.

Izborni predmeti učestvuju sa 46 ESPB bodova.  
Broj časova aktivne nastave je prosečno 24 časa nedeljno.

MAS UPG (2 semestra) 60ESPB

- Studijski program master studija obuhvata:
- šest (6) obaveznih predmeta,
  - dva izborna bloka (bira se po 1 od 4 ponuđena predmeta po bloku),
  - stručnu praksu u trajanju od 90 časova u toku semestra,
  - predmet završnog rada i
  - master rad.

Izborni predmeti učestvuju sa 21 ESPB bodova.  
Broj časova aktivne nastave je 22 časa nedeljno.



Uslovi upisa osnovnih akademskih studija (OAS)

Na osnovne studije UPG mogu se upisati kandidati koji su završili srednjoškolsko obrazovanje u trajanju od najmanje četiri (4) godine i koji su položili prijemni ispit iz oblasti **matematike**. Prijemni ispit organizuje Fakultet nakon objavljivanja konkursa za upis novih studenata.

Uslovi upisa master akademskih studija (MAS)

Na master studije UPG mogu se upisati kandidati koji su završili odgovarajuće osnovne akademske studije ostvarivši najmanje 240 ESPB bodova, odnosno kandidati koji su završili osnovne akademske studije na fakultetu ili na drugoj visokoškolskoj ustanovi u okviru obrazovno-naučnog polja Tehničko-tehnoške nauke, ostvarivši najmanje 240 ESPB bodova.

Postupak prijave za upis:

- nakon objave konkursa za upis studenata na Univerzitetu u Nišu, kandidati svoje prijave mogu podneti Građevinsko-arhitektonskom fakultetu u Nišu u skladu sa konkursom i pravilima studiranja
- konkurs će biti objavljen na web adresama Fakulteta i Univerziteta: [www.gaf.ni.ac.rs](http://www.gaf.ni.ac.rs) i [www.ni.ac.rs](http://www.ni.ac.rs)
- za detaljne informacije o upisu kontaktirati Službu za studentska pitanja GAF-a:  
a: Aleksandra Medvedeva 14,  
18000 Niš  
e: [upis@gaf.ni.ac.rs](mailto:upis@gaf.ni.ac.rs)  
t: +38118588277



Nastavni plan i program master studija (MAS)  
Upravljanje projektima u graditeljstvu  
razvijen je i akreditovan uz okviru



SWARM Erasmus+ Projekta:

«Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama na Zapadnom Balkanu»

Broj projekta: 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP



## Džemal Bijedic University of Mostar (UNMO)

### STUDIJ

#### UPRAVLJANJE OKOLIŠNOM INFRASTRUKTUROM

Studijski program Upravljanje okolišnom infrastrukturom je razvijen u sklopu projekta pod nazivom "Creating the network of knowledge labs for sustainable and resilient environments" - KLABS (Projekt sufinanciran od strane EU kroz program Erasmus+).

Prva tri semestra sadrže 3 obavezna i 2 izborna predmeta, dok je četvrti semestar predviđen za izradu završnog rada sa mentorom.



U okviru master studijskog programa Upravljanje okolišnom infrastrukturom u sklopu Erasmus+ projekta pod nazivom "Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama na Zapadnom Balkanu" (SWARM) izvršena je modifikacija tri izborna predmeta: Zaštita voda, Održivo upravljanje komunalnim vodovodnim poduzećima i Urbana hidrologija.

Ovim projektom opremljena je laboratorija Instituta Građevinskog fakulteta Univerziteta "Džemal Bijedić" u Mostaru, kupovinom savremene laboratorijske opreme usmjerene prema modernizaciji iz oblasti vodenih resursa.

Studijski program Upravljanje okolišnom infrastrukturom je namijenjen studentima građevinskog i arhitektonskog, kao i ostalih srodnih fakulteta. Pored studenata, namijenjen je i inženjerima iz prakse koji žele dopuniti svoje formalno znanje, posebno onima koji se bave ili se žele baviti održivim razvojem i upravljanjem okolišnom infrastrukturom, u komunalnim preduzećima, relevantnim institucijama i privatnom sektoru.

### PROJEKAT

#### UPRAVLJANJE OKOLIŠNOM INFRASTRUKTUROM

SWARM projekat je Erasmus+ projekat finansiran od strane Evropske unije u periodu od novembra 2018. do novembra 2021. godine u okviru programa za unapređenje i izgradnju kapaciteta u visokom obrazovanju zapadnog Balkana. Konzorcijum čine šest visokoškolskih ustanova iz zemalja Evropske unije i Norveške i sedam visokoškolskih ustanova i jedno javno vodoprivredno preduzeće iz zemalja Zapadnog Balkana.

Osnovni cilj ovog projekta je obrazovanje stručnjaka za upravljanje vodnim resursima na području Zapadnog Balkana u skladu sa nacionalnim politikama i politikama Evropske unije. Posebni cilj projekta jeste unapređenje nivoa kompetencija i vještina u visokoškolskim ustanovama Zapadnog Balkana kroz razvoj novih i unapređenje postojećih master studijskih programa iz oblasti upravljanja vodnim resursima u skladu sa zahtjevima Bolonjske deklaracije.

U okviru SWARM Erasmus+ projekta razvijeni su i implementirani kursevi cjeloživotnog učenja za stručnjake iz oblasti upravljanja vodnim resursima u skladu sa direktivama Evropske unije o vodama.



Co-funded by the Erasmus+ Programme of the European Union



UNIVERZITET "DŽEMAL BIJEDIĆ" U MOSTARU  
GRAĐEVINSKI FAKULTET

Gradjevinski fakultet od školske 2017/2018. godine ima program diplomskog studija (II ciklus) pod nazivom

## UPRAVLJANJE OKOLIŠNOM INFRASTRUKTUROM

Univerzitetski Kampus, 88104 Mostar  
tel: +387 36 514 850; fax: +387 36 514 899;  
[www.gf.unmo.ba](http://www.gf.unmo.ba)  
[www.facebook.com/gf.unmo](https://www.facebook.com/gf.unmo)  
e-mail: [studentskagf@unmo.ba](mailto:studentskagf@unmo.ba)

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

## GRAĐEVINSKI FAKULTET



## STUDIJ KRATAK OPIS

## STUDIJ SMJEROVI

Gradjevinski fakultet Univerziteta „Džemal Bijedić“ u Mostaru je osnovan 1978. godine i predstavlja članicu Univerziteta „Džemal Bijedić“ u Mostaru, a u skladu sa Evropskim standardima o univerzitetskoj autonomiji i Zakonom o visokom obrazovanju.

Gradjevinski fakultet je javna institucija koja obavlja nastavnu, naučno-istraživačku, stručnu, visokostručnu i savjetodavnu djelatnost u oblasti građevinarstva. U okviru Fakulteta postoji Institut u čiji sastav ulaze: Zavod za projektovanje i ispitivanje materijala i konstrukcija (ZPIMK) i Zavod za energijsku efikasnost i zaštitu okoliša (ZEEZO).

Gradjevinski fakultet već 40 godina uspješno obrazuje diplomirane inženjere građevinarstva i inženjere građevinarstva, te magistre i doktore tehničkih nauka iz oblasti građevinarstva, a od 2008. godine i reforme studija, obrazuje i bachelore i mastere građevinarstva.

Do danas je na Građevinskom fakultetu u Mostaru studijske programe, u različitim zvanjima, uspješno završio ukupno 1251 student, 18 osoba je steklo zvanje magistra tehničkih nauka, te 16 osoba zvanje doktora tehničkih nauka iz oblasti građevinarstva.



Akademski studij je izrađen u cilju razumijevanja osnovnih postulata građevinarstva sa naglaskom na projektovanje, analize i dimenzionisanje građevinskih konstrukcija, organizacije rada, izvođenja i održavanja građevinskih objekata.

Studij je podjeljen na tri ciklusa. Prvi ciklus ili dodiplomski studij, traje tri godine (6 semestara) na kraju kojih studenti ostvaruju ukupno 180 ECTS bodova, a njegovim završetkom se stiče zvanje Bachelor građevinarstva. Uspješan završetak dodiplomskog studija je uslov za upis na drugi ciklus ili diplomski studij, koji traje dvije godine na kraju kojih studenti ostvaruju ukupno 120 ECTS bodova, a čijim završetkom se stiče zvanje Master građevinarstva.

Nakon sticanja zvanja Master građevinarstva, može se, uz uslove propisane Pravilima Univerziteta „Džemal Bijedić“ u Mostaru i Pravilima Građevinskog fakulteta, upisati treći ciklus studija, odnosno doktorski studij. Treći ciklus je organizovan kao trogodišnji studij. Odbranom doktorske disertacije stiče se zvanje Doktora tehničkih nauka iz oblasti građevinarstva.

Fleksibilnost nastavnih planova (prema EUCET) omogućuje da ovi studiji reflektiraju brz razvoj tehnologije i da se prilagođavaju potrebama u privredi kroz sticanje znanja i iskustva.

Kvalitet studija je priznat na internacionalnom i državnom nivou. Kompatibilnost nastavnih planova sa onim u zemljama EU omogućuje razmjenu studenata sa evropskim Univerzitetima.

**Dodiplomski studij (180 ECTS)**  
Opšti/opći smjer: programski sadržaj omogućava cjelovito sagledavanje građevinske struke i daje neophodan nivo znanja za uspješan rad na gradilištima, u administraciji, inženjerskim projektnim biroima i građevinskim firmama na poslovima odgovarajuće složenosti.

**Diplomski studij (120 ECTS)**  
Konstruktivni smjer  
Upravljanje okolišnom infrastrukturom

Diplomski studij po svom završetku generalno daje širi spektar znanja potrebnih za obavljanje visokostručnih poslova u različitim granama građevinarstva: planiranje, projektovanje, građenje, nadzor i održavanje složenih građevinskih konstrukcija, zahvata i sistema i temelje za razvojna i naučna istraživanja.

Tokom diplomskog studija studenti imaju priliku raditi na realnim istraživačkim projektima: semestralni i master radovi na određenim predmetima se, ovisno o trenutnoj saradnji fakulteta i privrede, formiraju na osnovu realnih problema u privredi kao i društvenoj zajednici. Za realizaciju istraživačkih projekata studentima je na raspolaganju laboratorija i oprema fakulteta koja je obnovljena proteklih godina kroz nekoliko projekata sufinansiranih od strane EU kroz program Erasmus+.

**Institut Građevinskog fakulteta**  
Od osnivanja Građevinskog fakulteta, praktični dio nastave, kao i naučno-istraživačka djelatnost, odvijaju se u Zavodu za projektovanje i ispitivanje materijala i konstrukcija (ZPIMK). Reformom rada Univerziteta ZPIMK je postao dijelom Instituta Građevinskog fakulteta. U sklopu Instituta djeluje i Zavod za energijsku efikasnost i zaštitu okoliša (ZEEZO).

Osnovni zadaci Instituta su: razvoj i unapređenje naučno-istraživačkog i visokostručnog rada iz oblasti građevinarstva, praktično osposobljavanje mladih naučnika i istraživača, obrazovanje i usavršavanje novog nastavnog kadra, rješavanje složenih zadataka iz oblasti građevinarstva za potrebe privrede i šire društvene zajednice, eksperimentalni rad i nastava, te saradnja sa srodnim institucijama iz zemlje i inostranstva.

Gradjevinski fakultet preko Instituta ostvaruje veoma uspješnu saradnju sa privredom u projektovanju, ispitivanju i nadzoru različitih objekata.

## University of Novi Sad (UNS)

**OPŠTE INFORMACIJE**

Departman za inženjerstvo zaštite životne sredine i zaštite na radu je oformljen kao odgovor na potrebe privrede, državnih institucija i kompanija koje se suočavaju sa problemima u domenu zaštite životne sredine i zaštite na radu i kojima su neophodni inženjeri sa stručnim i naučnim znanjima. U okviru Departmana nalaze se akreditovana Laboratorija za monitoring životne i radne sredine, Laboratorija za inženjerstvo zaštite životne sredine i Multifunkcionalna laboratorija za projektovanje u inženjerstvu zaštite životne sredine koje studentima pružaju mogućnost eksperimentalnog rada i sticanja praktičnog iskustva kroz učešće u realizaciji nacionalnih i međunarodnih naučno-istraživačkih projekata i saradnju sa privredom.

Na Departmanu se realizuju interdisciplinarne i multidisciplinarnne oblasti u okviru četiri grupe studijskih programa: inženjerstvo zaštite životne sredine, inženjerstvo zaštite na radu, čiste energetske tehnologije i inženjerstvo tretmana i zaštite voda.



Kofinansira  
Evropska unija  
program Erasmus+

Ova publikacija odražava stavove isključivo svojih autora, Evropska komisija se ne snosi za sadržaj i odgovornost za sadržaj i stavove iznešene u ovoj publikaciji.



**DEPARTMAN ZA INŽENJERSTVO  
ZAŠTITE ŽIVOTNE SREDINE I ZAŠTITE NA RADU**  
FAKULTET TEHNIČKIH NAUKA, NOVI SAD



**UPIS 2021**

**UNIVERZITET U NOVOM SADU**  
**FAKULTET TEHNIČKIH NAUKA**  
**DEPARTMAN ZA INŽENJERSTVO ZAŠTITE  
ŽIVOTNE SREDINE I ZAŠTITU NA RADU**

**MASTER AKADEMSKE STUDIJE (MAS)**  
**INŽENJERSTVO TRETMANA  
I ZAŠTITE VODA**

**KONTAKT:**  
ftnzastita@uns.ac.rs  
Tel: 021-485-2439  
fax: 021-455-672

**ADRESA:**  
Trg Dositeja Obradovića 6  
21000 Novi Sad  
Srbija  
[www.izzs.uns.ac.rs](http://www.izzs.uns.ac.rs)  
[www.ftn.uns.ac.rs](http://www.ftn.uns.ac.rs)

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



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

**INŽENJERSTVO TRETMANA I ZAŠTITE VODA**


Program dvogodišnjih master studija Inženjerstvo tretmana i zaštite voda fokusiran je na inovativne principe u savremenim tehnološkim postupcima kolektovanja, prerade i ponovne upotrebe otpadnih voda, sa ciljem smanjenja stepena izloženosti i eliminacije ekotoksikološkog i rizika po ljudsko zdravlje.

**USLOVI ZA UPIS**

Završene osnovne akademske studije sa minimum 180 ESPB iz srodnih oblasti.  
Konkurs će biti objavljen na web adresama Fakulteta tehničkih nauka u Novom Sadu i Departmana za inženjerstvo zaštite životne sredine i zaštitu na radu

[www.izzs.uns.ac.rs](http://www.izzs.uns.ac.rs)  
[www.ftn.uns.ac.rs](http://www.ftn.uns.ac.rs)

Za detaljne informacije o upisu kontaktirajte:  
ftnzastita@uns.ac.rs  
tel: 021-485-2439  
fax: 021-455-672

**PREDMETI**

1. GODINA	2. GODINA
Vsi kursa metrologije 1 Analiza sistema zaštite životne sredine Analiza toksičnosti materijala Tehnički pregled i kontrola kvaliteta voda Hidrotehnički objekti i sistemi Upravljanje čvrstim otpadom Monitoring i upravljanje sistemima Izborni predmet 1 (bira se 1 od 2) Osnove hidrotehnike, hidromehanike i geotehnike Hemijski izvori zagađenja životne sredine Izborni predmet 2 (bira se 1 od 3) Praktikum zaštite životne sredine Hazardi i životna sredina Hidraulika podzemnih voda Izborni predmet 3 (bira se 1 od 2) Upravljanje sistemima u zaštiti životne sredine Tehnologije obnovljivih izvora energije Izborni predmet 4 (bira se 1 od 2) Hidrometrija Osnovi bioloških principa zaštite životne sredine Projektovanje procesa tretmana vode za piće Alternativni separacioni procesi u tretmanu voda Upravljanje kvalitetom vode / metode renesancije sedimenta Hidraulika tečnosti u otvorenim tokovima Stručna praksa Projektovanje procesa tretmana otpadnih voda Izborni predmet 1 (bira se 1 od 2) Projektovanje sistema upravljanja zaštitom životne sredine Napredno sanitarno inženjerstvo Master rad - Studijski istraživački rad Master rad - izrada i odbrana	Obavezni predmeti Izborni predmeti Završni rad



**AKADEMSKA TITULA:**

MASTER INŽENJER TRETMANA I ZAŠTITE VODA

**TRAJANJE STUDIJA:**

2 GODINE – 4 SEMESTRA

**BROJ ESPB BODOVA:**

120

**UPISNA KVOTA:**

16 STUDENATA (BUDŽET)

**JEZIK NA KOM SE IZVODI STUDIJSKI PROGRAM:**

SRPSKI I ENGLESKI





## University of Sarajevo (UNSA)

UNIVERZITET U SARAJEVU  
GRAĐEVINSKI FAKULTET

**Master studij  
HIDROTEHNIKA I OKOLIŠNO INŽENJERSTVO**

**MASTER AKADEMSKE STUDIJE**

akademska titula:  
**Magistar građevinarstva/  
Diplomirani inženjer građevinarstva,**  
Odsjek za hidrotehniku i okolišno inženjerstvo

trajanje studija:  
**2 školske godine (4 semestra)**  
broj bodova:  
**120 ECTS**  
upisna kvota (budžet):  
**15 studenata**  
**+ 2 strana studenata**

**Uslovi upisa**

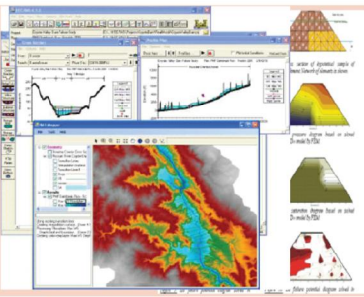
Bolonjski proces na Građevinskom fakultetu Univerziteta u Sarajevu je fokusiran na trociklični model studija.

a) prvi ciklus studija koji vodi do zvanja završenog dodiplomskog studija (the degree of Bachelor), traje tri studijske godine, a vrednuje se sa 180 ECTS bodova,

b) drugi ciklus studija koji vodi do stručnog zvanja magistra / diplomirani inženjer građevinarstva, stečenog nakon završenog dodiplomskog studija, traje dvije studijske godine, a vrednuje se sa 120 ECTS bodova, i to tako da u zbiru s prvim ciklusom studija nosi 300 ECTS bodova,

c) treći ciklus studija koji vodi do naučnog zvanja doktora ili ekvivalenta, traje tri studijske godine, a vrednuje se sa 180 ECTS bodova.


Na master studije mogu se upisati kandidati koji su završili odgovarajuće osnovne akademske studije ostvarivši najmanje 180 ECTS bodova, odnosno kandidati



Kofinansirna  
Evropska unija  
program Erasmus+

Ova publikacija odražava stavove ličnuje svojih autora. Evropska komisija se ni na koji način ne može smatrati odgovornom za sadržaj stavove izložene u ovoj publikaciji.


UNIVERZITET U SARAJEVU




GRAĐEVINSKI FAKULTET

**Odsjek za hidrotehniku  
i okolišno inženjerstvo**

**MASTER AKADEMSKE  
STUDIJE (II CIKLUS STUDIJIA)**



www.gf.unsa.ba



**Kompetencije**  
diplomiranih studenata usmjerenja  
Hidrotehnika i okolišno inženjerstvo:

Završetkom studijskog programa i stjecanjem kvalifikacije student/ica je osposobljen/a za:

- § projektiranje hidrotehničkih objekata namjenjenih za korištenje voda, zaštitu voda i zaštitu od voda i radova na uređenju i restauriranju vodotoka
- § formuliranje i rješavanje jednačbi matematičke fizike na inženjerskim zadacima, te njihovo rješavanje u zatvorenom obliku ili numeričkim metodama
- § analiziranje i vrednovanje toka podzemne vode, hidrogeoloških značajki stijena, rješavanje praktičnih problema vezanih za sektor vodoprivrede
- § rješavanje problema oštećenja na slivu, vrednovanje komponenti oštećenja i bilance voda, primjenu matematičko-statističkih metoda za rješavanje inženjersko-hidroloških problema
- § integralno upravljanje vodnim resursima
- § proračun bilance voda za potrebe hidromelioracijskih sustava te poznavanje elemenata projektiranja i dimenzioniranja sustava odvodnje i navodnjavanja
- § planiranje iskorištenja vodnih snaga, upravljanje i projektiranje energetskih objekata
- § formuliranje fizikalnog i matematičkog modela, rješavanje matematičkog modela korištenjem konvencionalnih numeričkih i stohastičkih metoda
- § korištenje savremenih softvera u hidrotehnici

Osim nabrajanih, student/ica stječe i dodatne kompetencije ovisno o položenim izbornim predmetima tijekom studija.

**Izvod iz nastavnog plana i programa**

Master akademske studije:  
**ODSJEK ZA HIDROTEHNIKU  
I OKOLIŠNO INŽENJERSTVO  
(4 semestra) 120 ECTS**

**Studijski program master studija**

- **Trinaest (13) obaveznih predmeta:** Hidraulika, Hidrologija, Inženjerska matematika III, Priprema vode za piće, Vodna odbijevanje, Odvođenje otpadnih voda, Upravljanje čvrstim otpadom I, Zaštita okoliša, Hidrotehničke građevine II, Prerađa otpadnih voda, Riječna hidrotehnika, Upravljanje projektom, Zaštita voda I

Obavezni predmeti učestvuju sa 71 ECTS bod.

- **Sedam (7) izbornih predmeta**  
Hidro dinamika podzemnih voda, Hidrogeologija, Integralno upravljanje vodnim resursim, a Hidroenergetika, Hidrotehničke melioracije, Numerička hidraulika, Stohastička hidrologija

Izborni predmeti učestvuju sa 36 ECTS bodova.

- **Završni rad - 30 ECTS bodova**

«Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama na Zapadnom Balkanu»

Broj projekta: 597888-EPP-1-2018-1-RS-EPPKA2-CBHE-JP

**Akademska titula**  
**Magistar građevinarstva/  
diplomirani inženjer građevinarstva,**  
Oblast: Hidrotehnika i okolišno inženjerstvo

Na master studij se mogu upisati svi kandidati (sa BiH državljanstvom i iz inostranstva) pod istim uvjetima, a koji:

- imaju završen I ciklus studija u trajanju od 3 godine, (180 ECTS)
- ili su završili 4 - godišnji studij po predbolonjskim nastavnim planovima i programima

**Postupak prijave za upis na II ciklus studija**

- nakon objave konkursa za upis studenata na Univerzitetu u Sarajevu, kandidati svoje prijave mogu podneti Građevinskom fakultetu u Sarajevu u skladu sa konkursom i pravilima studiranja
- konkurs će biti objavljen na web adresama Fakulteta i Univerziteta: [www.gf.unsa.ba](http://www.gf.unsa.ba) i [www.unsa.ba](http://www.unsa.ba)
- za detaljne informacije o upisu kontaktirati Studentsku službu GF-a: Patriotske lige 30, 71000 Sarajevo t: +387 33 278 434



## University of Montenegro (UoM)

OSNOVNE STUDIJE:  
 Studijski program: GRAĐEVINARSTVO  
 MASTER STUDIJE GRAĐEVINARSTVO - INFRASTRUKTURA  
 Modul 2 : HIDROTEHNIKA

Kofinancira  
 Evropska unija  
 program Erasmus+



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UNIVERZITET CRNE GORE  
 GRAĐEVINSKI FAKULTET



## OSNOVNE AKADEMSKE STUDIJE (OAS)

akademska titula:  
 Bečelior građevinarstva  
 trajanje studija:  
 3 školske godine (6 semestra)  
 broj bodova:  
 180 ECTS  
 upisna kvota (budžet):  
 120 studenata



## Novi studijski programi

OSNOVNE AKADEMSKE  
 STUDIJE - GRAĐEVINARSTVO

MASTER AKADEMSKE  
 STUDIJE

STUDIJSKI PROGRAM  
 GRAĐEVINARSTVO - INFRASTRUKTURA  
 MODUL - HIDROTEHNIKA

## MASTER AKADEMSKE STUDIJE (MAS)

akademska titula:  
 master građevinarstva  
 trajanje studija:  
 2 školske godine (4 semestra)  
 broj bodova:  
 120 ECTS  
 upisna kvota (budžet):  
 60 studenata



Master studijski  
 program startuje  
 školske: 2020/2021  
 godine

## kontakt:

Bulevar Džordža Vašingtona b.b.  
 81000 Podgorica, Crna Gora  
 tel : +38220244905  
 email: [gf@ucg.ac.me](mailto:gf@ucg.ac.me)

[www.ucg.ac.me/gf](http://www.ucg.ac.me/gf)

GF PODGORICA

## KOMPETENCIJE DIPLOMIRANIH STUDENATA

prepoznavanje, razumijevanje i analiziranje opštih fenomena i problema građevinarstva i pronalaženje odgovarajućih rješenja, posebno u grani hidrotehnike

- primjena stečenih znanja i vještina pri planiranju, projektovanju, izvođenju, nadzoru i održavanju hidrotehničkih građevinskih objekata i sistema
- sticanje novih znanja i iskustva, donošenje naučnih stručno utemeljenih zaključaka i razvoj naučnih naučno stručnih istraživanja
- mogućnost nastavka školovanja na doktorskim studijama

Nastavni plan i program master studija (MAS) Infrastruktura - hidrotehnika unaprijeđen je i modernizovan kroz SWARM Erasmus + projekat :

"Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama Zapadnom Balkanu"

## Izvod iz nastavnog plana i programa

Osnovne studije (6 semestra) 180 ECTS

Studijski program osnovnih studija obuhvata: trideset četiri (34) obavezna predmeta i dva (2) izborna

Postoje dva modula :

KONSTRUKCIJE I INFRASTRUKTURA

Izbor modula obavlja se u šestom semestru Broj časova aktivne nastave je maksimum 27 čas nedeljno.

MAS - MODUL INFRASTRUKTURA (4 semestra) 120 ECTS

Studijski program master studija obuhvata: osamnaest (18) obaveznih predmeta i master rad

Broj časova aktivne nastave je maksimum 25 časova nedeljno.

## Uslovi upisa osnovnih akademskih studija (OAS)

Na osnovne studije GF UCG mogu se upisati kandidati koji su završili srednjoškolsko obrazovanje u trajanju od najmanje četiri (4) godine, odgovarajuće srednje škole.

## Uslovi upisa master akademskih studija (MAS)

Na master studije GF UCG mogu se upisati kandidati koji su završili odgovarajuće osnovne akademske studije od najmanje 180 ECTS kredita. Upis se vrši na konkurentskoj osnovi u skladu sa rezultatima postignutim na osnovnim studijama.

## Postupak prijave za upis:

Nakon objave konkursa za upis studenata Univerziteta Crne Gore, kandidati svoje prijave mogu podnijeti Građevinskom fakultetu u Podgorici u skladu sa konkursom i pravilima studiranja

Konkurs će biti objavljen na web stranama Fakulteta i Univerziteta: [www.ucg.ac.me/gf](http://www.ucg.ac.me/gf) i [www.ucg.ac.me](http://www.ucg.ac.me)



## Academy of Applied Studies in Kosovo and Metohija (AASKM)



**STRUKOVNA TITULA:**  
Specijalista strukovni inženjer zaštite životne sredine

**TRAJANJE STUDIJA:**  
1 godina (2 semestra)

**BRJ ESPB BODOVA:**  
60 ESPB

**UPIŠNA KVOTA:**  
16 studenata (samofinansirajući)





**VISOKA TEHNIČKA ŠKOLA  
STRUKOVNIH STUDIJA IZ UROŠEVCA  
sa privremenim sedištem u Leposaviću**



**SPECIJALISTIČKE  
STRUKOVNE  
STUDIJE  
ZAŠTITA VODA**

[www.vtsurosevac.com](http://www.vtsurosevac.com)






Koordinator:  
Univerzitet u Nišu  
Univerzitetski trg 2  
18000 Niš, Srbija  
[www.ni.ac.rs](http://www.ni.ac.rs)



Kofinansiraju  
Evropska unija  
Erasmus + Program



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ERASMUS+ Project



**KOMPETENCije:**

Savladavanje programskih sadržaja studijskog programa specijalističkih strukovnih studija Zaštita voda student stiče opšte i predmetno-specifične sposobnosti koje su u funkciji kvalitetnog obavljanja stručne i naučne delatnosti.

- prikupljanja relevantnih informacija u oblasti struke;
- uspešno rešavanje složenih problema;
- primenjivanja stečenih znanja;
- praćenja i kritičkog prihvatanja novih stručnih saznanja;
- prenošenja i komunikacije ideja, problema i rešenja;
- uvažavanje etičkih normi i odgovornosti;
- sposobnost za timski rad.

Natavni plan i program specijalističkih strukovnih studija Zaštita voda razvijen je i akreditovan u okviru SWARM Erasmus+ projekta:



**«Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama na Zapadnom Balkanu»**

**USLOVI UPISA:**

Na specijalističke strukovne studije Zaštita voda mogu se upisati kandidati koji su završili odgovarajuće osnovne strukovne studije ostvarivši najmanje 180 ESPB bodova, odnosno kandidati koji su završili osnovne strukovne studije drugoj visokoškolskoj ustanovi u okviru obrazovnonaučnog polja Tehničko-tehnološke nauke, ostvarivši najmanje 180 ESPB bodova.




**POSTUPAK PRIJAVE:**

Nakon objave konkursa za upis studenata na, kandidati svoje prijave mogu podneti visokoškolskoj ustanovi u skladu sa konkursom. Uz prijavu se podnosi sledeća dokumentacija:

- Izvod iz matične knjige rođenih.
- Uverenje o diplomiranju na osnovnim strukovnim studijama.

**ZA SVE INFORMACIJE OKO UPISA  
OBRATITI SE NA TELEFONE:**

028/84-108 - sekretar  
028/84-106 - tel/fax. st. služba  
064/20-11-713 - šef st. službe

[vtssustanova@vtsurosevac.com](mailto:vtssustanova@vtsurosevac.com)

**CILJEVI:**

Osnovni cilj studijskog programa je da se na kvalitetan, savremen i pristupačan način, kroz teorijsku i praktičnu nastavu obrazuju strukovni inženjeri specijalisti zaštite životne sredine.

Posebni ciljevi studijskog programa specijalističkih strukovnih studija Zaštita voda su:

- usvajanje naprednih pojmova iz oblasti zaštite životne sredine;
- obrazovanje stručnjaka koji poseduju neophodno znanje iz opštih naučnih disciplina povezanih sa zaštitom životne sredine (osnove zaštite vodnih resursa, održivi razvoj i zaštita životne sredine, upravljanje i razvoj ljudskih resursa u zaštiti...) radi formiranja realne slike o procesima koji se dešavaju u prirodi, izgrađenom okruženju i životnoj sredini;
- integracija osnovnih tehničkih, računarsko-informacionih i komunikacionih znanja u skladu sa potrebama proizvodnih oblasti zaštite životne sredine;
- osposobljavanje za kritičku analizu funkcionisanja zaštite životne sredine itd.

**VISOKA TEHNIČKA ŠKOLA  
STRUKOVNIH STUDIJA iz Uroševca  
sa privremenim sedištem u Leposaviću**

Ul. 24 novembar bb  
38218 Leposavić

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



## University of Pristina in Kosovska Mitrovica (UPKM)




**STUDIJSKI PROGRAM:**  
Inženjerstvo zaštite životne sredine i zaštite na radu

**OSNOVNE AKADEMSKE STUDIJE (OAS)**

**AKADEMSKA TITULA:**  
Diplomirani inženjer zaštite životne sredine i diplomirani inženjer zaštite na radu

**TRAJANJE STUDIJA:**  
4 godina (8 semestra)

**BROJ ESPB BODOVA:**  
240 ESPB

**UPISNA KVOTA:**  
35 studenata (budžet)

**MASTER AKADEMSKE STUDIJE (MAS)**

**AKADEMSKA TITULA:**  
Master inženjer zaštite životne sredine, Master inženjer zaštite na radu

**TRAJANJE STUDIJA:**  
1 godina (2 semestra)

**BROJ ESPB BODOVA:**  
60 ESPB

**UPISNA KVOTA:**  
13 studenata (budžet)






Koordinator:  
Univerzitet u Nišu  
Univerzitetski trg 2  
18000 Niš, Srbija  
www.ni.ac.rs



Koordinator:  
Evropska unija  
Erasmus + Program

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**OSNOVNE AKADEMSKE STUDIJE (OAS)**

**MASTER AKADEMSKE STUDIJE (MAS)**

**INŽENJERSTVO ZAŠTITE ŽIVOTNE SREDINE I ZAŠTITE NA RADU**

[www.ftnkm.rs](http://www.ftnkm.rs)




**KOMPETENCIJE:**

Савладавањем студијског програма студент стиче професионалну компетенцију за:

- мерење и контролу стања животне и радне средине,
- одржавање квалитета животне и радне средине,
- евидентирање, анализу и интерпретацију података о ефектима на животну и радну средину и ризицима,
- организовање и спровођење активности оцењивања ризика,
- разумевање и примену парадигме одрживог развоја и економских принципа заштите животне средине и заштите на раду,
- управљање системом заштите животне средине и заштите на раду у организацијама,
- употребу информационог и комуникационог технологија у праћењу новина у струци, у овладавању знањем и у решавању проблема заштите животне средине и радне средине.

Unapređenje plana i programa osnovnih i master studija Inženjerstvo zaštite životne sredine i zaštite na radu Ostvareno je u okviru SWARM Erasmus+ Projekta:

**«Razvoj master kurikuluma za upravljanje vodnim resursima u visokoškolskim institucijama na Zapadnom Balkanu»**

**IZVOD IZ NASTAVNOG PLANA I PROGRAMA:**

**OAS IZŽS I ZR (8 semestra) 240ESPB**

Studijski program se sastoji od dva modula i to inženjerstvo zaštite životne sredine i inženjerstvo zaštite na radu. U prvoj zajedničkoj godini, studenti se edukuju iz oblasti prirodno-matematičkih nauka i opštih predmeta. Modul Inženjerstvo zaštite životne sredine i Modul Inženjerstvo zaštite na radu na osnovnim studijama obuhvataju:

- 37 predmeta, od kojih su 12 izborni predmet,
- stručnu praksu,
- studijsko istraživački rad
- diplomski rad



**MAS IZŽS I ZR (2 semestra) 60ESPB**

Studijski program master studija obuhvata:

- tri obaveznih predmeta,
- 4 izborna bloka (bira se po 1 od 3 ponuđena predmeta po bloku),
- stručnu praksu u trajanju od 90 časova u toku semestra,
- studijsko-istraživački rad i
- master rad.

Izborni predmeti učestvuju sa 21 ESPB bodova. Broj časova aktivne nastave je 22 časa nedeljno.

**USLOVI UPISA:**

**Uslovi upisa osnovnih akademskih studija (OAS)**

Na osnovne studije IZŽS i IZR mogu se upisati kandidati koji su završili srednjoškolsko obrazovanje u trajanju od najmanje četiri (4) godine i koji su položili prijemni ispit iz oblasti matematike. Prijemni ispit organizuje Fakultet nakon objavljivanja konkursa za upis novih studenata.

**Uslovi upisa master akademskih studija (MAS)**

Na master studije IZŽSIZR mogu se upisati kandidati koji su završili odgovarajuće osnovne akademske studije ostvarivši najmanje 240 ESPB bodova, odnosno kandidati koji su završili osnovne akademske studije na fakultetu ili na drugoj visokoškolskoj ustanovi u okviru obrazovnonaunog polja Tehničko-tehnoške nauke, ostvarivši najmanje 240 ESPB bodova.

Nakon objave konkursa za upis studenata na Univerzitetu u Prištini sa privremenim sedištem u Kosovskoj Mitrovici, kandidati svoje prijave mogu podneti Fakultetu tehničkih nauka u Kosovskoj Mitrovici u skladu sa konkursom i pravilima studiranja.

- konkurs će biti objavljen na web adresi Fakulteta: [www.ftnkm.rs](http://www.ftnkm.rs)
- za detaljne informacije o upisu kontaktirati Službu za studentska pitanja FTN-a:

**a: Knjaza Miloša 7, 38220 Kosovska Mitrovica**  
**t: +381(0)28425320,**  
**e: office@ftn.pr.ac.rs**

## 4. Roundtables with the non-academic sector

Seven roundtables were organized by the WB project partners (<http://www.swarm.ni.ac.rs/activities?id=57>) i.e.

- Academy of Applied Studies in Kosovo and Metohija (AASKM) – 03 November 2020
- University of Nis (UNI) - 19 May 2021
- Dzemal Bijedic University of Mostar (UNMO) - 24 June 2021
- University of Pristina in Kosovska Mitrovica (UPKM) – 25 June 2021
- University of Montenegro (UoM) – 28 June 2021
- University of Sarajevo (UNSA) – 01 July 2021
- University of Novi Sad (UNS) – 13 October 2021

The goal of the roundtables is to inform representatives from the non-academic sector regarding SWARM study programmes and developed training in the field of water resources management (WRM).

For the promotion of developed training in the field of water resources management leaflet have been designed in English and Serbian.



**SWARM** ERASMUS+ Project

**TARGET AUDIENCE:**

- Experts in the water sector
- Decision makers working with local people in governments
- NGOs oriented to water resources development programs
- Staff working in higher education

**LOCATION:**

7 cities in the Western Balkan countries

Mostar  
Kosovska Mitrovica  
Sarajevo  
Niš  
Novi Sad  
Podgorica  
Leposavić

**TIME AND DURATION:**

- 3-day training (8 hours per day) are scheduled for December 2020

**TRAINING COACHES:**

- Experienced academic professionals from SWARM Erasmus+ project consortium

**TRAINING METHODOLOGY:**

- Classroom lectures
- Laboratory demonstrations
- Open field training
- Case studies examinations and simulations
- Best practice examples

**TRAINING GROUP SIZE:**

- 30 participants

Coordinator:  
University of Niš  
Univerzitetski trg 2  
18000 Niš, Serbia  
www.ni.ac.rs

Co-funded by the Erasmus+ Programme of the European Union

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**swarm**

**TRAINING on WATER RESOURCES MANAGEMENT**

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



ERASMUS+ Project Strengthening of Master Curricula in Water Resources Management for the Western Balkans HEIs and stakeholders



- SESSION 1:**  
Water Management and Climate Change Adaptation
- SESSION 2:**  
Water - Scarce Resource
- SESSION 3:**  
Flood and Drought Risk Management
- SESSION 4:**  
Managing the Quality of Storm waters
- SESSION 5:**  
Wastewater Treatment and Reuse of Treated Wastewater
- SESSION 6:**  
IT Tools in the Water Resources Management
- SESSION 7:**  
Innovation in the Water Sector

**TRAINING PROGRAMME:**



SEWAGE Retention Watercourse  
Pollution Purification watershed  
Lack of Water TANK groundwater Drought  
Spring water shortage DISCHARGE  
drainage Storm water  
natural drinking water Hydrology  
WATERWAY water area  
steams RESOURCES  
Hydraulics Irrigation



**TRAINING DESCRIPTION:**

Sustainable management of water resources and access to safe water is essential for improving economic growth and productivity. Drivers such as urbanization, demographic and climatic changes increase stress on water resources. Instead of the traditional approach, a more holistic approach to water management is essential. This training is designed to aid in the management of water resources in a more efficient, equitable and sustainable ways.



**TRAINING OBJECTIVES:**

- Learn concepts in water resource management and water policy.
- Gain skills in managing the quality of stormwaters.
- Gain skills on water quality, its components, and interventions.
- Understand the causes of water resource conflicts and resolution measures.
- Gain skills on water supply waste management techniques.
- Gain skills in using IT tools in the water resources management.

**SWARM project specific objectives:**

- Improve the level of competencies and skills in WBHEIs
- Design and implement seven new and up-to-date laboratories
- Develop and implement LLL courses for the water sector

Interdisciplinary harmonization Bologna  
skills Innovative competencies  
Modern curriculum  
advanced laboratory ECTS  
innovative teaching knowledge  
ICT Master  
innovative learning

**ENHANCING PROFESSIONAL SKILLS**



Trained professionals to manage water resources efficiently and sustainably!

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



ERASMUS+ Projekat

**CILJANI UČESNICI:**

- Stručnjaci iz sektora vodoprivrede
- Javna administracija uključena u rad lokalne zajednice
- NVO orjentisane prema razvoju programa u vezi vodnih resursa
- Zaposleni u visokom obrazovanju

Mostar  
Kosovska Mitrovica  
Sarajevo  
Niš Novi Sad  
Podgorica  
Leposavić

**LOKACIJA:**

- 7 gradova u državama Zapadnog Balkana

**VREME I TRAJANJE:**

- Trodnevni treninzi (8 sati po danu) planirani su za decembar 2020.

**PREDAVAČI:**

- Eminentni stručnjaci iz konzorcijuma SWARM Erasmus+ projekta

**NAČIN IZVOĐENJA OBUKE:**

- Predavanja u učionici
- Pokazni ogledi u laboratoriji
- Obuka na otvorenom terenu
- Ispitivanja i simulacije studija slučaja
- Primeri dobre prakse

**VELIČINA GRUPE ZA OBUKU:**

- 30 učesnika



Koordinator:  
Univerzitet u Nišu  
Univerzitetski trg 2  
18000 Niš, Srbija  
[www.ni.ac.rs](http://www.ni.ac.rs)



Ovaj projekat je kofinanciran uz pomoć Evropske Komisije. Publikacija odražava stavove sudjelujućih članova. Komisija ne preuzima nikakvu odgovornost za sadržaj i stavove iznešene u ovoj publikaciji.



**OBUKA ZA UPRAVLJANJE VODNIM RESURSIMA**

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



**PROGRAM TRENINGA:**

**SESIJA 1:**  
Upravljanje vodama i adaptacija na klimatske promene

**SESIJA 2:**  
Voda - deficitarni resurs

**SESIJA 3:**  
Upravljanje rizicima od poplava i suša

**SESIJA 4:**  
Upravljanje kvalitetom voda

**SESIJA 5:**  
Tretman otpadnih voda i ponovna upotreba tretiranih otpadnih voda

**SESIJA 6:**  
IT alati u upravljanju vodnim resursima

**SESIJA 7:**  
Inovacije u sektoru vodoprivrede

**KANALIZACIJA**  
Retencija Vodotok  
Zagađenje sliv

**Prečišćavanje** Suša  
Nedostatak vode podzemne vode

**nedostatak vode**  
Izvor TANK  
drenaža Olujne vode PRAŽNJENJE  
prirodno voda za piće Hidrologija

**RESURSI** vodna zona  
Ispust za vodu  
lokoviti **Navodnjavanje**  
Hidraulika




**OPIS TRENINGA:**

Održivo upravljanje vodnim resursima i dostupnost bezbedne vode je esencijalna za obezbeđenje ekonomskog rasta i produktivnosti. Pojave poput intenzivne urbanizacije, demografske i klimatske promene povećavaju pritisak na vodne resurse. Umesto dosadašnjeg tradicionalnog pristupa, za upravljanje vodama od izuzetnog je značaja holistički pristup. Ovaj trening je osmišljen kako bi pomogao upravljanje vodama na efikasniji, pravedniji i održivi način.




**CILJEVI TRENINGA:**

- Upoznavanje sa konceptima upravljanja vodnim resursima i vodnim politikama.
- Sticanje veština za upravljanje kvalitetom voda.
- Sticanje veština za upravljanje kvalitetom vode, komponentama i intervencijama.
- Razumevanje uzroka konflikta u vezi vodnih resursa i mera rešavanja takvih konflikata.
- Sticanje veština u tehnikama upravljanja vodosnabdevanjem i otpadnim vodama.
- Sticanje veština za korišćenje IT alata za upravljanje vodnim resursima.

**SWARM projekat - posebni ciljevi:**

- Unapređenje nivoa kompetencija i veština u visokoškolskim institucijama Zapadnog Balkana
- Osmišljavanje i implementacija sedam novih i savremenih laboratorija
- Razvoj i implementacija kurseva celoživotnog obrazovanja u sektoru vodoprivrede

**Interdisciplinarno**  
harmonizacija Bolognja  
veštine **Inovativno** kompetencije  
**Moderan kurikulum**  
napredan laboratorija ECTS  
inovativna nastava **znarje**  
ICT **Master**  
inovativno učenje

**UNAPREĐENJE PROFESIONALNIH VEŠTINA**



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## 5. Symposium for promoting WRM in WB

The International Symposium was an interdisciplinary forum where the research results and best practices in the field of Water Resources Management (WRM) were shared with all SWARM fellows and stakeholders from the entire world. At the same time, the event was the place for the promotion of the achieved results under the SWARM project to a wider audience.

Effective results can be realized exclusively with active involvement, unbiased judgment and constructive input of all the innovation processes. In that context, topics were carefully selected to provide up-to-date issues and to encourage productive discussion bringing fresh and original insights and concepts at the forefront.

The symposium presented different interdisciplinary research experiences, in order to create a dialogue to point up solutions and synergies related to sustainable and fair water resources management, highlighting strengths, potentialities, and critical issues. Also, the symposium was a place to make a synergy between different areas in the water sector and between academia, business sector and policy making bodies.

The following topics were discussed:

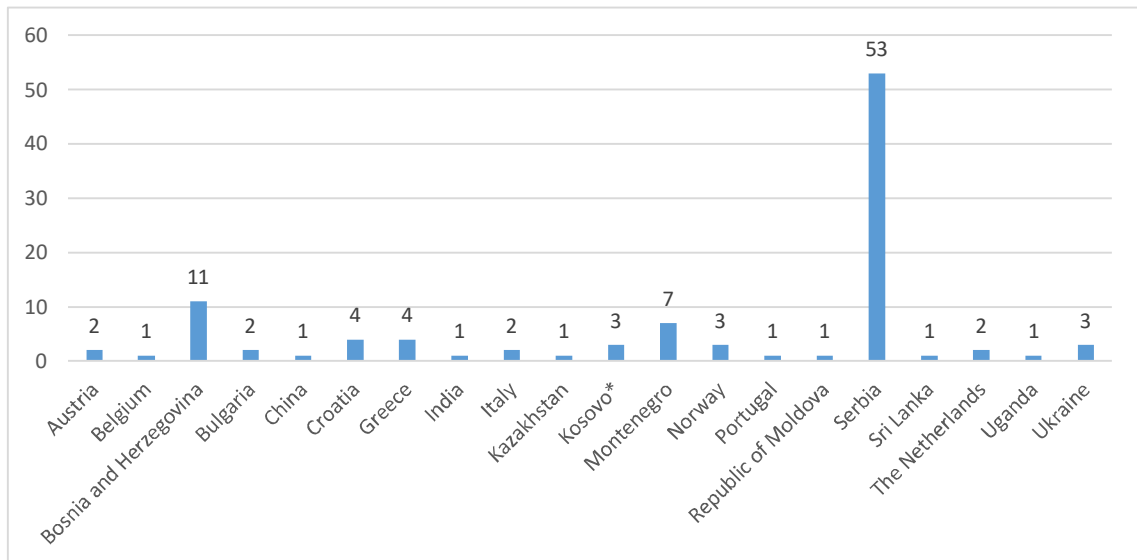
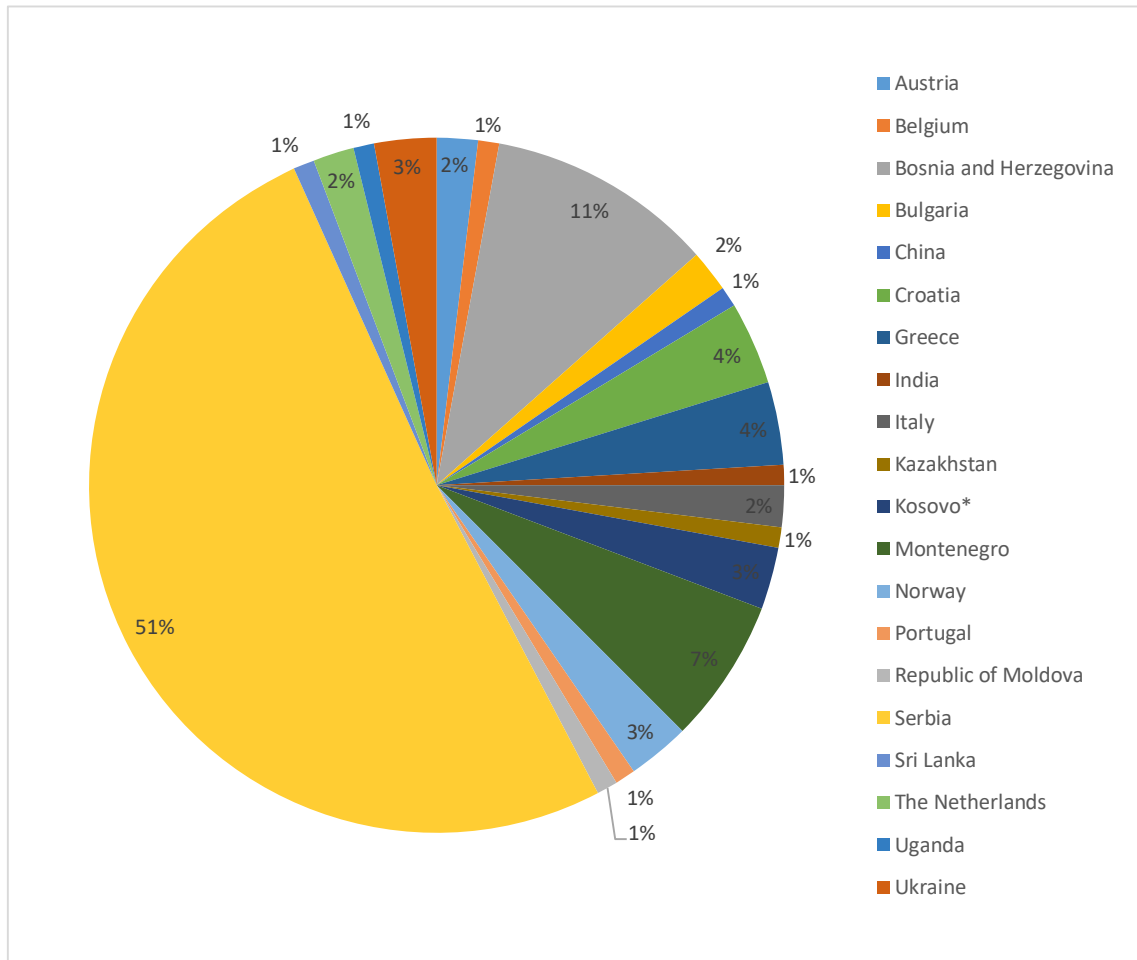
- Water resources planning and management under uncertainty, climate variability and climate change,
- Risk assessment and management of hydrological hazards,
- Integrated modelling of water resources: new directions,
- Water resources management in transboundary river basins,
- Hydropolitics and Water governance: current issues and future perspectives,
- Complexity of water resources management in WB countries,
- Capacity building in water resource management in HEIs,
- Technological advances in water resources management: remote sensing and data science methods,
- Water supply and wastewater management technology,
- Desalination and water reuse: opportunities and challenges,
- River flow modeling,
- Water management infrastructure.

Information related to the organized symposium was published in media:

[https://www.rtv.rs/sr\\_lat/vojvodina/novi-sad/upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse%E2%80%9C-okupilo-strucnjake-iz-regiona-\(audio\)\\_1274255.html](https://www.rtv.rs/sr_lat/vojvodina/novi-sad/upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse%E2%80%9C-okupilo-strucnjake-iz-regiona-(audio)_1274255.html)

<https://ekonec.wordpress.com/2021/09/23/odrzan-simpozijum-upravljanje-vodnim-resursima-nove-perspektive-i-inovativne-prakse/amp/>

The presentations can be downloaded from <http://www.swarm.ni.ac.rs/activities?id=90>.



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## 6. Webinar “Frontiers in Water Resources Management”

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 functioning of different sectors requires innovative, interdisciplinary, structural, and trans-boundary approach - strong coordination and cooperation across countries and across sectors.

The webinar was organized by the University of Nis (UNI), Norwegian University of Life Sciences (NMBU), University of Natural Resources and Life Sciences, Vienna (BOKU), Aristotle University of Thessaloniki (AUTH) and University of Sarajevo (UNSA).

The purposes of the webinar were to:

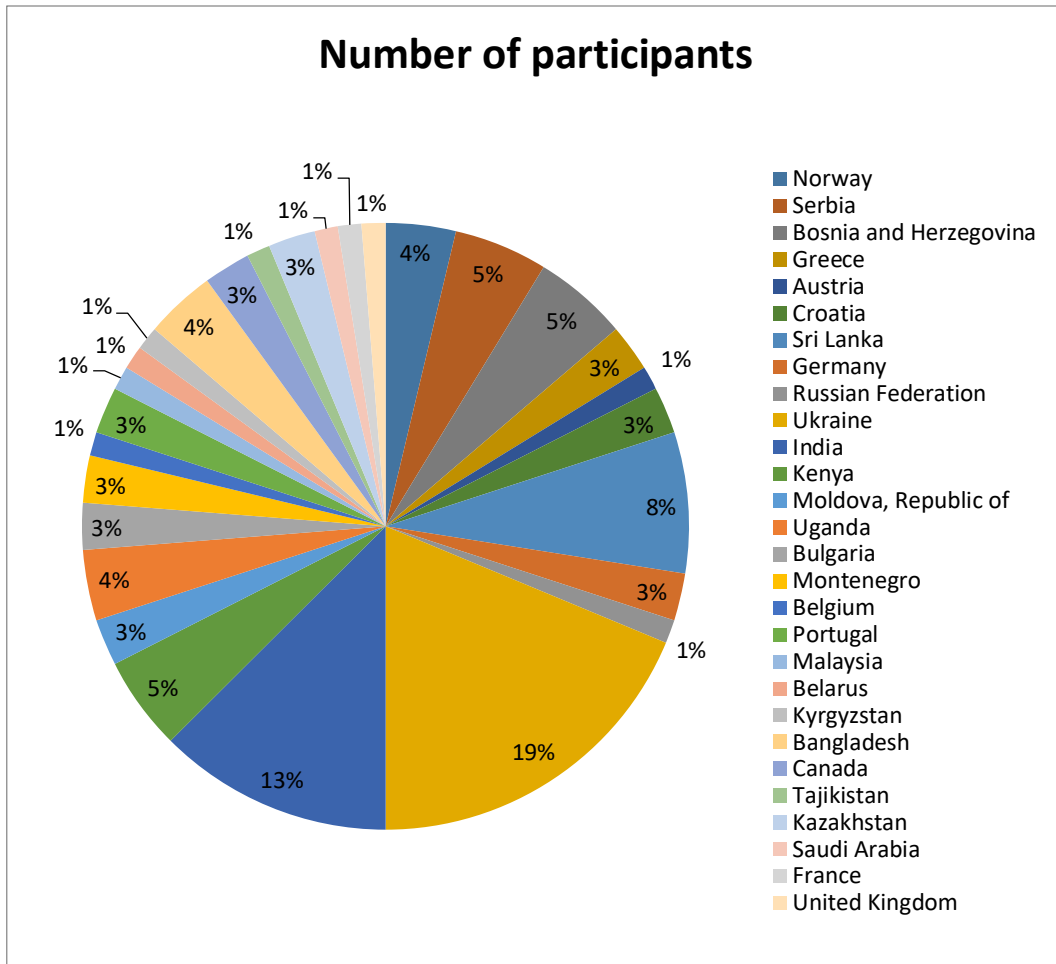
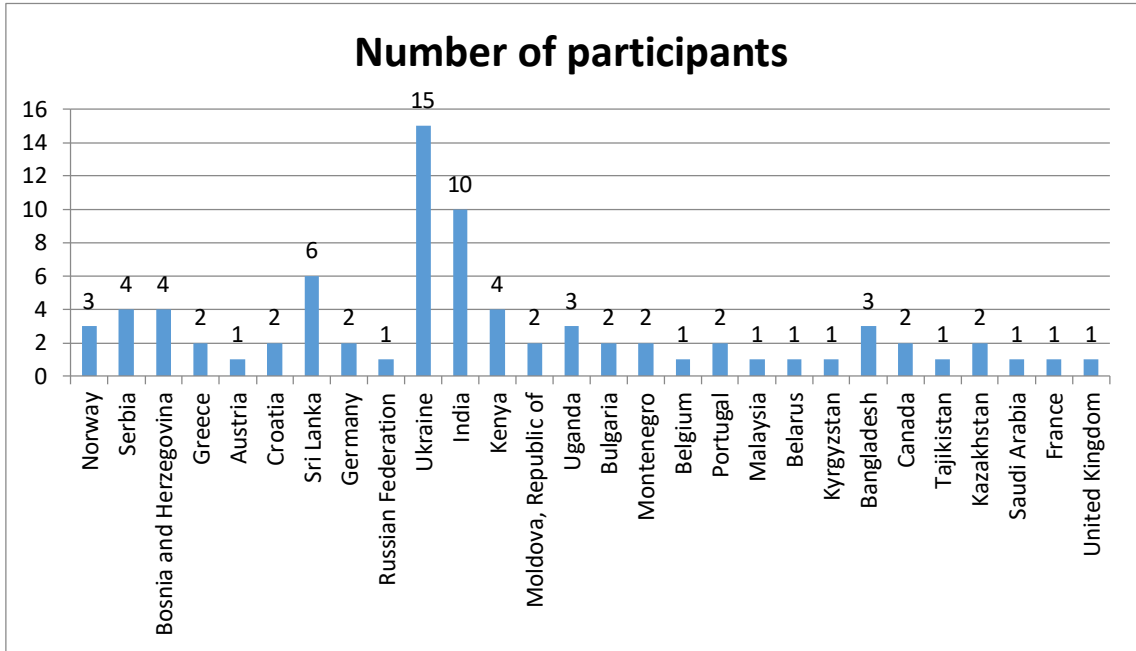
- Share projects’ outcomes and future ideas;
- Focus on knowledge exchanges with partners;
- Represent of water resources management issues.

The webinar presented different interdisciplinary research experiences, in order to create a dialogue to point up solutions and synergies related to sustainable and fair water resources management, highlighting strengths, potentialities, and critical issues.

In total 111 participants registered, 75 attended from 28 countries (Norway, Serbia, Bosnia and Herzegovina, Greece, Austria, Croatia, Sri Lanka, Germany, Russian Federation, Ukraine, India, Kenya, Republic of Moldova, Uganda, Bulgaria, Montenegro, Portugal, Belgium, Malaysia, Belarus, Kyrgyzstan, Bangladesh, Canada, Tajikistan, Kazakhstan, Saudi Arabia, France, United Kingdom) or 68% attendance rate.

The participants were from different specialties i.e. water and wastewater treatment, water resources management, water and wastewater transport and from different professions i.e. academia, utilities, consultants, policy makers.

The video material is available at <https://youtu.be/mtLSOAlSPmg> while the presentations can be downloaded from <http://www.swarm.ni.ac.rs/activities?id=55>.





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## 7. Workshop on the sustainability of the SWARM results

The Workshop was a chance to discuss how to achieve sustainability of the SWARM outputs after the project ending.

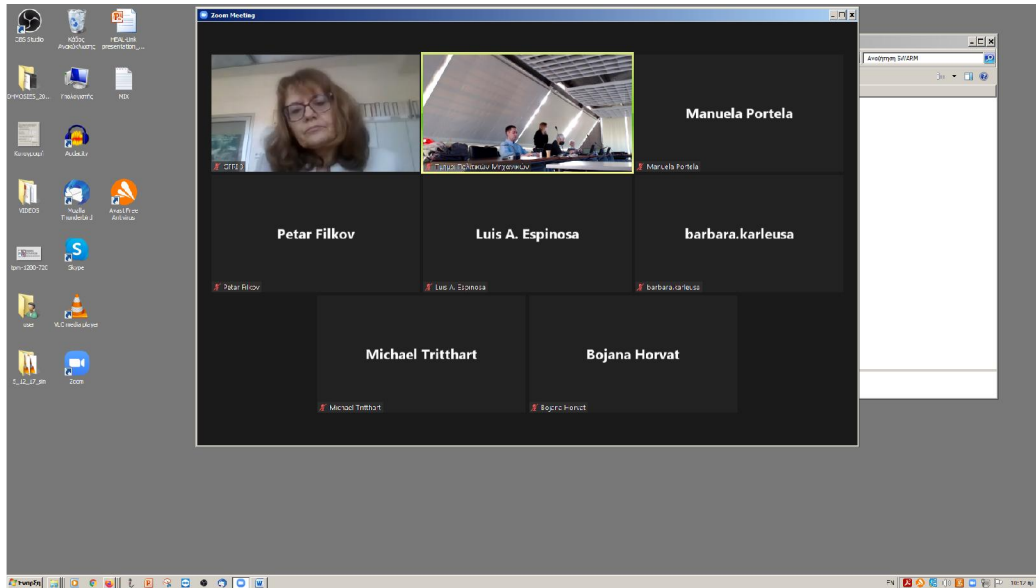
The following topics were discussed:

- dissemination and sustainability,
- experiences and good practices in the implementation of similar projects in programme partner countries,
- feedback from the organized schools,
- impact of the SWARM results on different levels.

In total, 25 participants attended (16 in-person and 9 online) from all partner institutions.

As conclusions of the discussion are:

- Organization of summer schools on regular basis
- To identify synergies in research interests among all partners
- Development of new LLL courses for professionals
- A new project idea relevant to the funding landscape
- New webinars for WB stakeholders
- Using the equipment for research projects
- Keep cooperation between HEI-WB, widely
- Continual improve syllabi regarding IWRM
- Motivate ourselves for self-development
- Explore ways of broader collaboration
- Cooperation with practice
- Use the equipment by students
- Organization of the symposium
- Dissemination through conferences, seminars, publications
- Develop training material for using new equipment
- Delegation of tasks should be more equally distributed
- To valorize the scientific capability of the partners and not only their geographical localization
- Promotion of developed/modernized master study programmes
- Stop working online and work in-person, end COVID
- Less reports and more scientific contributions,
- Adding new courses.



All materials are freely available at <http://www.swarm.ni.ac.rs/activities?id=98>.

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## 8. Final conference

The final conference was a chance to discuss the achieved project results.

The following topics were discussed:

- water resources management in the Western Balkans,
- importance of knowledge sharing,
- water resources management curricula in the Western Balkans,
- introducing LLL program to water professionals,
- keeping SWARM results alive.

In total, 45 participants attended (40 in-person and 5 online) from all partner institutions. It should be highlighted that representatives from the NEO Montenegro, Regional water supply company (associated partner) and EP Montenegro took part in the final conference.

The link where the information was published is

<https://www.ucg.ac.me/objava/blog/1287/objava/139466-na-gradevinskom-fakultetu-realizovan-jedan-od-24-erasmus-projekta-izgradnje-kapaciteta-univerziteta-crne-gore>

The current number of visits achieved on 28 April 2022 is 562.





Građevinski fakultet

01.04.2022

Na Građevinskom fakultetu realizovan jedan od 24 Erasmus+ projekta izgradnje kapaciteta Univerziteta Crne Gore

GRAĐEVINSKI FAKULTET /VIJESTI



Na Univerzitetu Crne Gore implementiraju se 24 Erasmus + projekta izgradnje kapaciteta, među kojima i projekat Građevinskog fakulteta UCG, čija je uspješna realizacija obilježena završnom konferencijom na ovom fakultetu. Riječ je o projektu "Jačanje master kurikuluma u upravljanju vodenim resursima - SWARM (Strengthening of master curricula in water resources management - SWARM)".

Rezultati ovog projekta Građevinskom fakultetu su omogućile pripremu programa master studija za oblast hidrotehnike, adaptaciju laboratorije za potrebe nastave na ovom smjeru, edukaciju stručnjaka za upravljanje vodenim resursima na osnovu iskustava univerziteta Evropske unije i saradnju sa privredom kroz kurseve za cjeloživotno obrazovanje.

Prekterica za internacionalizaciju UCG prof. dr **Sanja Peković** kazala je da su rezultati ovog projekta u skladu sa Strategijom internacionalizacije Univerziteta Crne Gore 2020-2025.

"Uspješna realizacija projekta SWARM je u potpunosti u skladu sa naporima Univerziteta Crne Gore na polju internacionalizacije i modernizacije nastave, poboljšanja ljudskih i tehničkih kapaciteta, i u krajnjem, želje da budemo servis društvu kroz program cjeloživotnog učenja i pružanja mogućnosti usavršavanja. Ekspertiza i podrška naših internacionalnih partnera je bila od ključnog značaja, pa im se ovom prilikom zahvaljujemo na podjeli njihovog iskustva i znanja", kazala je prekterka **Peković**.

All materials are freely available at <http://www.swarm.ni.ac.rs/activities?id=103>.