



# REPORT ON TRAINING OF TEACHING STAFF FOR ACQUIRING NEW TEACHING AND LEARNING METHODS

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University of Nis



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

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Author(s)	Milan Gocić, Michael Tritthart, Harsha Ratnaweera, Zakhar Maletskyi, Elisabeth Hoff, Maria Mavrova-Guirguinova, Petar Filkov, Iirna Ribarova, Vladimir Kukurin, Emil Tsanov, Mariana Koleva, Rodrigo Proença de Oliveira, Maria Manuela Portela, Luis Ribeiro, Barbara Karleuša, Panayotis Prinos, Skoulikaris Charalampos
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## List of abbreviations

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
LLL	Life Long Learning
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	Dzermal Bijedic University of Mostar
UNS	University of Novi Sad
UNSA	University of Sarajevo
UPKM	University of Pristina in Kosovska Mitrovica
TCASU	Technical College of Applied Sciences Urosevac with temporary seat in Leposavic
WRM	Water Resources Management

## 1 Introduction

Report on training of teaching staff for acquiring new teaching and learning methods is part of work package (WP) 2 “Development of competence-based curricula aligned with EU trends” and activity 2.5 “Theme-based training of teaching staff for acquiring new teaching and learning methods” of the Erasmus+ Capacity Building in the Field of Higher Education project „Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders“ (SWARM).

Six trainings were organised by EU project partners i.e.

- University of Architecture, Civil Engineering and Geodesy (UACEG) - 29 - 31 May 2019 (<http://www.swarm.ni.ac.rs/activities?id=27>)
- Norwegian University of Life Sciences (NMBU) - 17-20 June 2019 (<http://www.swarm.ni.ac.rs/activities?id=37>)
- Faculty of Civil Engineering as part of the University of Rijeka (UNIRIFCE) - 18-20 September 2019 (<http://www.swarm.ni.ac.rs/activities?id=42>)
- Aristotle University of Thessaloniki (AUPH) – 30 October-01 November 2019 (<http://www.swarm.ni.ac.rs/activities?id=44>)
- Universidade de Lisboa (UL) - 27-29 November 2019 (<http://www.swarm.ni.ac.rs/activities?id=45>)
- University of Natural Resources and Life Sciences, Vienna (BOKU) - 04-06 February 2020 (<http://www.swarm.ni.ac.rs/activities?id=46>)

The goal of the trainings is to educate WB teachers about innovative teaching methods as well as to improve the professional, pedagogical and methodological knowledge.

All presented materials, agendas, evaluation and participation lists, training reports, photos and videos are freely available at the SWARM website ([www.swarm.ni.ac.rs](http://www.swarm.ni.ac.rs)).

## 2 Lessons learned

### 2.1 University of Architecture, Civil Engineering and Geodesy (UACEG)

The first theme based training of teaching staff for acquiring new teaching and learning methods was held at the University of Architecture, Civil Engineering and Geodesy (UACEG) from 29th to 31st May 2019. All WB project partners took part at this training.

Twenty representatives from 8 partner institutions were present at the training (14 out of 20 were from WB partner HEIs – UNI, UNSA, UNS, UPKM, TCASU, UoM and UNMO).

The following topics were presented:

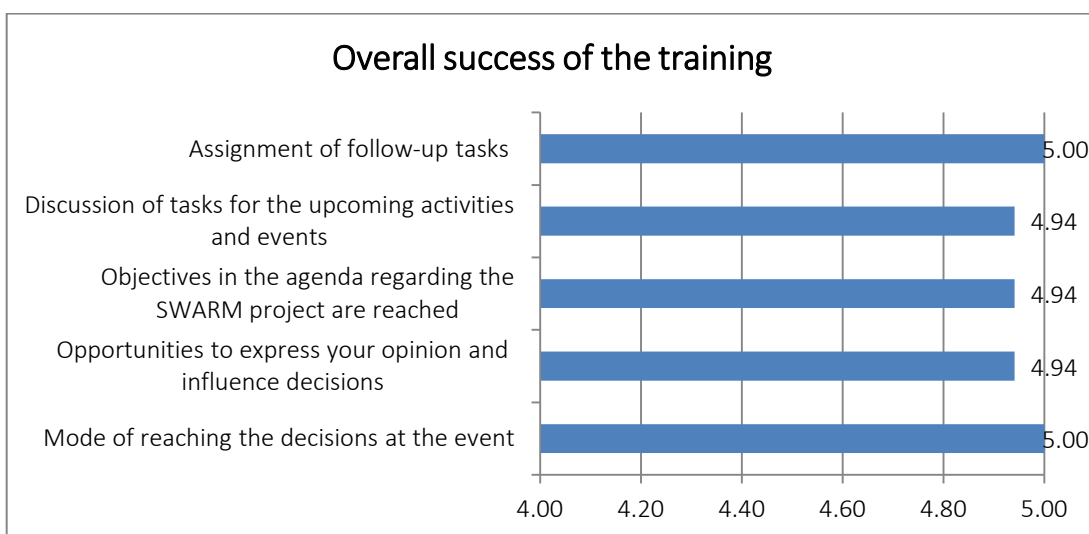
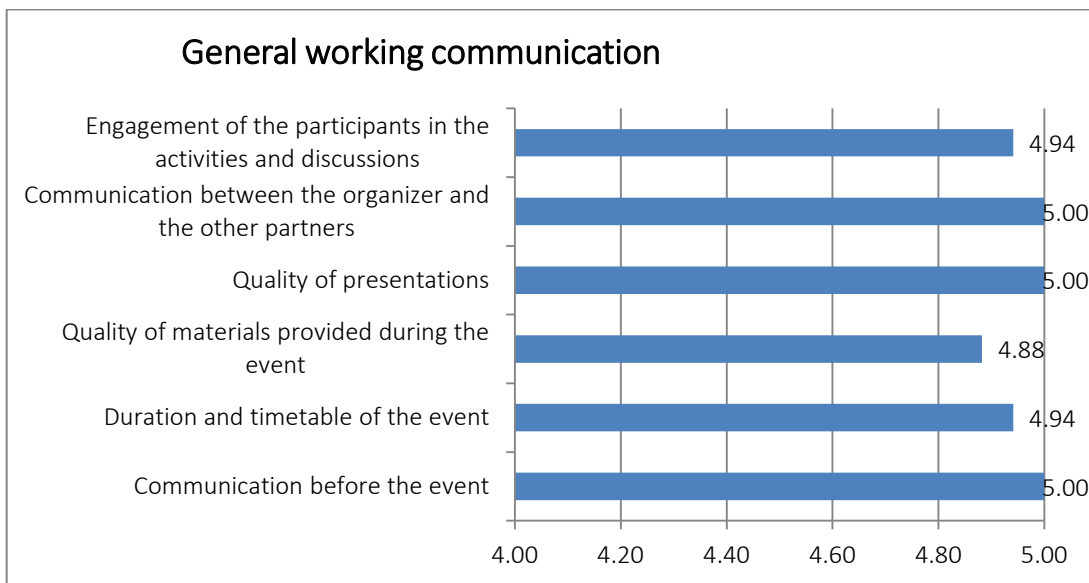
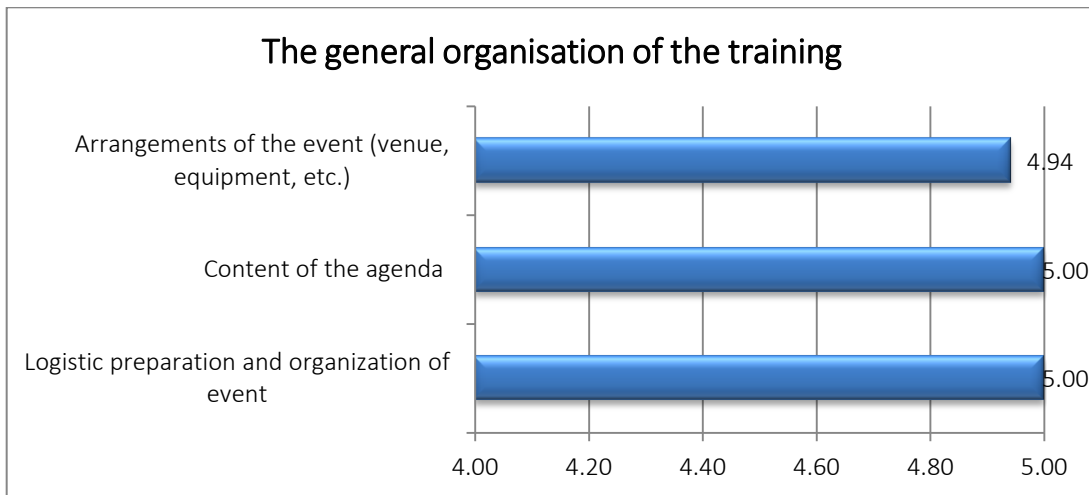
- Implementation of EU policies in Water Resources Management – Lessons Learnt in Bulgaria
- Circular economy policies for sustainable development in urban water management
- Demonstrating interactive educational tool: WAT-A-GAME
- Implementation of EU Floods directive. Hydrological and hydraulic modeling for the needs of the Flood Hazard and Flood Risk Mapping in Bulgaria
- Application of water balances for supporting River Basin Management planning
- Teaching and Learning Methods in UACEG

The study visit of Wastewater Treatment Plant “Kubratovo” – operated by “Sofiyska voda” AD (part of VEOLIA Group) was organized.

#### **Evaluation details**

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.







## 2.2 Norwegian University of Life Sciences (NMBU)

The second theme based training of teaching staff for acquiring new teaching and learning methods was held at the Norwegian University of Life Sciences (NMBU) from 17th to 19th June 2019. All WB project partners took part at this training.

Seventeen representatives from 8 partner institutions were present at the training (14 out of 17 were from WB partner HEIs – UNI, UNS, UNSA, UNMO, UPKM, TCASU and UoM).

The following topics were presented:

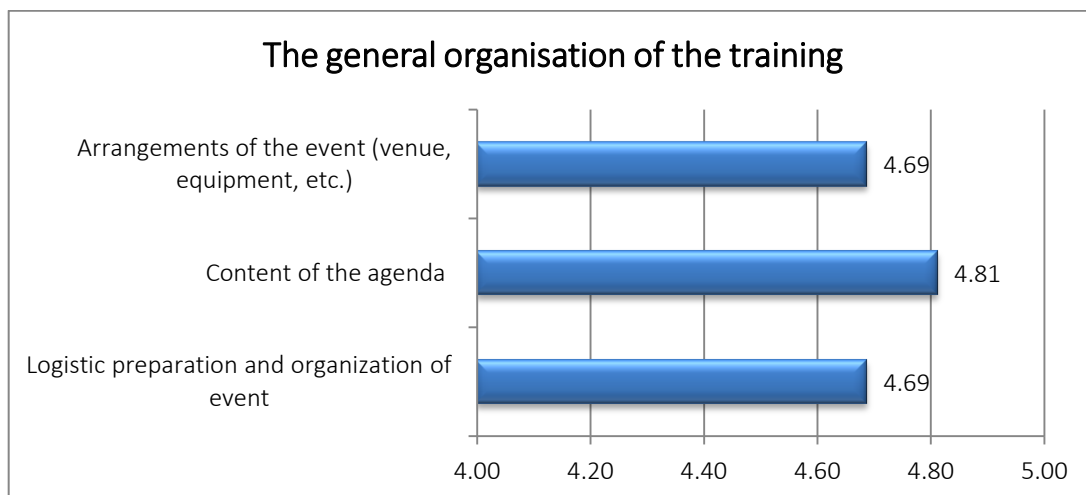
- Water – scarce resource: need for sound management
- Climate Change impacts: consequences of increased precipitation
- Use of digital tools in water education: Water-smart circular economy
- Problem-based learning: Introduction to project work
- Practice-based teaching approaches
- Internationalization of universities and harmonization of water-related higher education
- Digital tools in education: Conducting digital exams

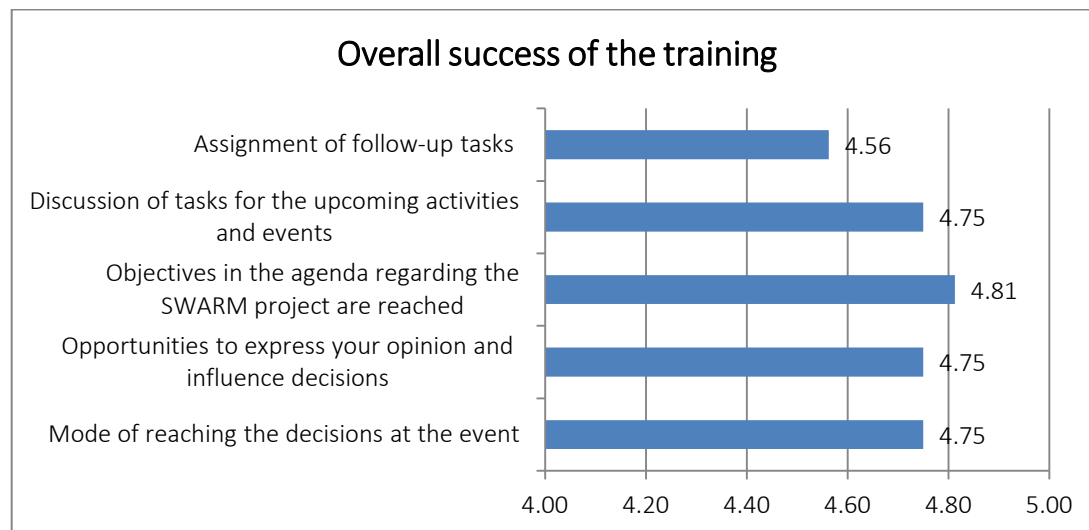
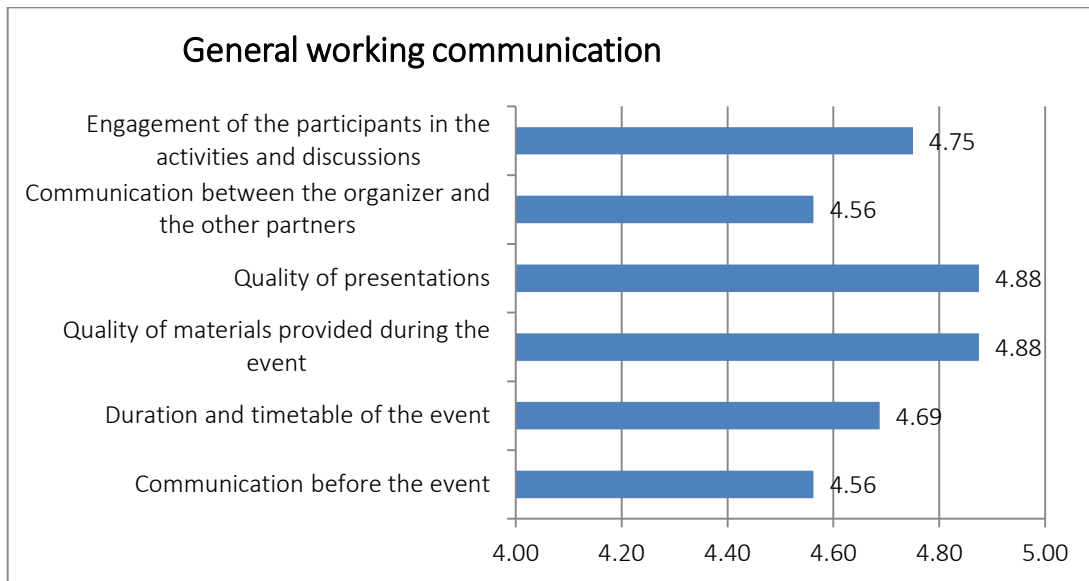
Educational tour to the underground wastewater treatment plant was organized.

### Evaluation details

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.







### 2.3 Faculty of Civil Engineering as part of the University of Rijeka (UNIRIFCE)

The third theme based training of teaching staff for acquiring new teaching and learning methods was held at the University of Rijeka, Faculty of Civil Engineering (UNIRIFCE) from 18th to 20th September 2019. All WB project partners took part at this training.

Twenty-three representatives from 8 partner institutions were present at the training (15 out of 23 were from WB partner HEIs – UNI, UNS, UNSA, UNMO, UPKM, TCASU and UoM).

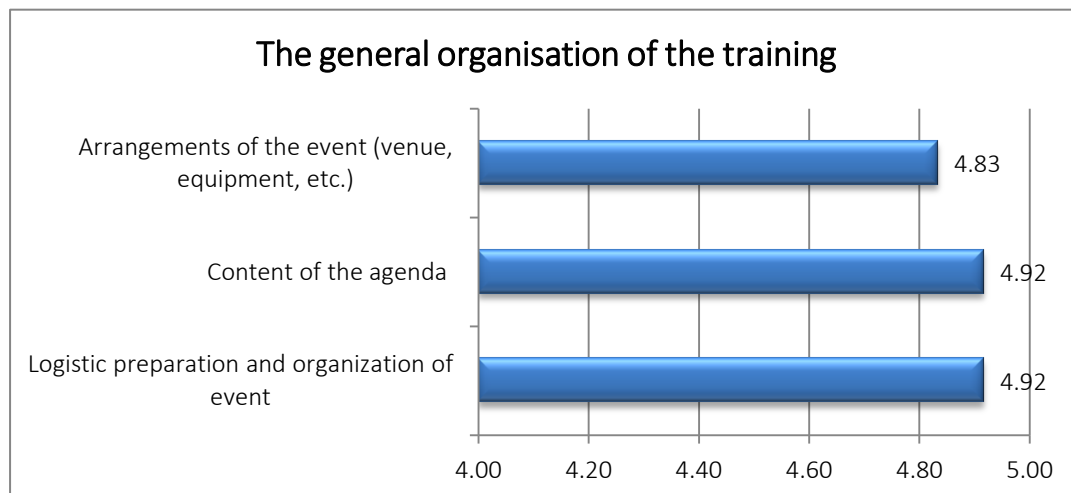
The following topics were presented:

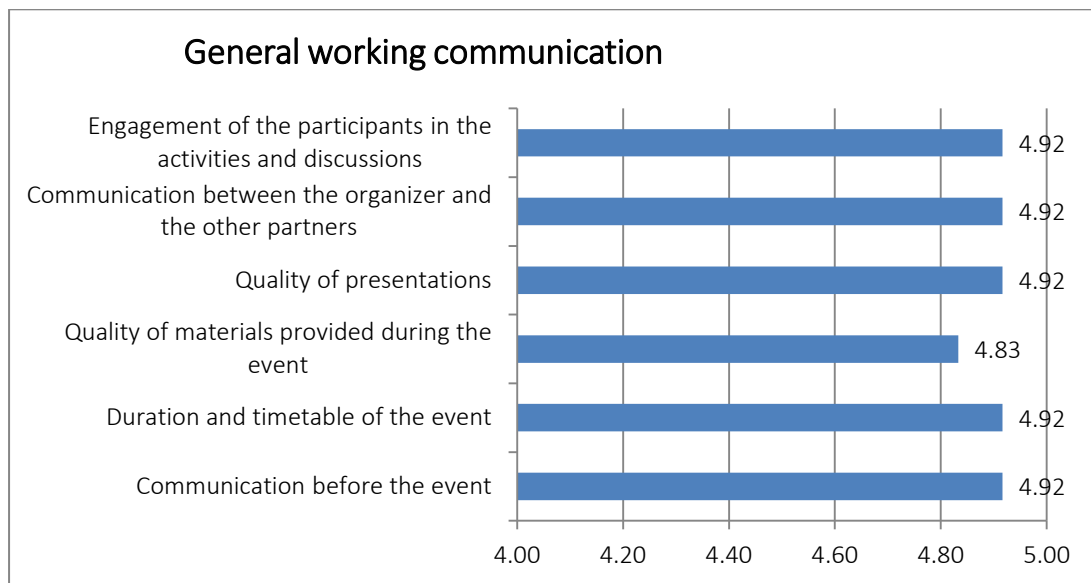
- UNIRIFCE studies related to WRM
- Quality Assurance and Monitoring – University level
- Quality Assurance and Monitoring – Faculty level
- Presentation of the course “Water resources management” (master study) and models of master thesis preparation in WRM courses
- E-learning in WRM
- Issues in WRM in Croatia in climate change context
- Innovative and scientific approaches in WRM
- Assessment of Proper Wastewater Treatment Level according to Marine Ecosystem State
- Use of laboratory and equipment in teaching and preparation of graduation thesis, research and professional work

#### Evaluation details

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.







## 2.4 Aristotle University of Thessaloniki (AUTH)

The fourth theme based training of teaching staff for acquiring new teaching and learning methods was held at the Aristotle University of Thessaloniki, Department of Civil Engineering (AUTH) from 30th October to 01st November 2019. All WB project partners took part at this training.

Nineteen representatives from 8 partner institutions were present at the training (15 out of 19 were from WB partner HEIs – UNI, UNS, UNSA, UNMO, UPKM, TCASU and UoM).

The following topics were presented:

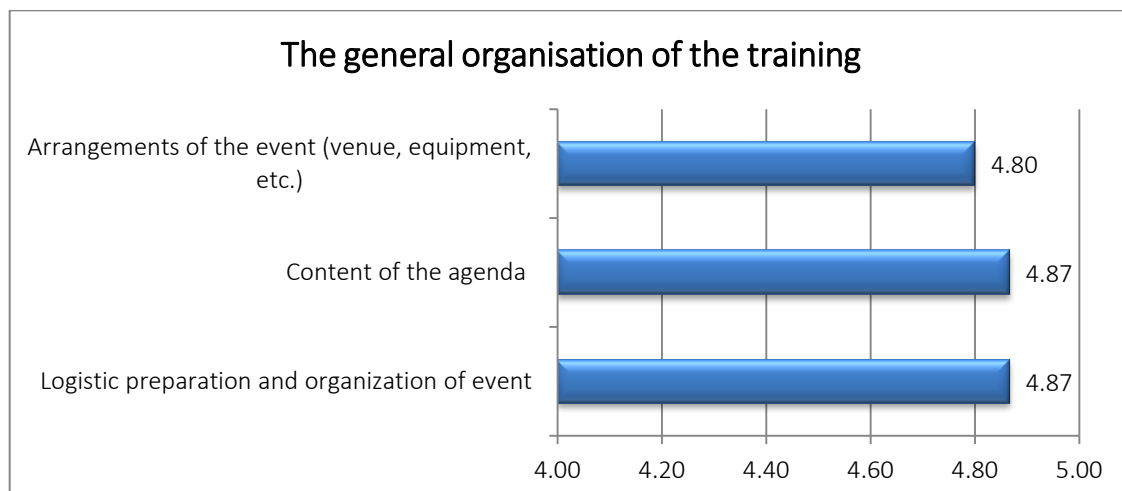
- Studies and activities related to WRM in the Div. of Hydraulics & Environmental Engineering
- Postgraduate Course on Research Methodology for Engineers and Scientists
- Hydro-Governance in Greece – Past, Present and Future
- Transboundary water cooperation
- Innovations in the Water Supply Sector
- Ecological restoration of Greek lakes: success stories?
- Development of strategic flood management plans of urban and rural areas in Greece
- Postgraduate Studies Program on Environmental Protection and Sustainable Development
- Postgraduate Studies Program on Integrated Management of Watersheds and Coastal zone

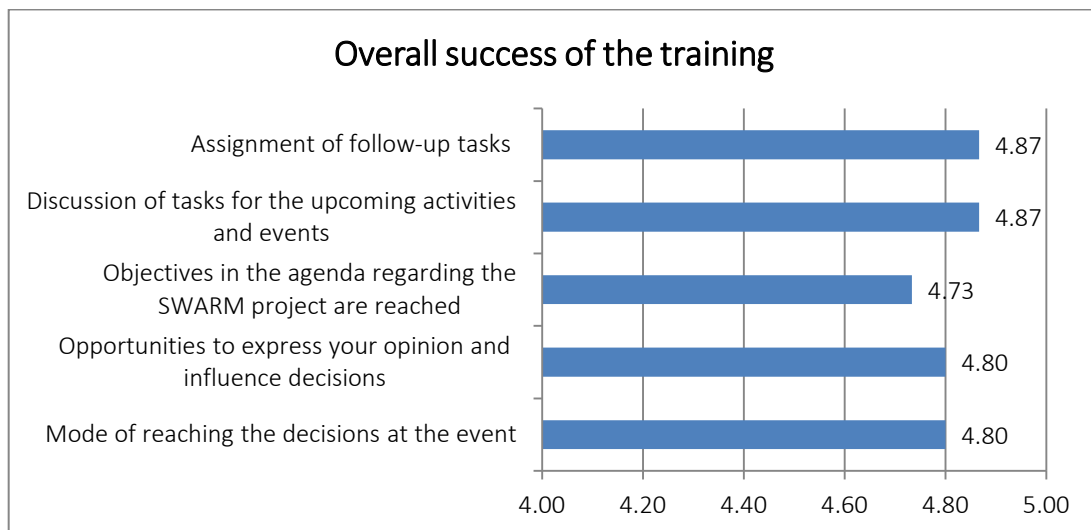
Visit to the Water treatment plant (close to Thessaloniki) was organized.

### Evaluation details

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.









## 2.5 University of Lisbon, Portugal (UL)

The fifth theme based training of teaching staff for acquiring new teaching and learning methods was held at the Instituto Superior Técnico (IST), Civil Engineering, Architecture and Georesources Department (DECivil), Lisbon University (UL) from 27th November to 29th November 2019. All WB project partners took part at this training.

Nineteen representatives from 8 partner institutions were present at the training (16 out of 19 were from WB partner HEIs – UNI, UNS, UNSA, UNMO, UPKM, TCASU and UoM).

The following topics were presented:

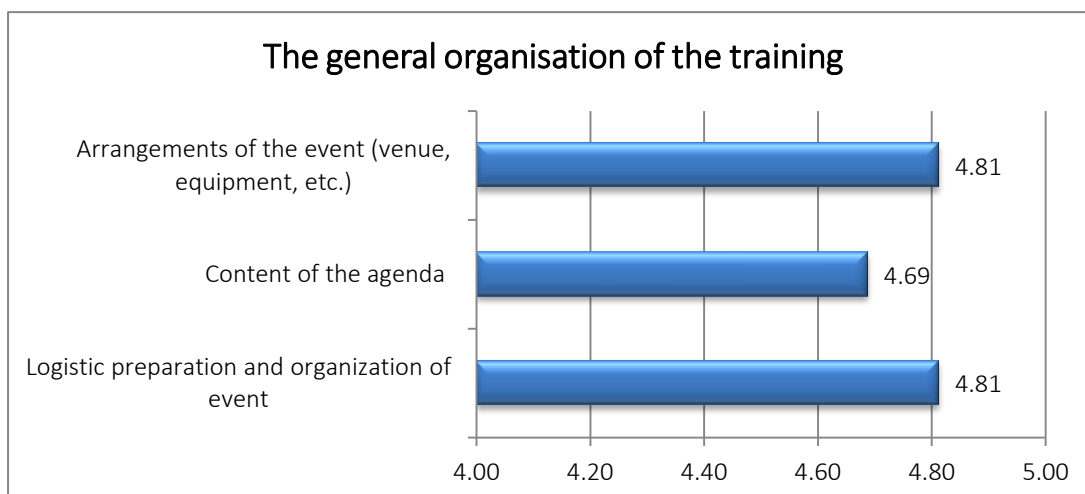
- Principles of water governance
- Mooc - Massive Open Online Courses: how to develop a Mooc for engineering courses
- Drainage master plan of Lisbon city
- Agreements for the protection and sustainable use of waters of International river basins. The case of the Portuguese-Spanish Convention

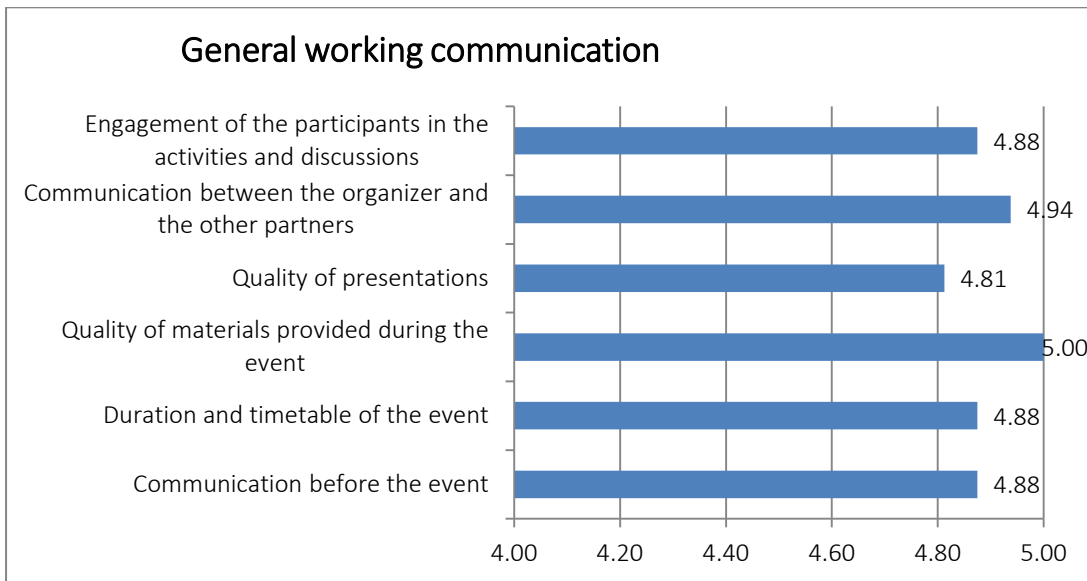
Visits to the Lisbon sewage treatment plant, at Alcântara and to the XVIII century water distribution system to Lisbon were organized.

### Evaluation details

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.







## 2.6 University of Natural Resources and Life Sciences, Vienna (BOKU)

The sixth theme based training of teaching staff for acquiring new teaching and learning methods was held at the University of Natural Resources and Life Sciences (BOKU) from 04th February to 06th February 2020. All WB project partners took part at this training.

Twenty-one representatives from 8 partner institutions were present at the training (18 out of 21 were from WB partner HEIs – UNI, UNS, UNSA, UNMO, UPKM, TCASU and UoM).

The following topics were presented:

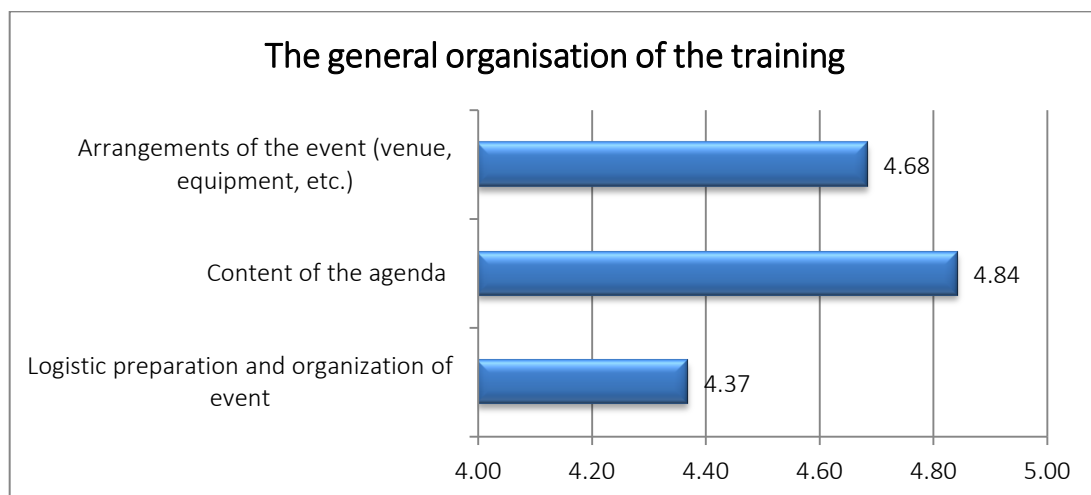
- Innovative teaching practices
- Online learning methods
- Introduction to the e-learning system BOKUlearn
- eLearning exercises and tests.

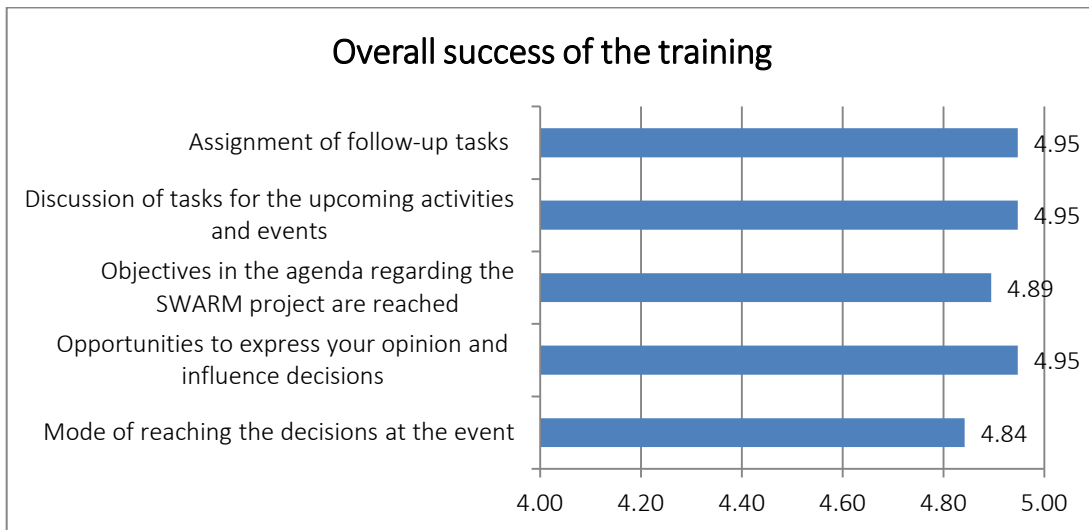
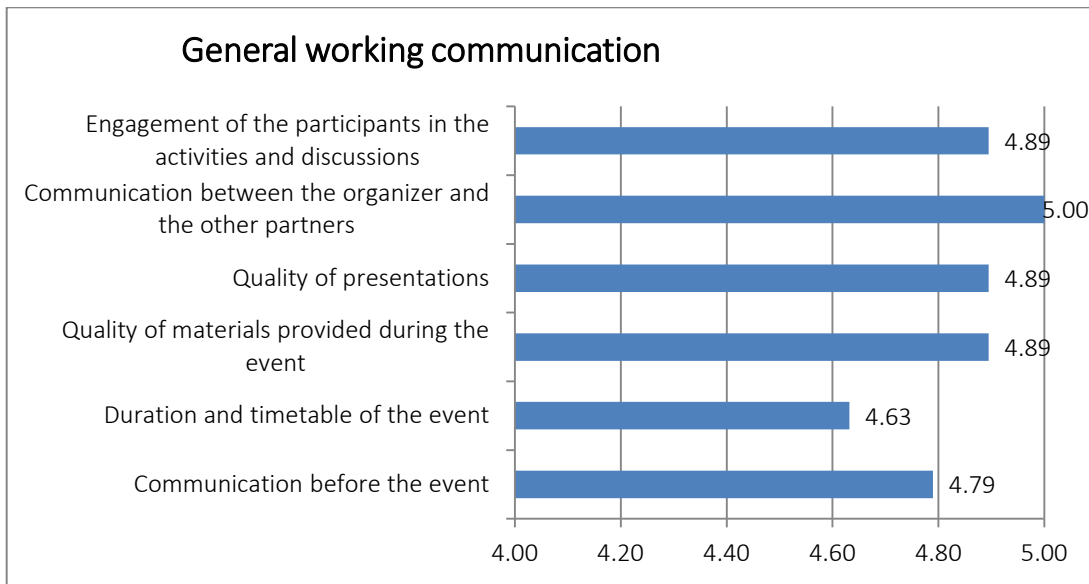
Visits to the Waste Water Treatment Plant of Vienna and to the hydro power plant Freudenuau were organized.

### Evaluation details

The following elements were evaluated:

- general organisation of the event,
- general working communication,
- overall success of the event.







### 3 Statistics of trained academic staff from the WB

This section aims to present statistical data for the trained academic staff from the partner country's Higher Education Institutions. During the trainings, 92 teaching staff were trained i.e. UNI – 19, UNS – 12, UNSA – 13, UNMO – 11, UPKM – 13, TCASU – 12 and UoM - 12. Number of male was 53 and number of female was 39.

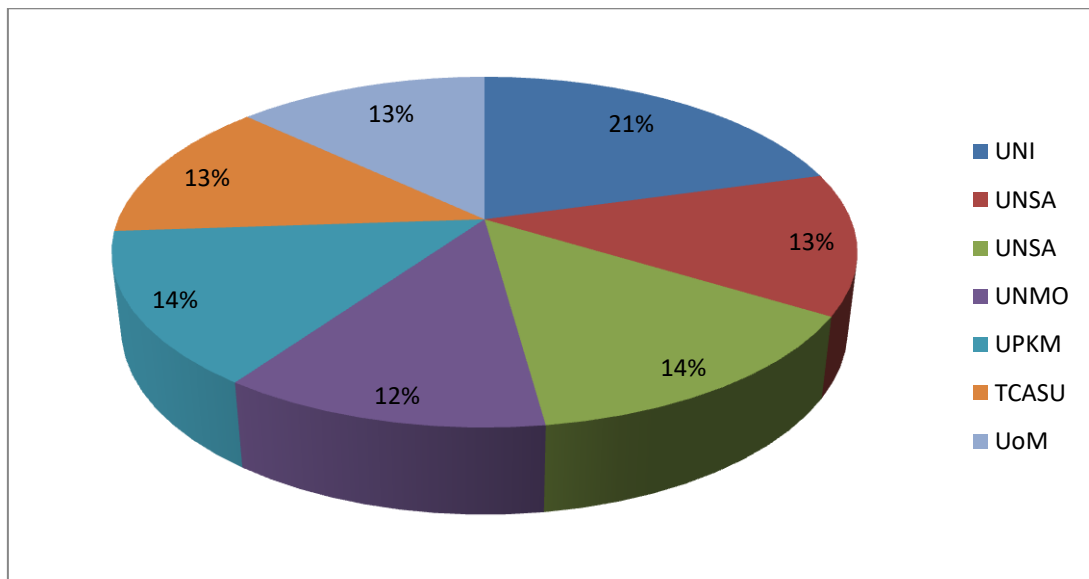


Figure 1. Percentage of trained teaching staff

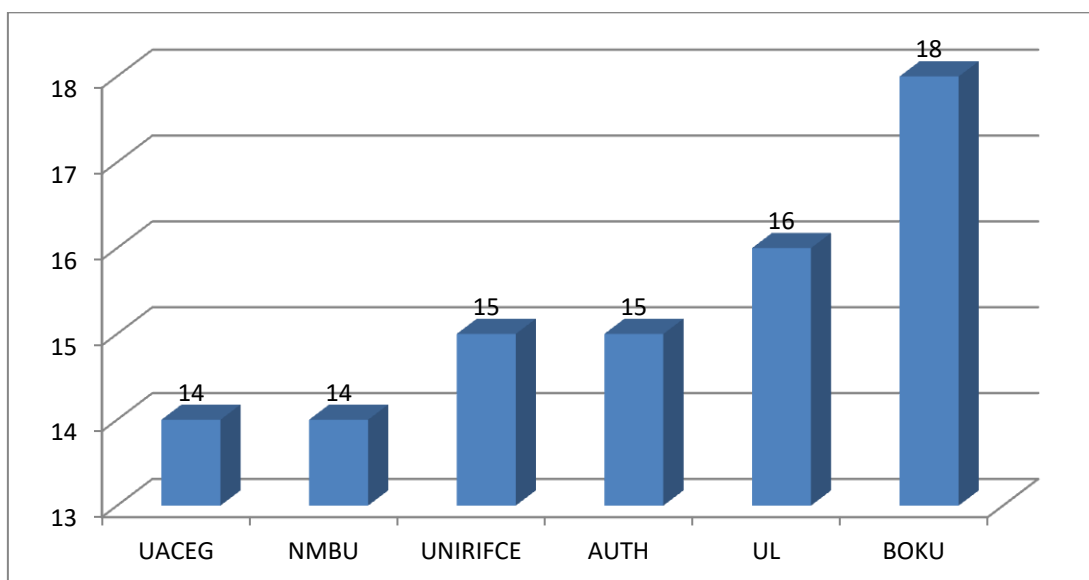


Figure 2. Number of WB teaching staff trained at Programme Country HEIs



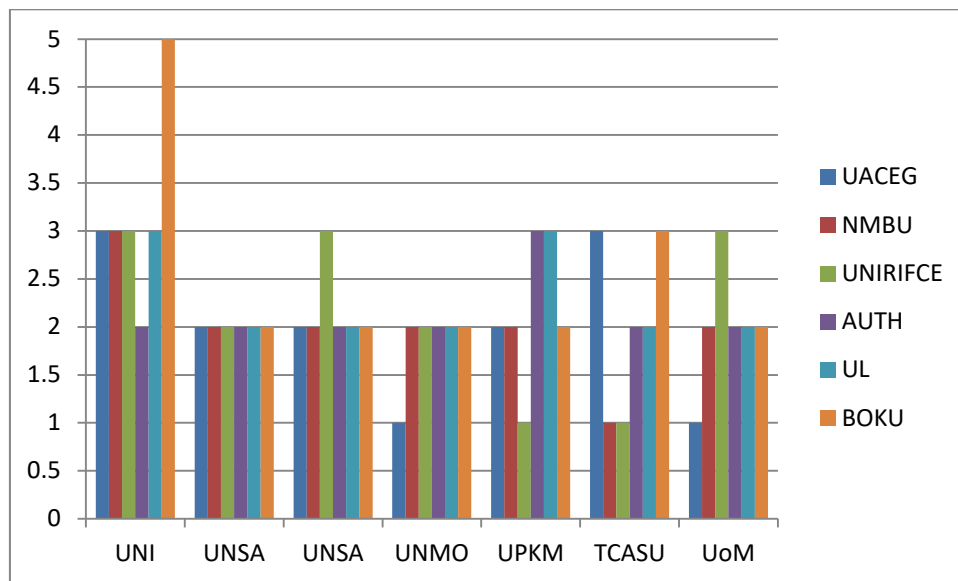


Figure 3. Number of teaching staff trained per WB partner HEI

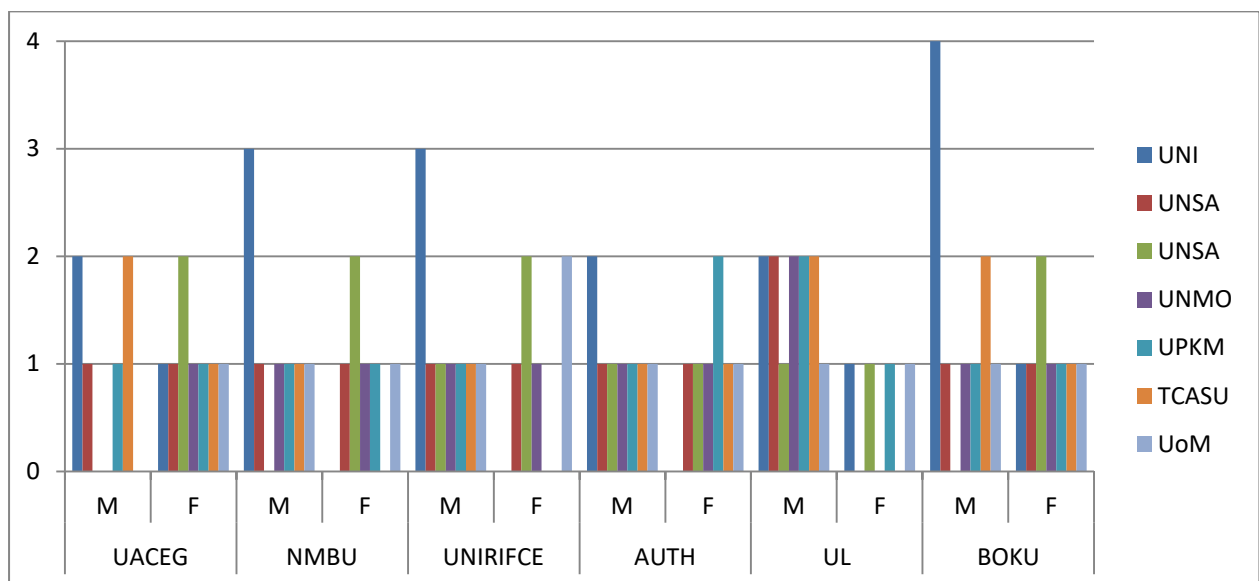


Figure 4. Number of male/female per WB partner HEI