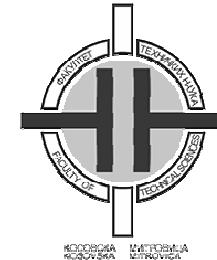




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University of Priština in Kosovska Mitrovica (UPKM)



Dr Đurica Marković
Faculty of Technical Sciences

WP3 Development of trainings for professionals in water sector
WP3.2 – Analyse of water sector needs for LLL courses in WB and
WP3.3 – Development of trainings content and corresponding educational material
20.9.2019 - Rijeka

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University of Nis



www.swarm.ni.ac.rs

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

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



Work Package 3 Aim

The aim of WP 3 is to identify knowledge and organizational gaps and develop effective training programmes for professionals in water sector.



WP 3 Activities

The WP3 is divided into three activities:

- A3.1 Introduction with LLL courses for professionals in water sector in EU
- A3.2 Analyze of water sector needs for LLL courses in WB
- A3.3 Development of trainings content and corresponding educational material



WP 3 Activity 1

Introduction with LLL courses for professionals in water sector in EU

EU partners have sent their reports on LLL courses to professionals in the water sector where they briefly described LLL courses, duration, and explained their organization. Report on LLL courses for professionals in EU water sector was submitted on 7th May 2019.



WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

UPKM as WP 3 leader proposed the questions for a survey. After giving suggestions and corrections, where all partners participated, an online questionnaire was made. The survey consisted of 12 questions divided into 5 groups:

First group of questions: General details

Second group of questions: Job Responsibilities as regards to Water Management in the organization

Third group of questions: Awareness, Knowledge to Water Resources Management Policy

Fourth group of questions: Training Need

Fifth group of questions: Technical Training



WP 3 Activity 2

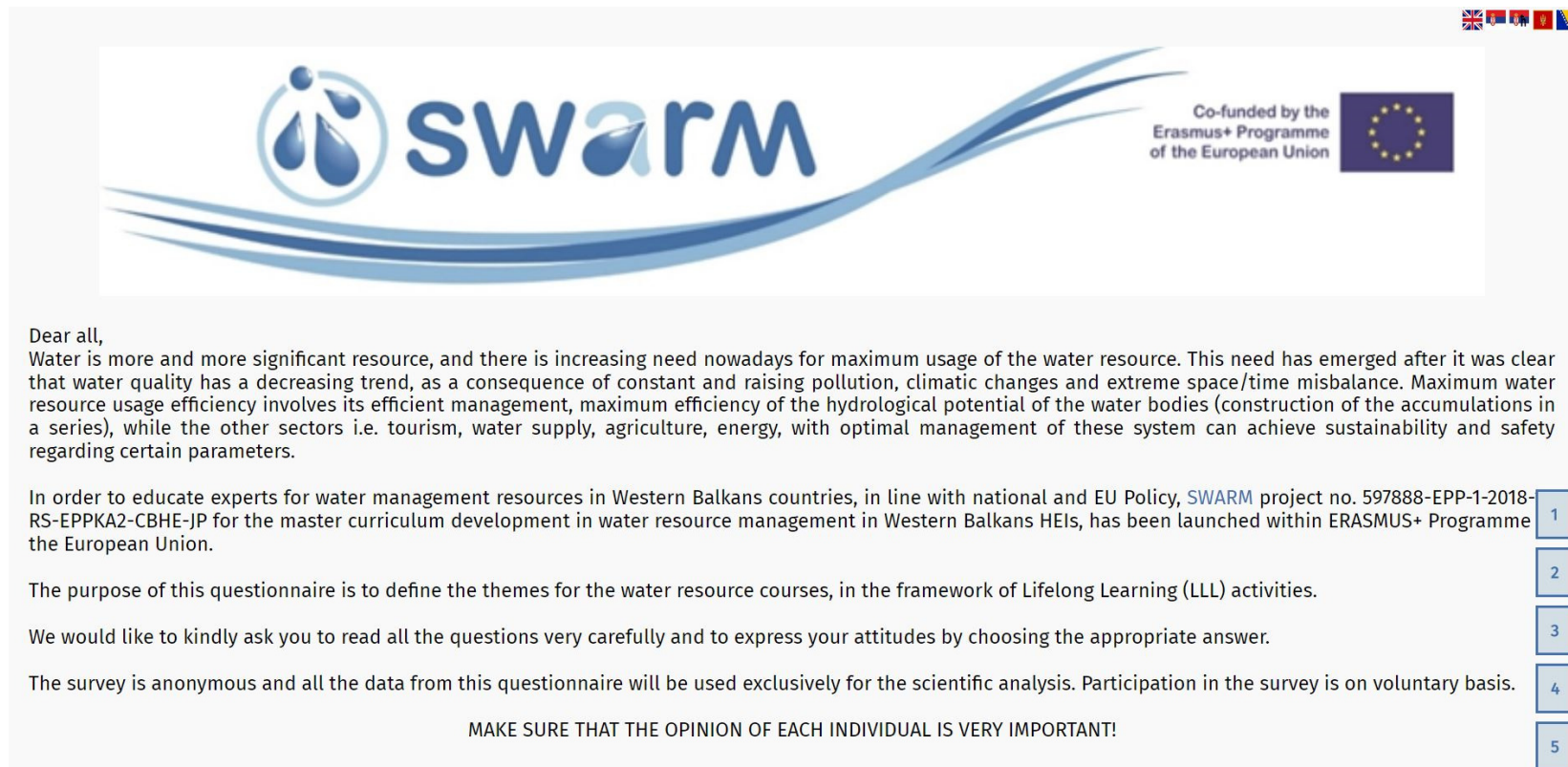
Analyze of water sector needs for LLL courses in WB

After the questionnaire had been posted on the site (<http://swarm-survey.pr.ac.rs>) all WB partners prepared their list of public companies and institutions, where the survey is expected to be conducted. The survey of the public companies had been conducted from 15th March to 20th May 2019.



WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

A screenshot of a questionnaire introduction page. At the top right, there are small flags of the United Kingdom, Germany, France, and the Netherlands. The SWARM logo is on the left, and the Erasmus+ logo is on the right. The text is as follows:

Dear all,
Water is more and more significant resource, and there is increasing need nowadays for maximum usage of the water resource. This need has emerged after it was clear that water quality has a decreasing trend, as a consequence of constant and raising pollution, climatic changes and extreme space/time misbalance. Maximum water resource usage efficiency involves its efficient management, maximum efficiency of the hydrological potential of the water bodies (construction of the accumulations in a series), while the other sectors i.e. tourism, water supply, agriculture, energy, with optimal management of these system can achieve sustainability and safety regarding certain parameters.

In order to educate experts for water management resources in Western Balkans countries, in line with national and EU Policy, *SWARM* project no. 597888-EPP-1-2018-RS-EPPKA2-CBHE-JP for the master curriculum development in water resource management in Western Balkans HEIs, has been launched within ERASMUS+ Programme of the European Union.

The purpose of this questionnaire is to define the themes for the water resource courses, in the framework of Lifelong Learning (LLL) activities.

We would like to kindly ask you to read all the questions very carefully and to express your attitudes by choosing the appropriate answer.

The survey is anonymous and all the data from this questionnaire will be used exclusively for the scientific analysis. Participation in the survey is on voluntary basis.

MAKE SURE THAT THE OPINION OF EACH INDIVIDUAL IS VERY IMPORTANT!

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WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

General details

University:

Gender:

Age:

Level of education:

Employment sector:

The institution where you are employed:

Position:

Number of years of Experience:

Comment:



WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

Job Responsibilities as regards to Water Management in the organization

In your present position, how much time do you devote for carrying work related to Water Resources Management?

In your present position, what are your responsibilities for Water Resources Management? You may tick more than one.

- Planning & Scheduling
- Budgeting, Costing and other Financial Aspects
- Field Supervision
- Coordination & Meetings
- Technical & Engineering Aspects
- Training & Capacity Building
- Communication
- Staff Management, Control
- Public Interaction and Complaint Redress
- Legal aspects
- Enhancing Community Participation
- Any Other

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WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

Awareness, Knowledge to Water Resources Management Policy

How aware are you of the instruments for Water Resources Management?

EU Water Law, Policy or Strategic Plan

National Water Law, Policy or Strategic Plan

Regional Water Law, Policy or Strategic Plan

Are you aware of the other national instruments that may incorporate Water Resources Management?

Integrated national policy/strategy/plan for land and water resources management

Poverty Reduction Strategy (PRS) with water resources management component

National Strategy for Sustainable Development

National Development Plan with water resources management component

National Environmental Action Plan water resources management component

National climate change adaptation policy/strategy/plan with water resources management component

National Agricultural Plan with water resources management component

National energy policy/strategy/plan with water resources management component

National desertification policy/strategy/plan with water resources management component

National wetland policy/strategy/plan with water resources management component

National biodiversity policy/strategy/plan with water resources management component

According to you, what is the level of compliance in your organization as regards to various actions described in the table below? Please tick, as you feel appropriate.

Groundwater management program

Surface management program

Linked ground and surface water management program

Programs for efficient allocation of water resources among competing uses

Land/natural resources management programs that include water resources management components

Programs for allocating water resources that include environmental considerations

Demand management measures to improve water use efficiency in all sectors

Program for re-use or recycling of water

Programs to evaluate environmental impacts of water projects

Programs to address water-related disasters (e.g. floods and droughts)

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WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

Training Need

Please read each of the abilities carefully and rate yourself and your colleagues on the same on the basis of five point rating scale. (Five is the highest and one is lowest)

	Self	Colleague
Understanding WRM procedures	Select your option	Select your option
Technical & Engineering aspects	Select your option	Select your option
Institutional aspects	Select your option	Select your option
Supervision and Coordination	Select your option	Select your option
Computer Applications	Select your option	Select your option
Budgeting & Costing for WRM	Select your option	Select your option
Contracting mechanisms	Select your option	Select your option
Training & Capacity Building	Select your option	Select your option
Communication Skills	Select your option	Select your option
Integrated water resources management	Select your option	Select your option

Please indicate the areas of training needs for you and colleagues in your category to increase the competencies in managing WM services. You may tick more than one.

- National, Sub-national and International Water Resources Policy
- Project Management
- IT tools in managing water
- Stakeholders Engagement and Community Development
- Water Supply Management
- Wastewater treatment technology and effluent management
- Groundwater management
- River restoration
- Monitoring, Enforcement and Accountability
- Water Sustainability and Development
- Any Other, you wish to add

Have you or any one of your colleagues received training on the subject of WM? If yes, please provide details.

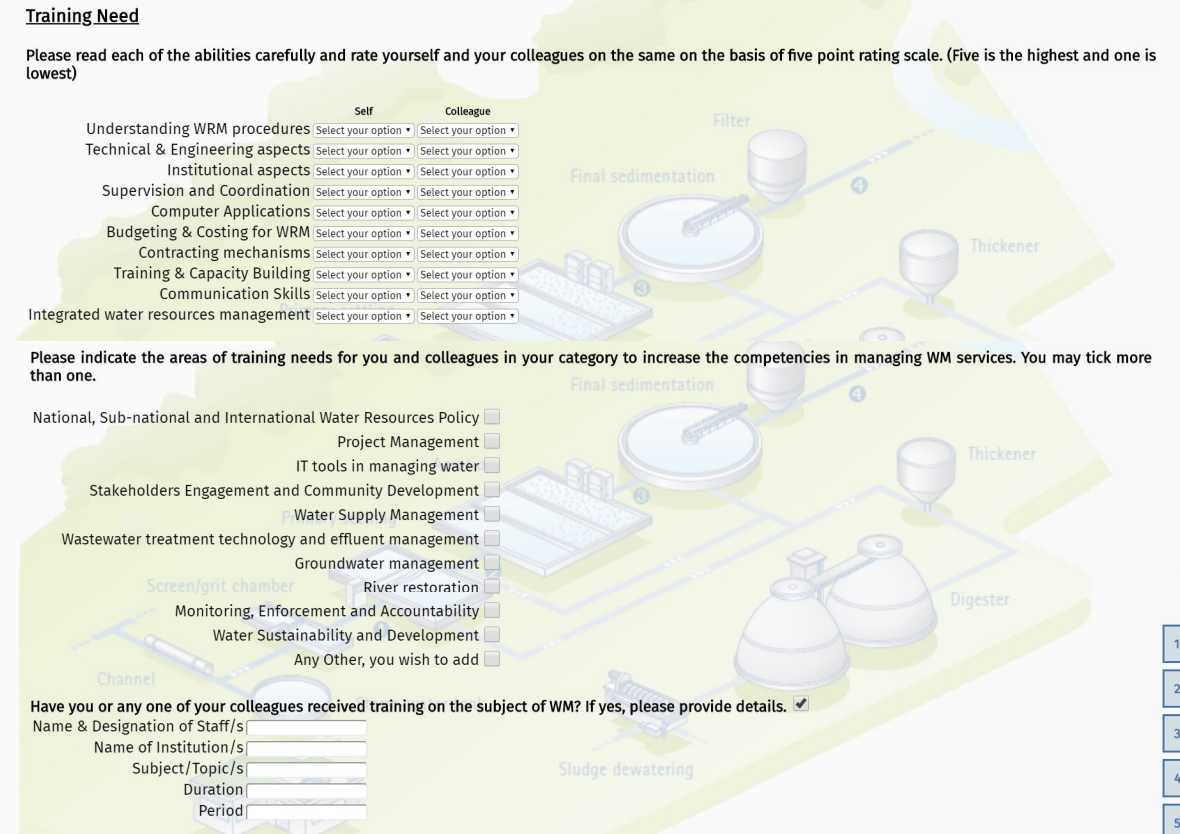
Name & Designation of Staff/s

Name of Institution/s

Subject/Topic/s

Duration

Period



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WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

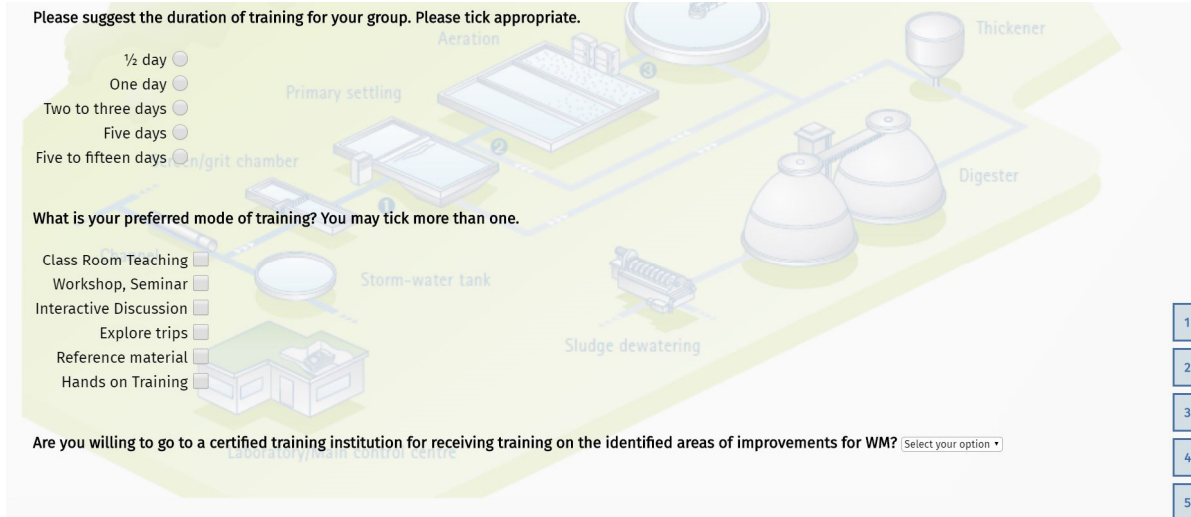
Please suggest the duration of training for your group. Please tick appropriate.

½ day
 One day
 Two to three days
 Five days
 Five to fifteen days

What is your preferred mode of training? You may tick more than one.

Class Room Teaching
 Workshop, Seminar
 Interactive Discussion
 Explore trips
 Reference material
 Hands on Training

Are you willing to go to a certified training institution for receiving training on the identified areas of improvements for WM?



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WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB



Technical Training

Indicate your preferable technical training. You may tick more than one.

- Water resources infrastructure
- Irrigation
- Energy/hydropower
- Groundwater (e.g. boreholes, pumps and treatment)
- Flood management
- Water supply (domestic and industrial)
- Wastewater treatment
- Desalination of seawater
- Rainwater harvesting
- Natural systems (e.g. wetlands, floodplains and catchment restoration)
- Sustainable Integrated Water Resources Management

Finish

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Analyze of water sector needs for LLL courses in WB

#	WB Partner
1136	In total
161	University of Nis, (UNI)
163	University of Novi Sad (UNS)
177	University of Sarajevo (UNSA)
173	Dzemal Bijedic University of Mostar (UNMO)
151	University of Pristina in Kosovska Mitrovica (UPKM)
152	Technical College of Applied Sciences Urosevac with temporary seat in Leposavic (TCASU)
153	University on Montenegro (UoM)
6	Public Water Management Company "Vode Vojvodine" (PWMCVV)



WP 3 Activity 2

Analyze of water sector needs for LLL courses in WB

As can be seen from the table, all institutions have met the target on the number of participants in the survey (150 per HEI), which is in accordance with the project application.

The survey results were processed, charts were prepared and report templates were provided to WB partners. They analysed data related to their institution, made conclusions, and then submitted their reports.



Analyze of water sector needs for LLL courses in WB

Comprehensive report of water sector needs for LLL courses in WB was prepared on 155 pages. In addition to conclusions by institution, a joint analysis of the results and a general conclusion and recommendations were made.



Analyze of water sector needs for LLL courses in WB

The results vary significantly in some cases, but group of questions called **Job Responsibilities as regards to Water Management in the organization**, indicates that additional efforts have to be made in reducing the percentage of people who almost do not devote time (0 – 20% of time) or devote a little of their time (20 – 40% of time) to Water Resources Management. These two groups cover 55.6% of respondents in total. The respondents' responsibilities in Water Management are quite well-targeted, because three key activities (Planning and Scheduling; Field Supervision and Technical and Engineering Aspects) are represented with 50.1% of all activities. Also, it is important to improve the responsibilities in other activities, such as: Public Interaction and Compliant Redress, Legal Aspects, and Enhancing Community Participation.



Analyze of water sector needs for LLL courses in WB

In the third group of questions: **Awareness, Knowledge to Water Resources Management Policy**, the professionals in the water management were asked about the Water Resources Management Policy and its instruments in implementing the best practices in Water Management. The survey shows that there are a big percentage of respondents who are not aware of the instruments for Water Resources Management. This could be one of the topics for LLL courses that would be prepared.



Analyze of water sector needs for LLL courses in WB

The survey results related to Training Need clearly highlighted that there is a great needs for improvement of previously acquired knowledge and for improvement of practical skills at people in water sector. Also, the results show that there is a great interest of water experts to have quality training, in duration of one, two or three days. Trainings will be organized as Workshop, Seminar and Explore trips. The areas of training needs which are of most interest of people in water sector are: Project Management, IT tools in managing water, Water Supply Management, River restoration, Wastewater treatment technology and effluent management, and Water Sustainability and Development.



Analyze of water sector needs for LLL courses in WB

Also, the preferable technical training are: Water resources infrastructure, Sustainable Integrated Water Resources management, Flood management, Energy/hydropower, and Wastewater treatment.

Based on these conclusions, resulted from this survey, further activities should be directed towards the preparation of training for professionals within life-long learning program.



WP 3 Activity 3

Development of trainings content and corresponding educational material

During this activity training content will be created, selection of teaching staff from WB partners HEIs will be done and joint educational material will be created and printed on time.

Timeframe for task 3.3: from 15th July 2019 to 14th March 2020.

Trainings material should be printed up to 14th March 2020.



WP 3 Activity 3

Development of trainings content and corresponding educational material

Based on the results of the survey, courses were suggested that could be developed:

1. Water – scarce resource

- Water resources in the Western Balkan, Europe and the world
- Freshwater availability
- Impact of urbanization on water use and management
- Unsafe water, sanitation and hygiene



WP 3 Activity 3

Development of trainings content and corresponding educational material

2. EU water policy under the Water Framework Directive

- Objectives and instruments of EU Water Policy
- Integrating water policy: Linking all EU water legislation within a single framework
- Roadmap to implementing the directive's economic analysis
- Best practice examples for using Water Framework Directive



WP 3 Activity 3

Development of trainings content and corresponding educational material

3. Water management and climate change adaptation

- Water and climate change – policy framework
- Climate Change and the European Water Dimension
- Climate change and impacts on water
- Contributing to better water management: Experiences from case studies across Europe



WP 3 Activity 3

Development of trainings content and corresponding educational material

4. Wastewater treatment and reuse of treated wastewater

- Treatment of Urban Waste Water Directive and EU legislation related to water reuse
- Standards for the quality of reused treated wastewater
- Potential sources and uses for reuse of treated wastewater
- Water reuse in Europe - needs for and barriers to innovation

This training content will develop by colleagues from University of Novi Sad.



WP 3 Activity 3

Development of trainings content and corresponding educational material

5. Flood and drought risk management

- European policies influencing the management of floods
- Flood risk management, climate change adaptation and disaster risk reduction
- Challenge from water scarcity and droughts
- Good practices and learned lessons across Europe in preventing and managing water scarcity, flood and drought situations

This training content will develop by colleagues from University of Niš.



WP 3 Activity 3

Development of trainings content and corresponding educational material

6. Innovation in the water sector

- Policies on water and innovation in Europe
- Cyber safety in water infrastructure and services
- What is water innovation
- Barriers and bottlenecks for innovation in the water sector
- Examples of innovation in the water sector
- Promoting public-private partnerships and collaboration with HEIs

This training content will develop by colleagues from University of Mostar.



WP 3 Activity 3

Development of trainings content and corresponding educational material

7. Stormwater treatment

- Stormwater issues
- Stormwater measures
- Action Plans and strategies for stormwater
- Good practices and learned lessons across Europe

This training content will develop by colleagues from University of Montenegro.