

**MEETING MINUTES**  
**PC-EU TRAINING COURSE ON**  
**Project Erasmus+ № 561775-EPP-1-2015-1-DE-EPPKA2-CBHE-JP**  
**Trans-Regional Environmental Awareness for Sustainable Usage of Water Resources**  
**(TREASURE-WATER),**  
**Thessaloniki, Greece, 24<sup>th</sup> April – 5<sup>th</sup> May 2017**

**Organiser:** Aristotle University of Thessaloniki (AUTH)

**Venue:** School of Civil Engineering, UNESCO Chair on “Sustainable Management of Water and Conflict Resolution”, Hydraulics Building

**1. Description of the objectives of the course**

The 2 weeks training course from the 24<sup>th</sup> of April to 5<sup>th</sup> of May 2017 that was held in the Aristotle University of Thessaloniki, Greece, forms part of the scheduled activities that are included in WP3 “Industry-Academia Teaching Task Force’ (IATTF) created”. The aim of the 2 weeks training course was in line with the aim of the WP3, and particular the course focused on the enhancement of the teaching and knowledge potential of the PC HEIs in TWRM by creating an ‘Industry-Academia Task Force’(IATF) and modernization of teaching resources.

An overall discussion about the IATF role was conducted during the training course and a preliminary road map of the IATF concept and activities was also one of the working issues during the meeting. The outputs could be comprised that IATF should have an extended role to the IALPs, by bringing together academic and industry staff for teaching/learning purposes. For that purpose, it is required professional development of courses from PC universities including the IWGs, the IT staff, QA personnel, that are directly involved in the university academic activities and a few staff from industry.

Other main thematics of the training course are the following:

1. Demonstration of innovative methodologies and practices that are used in the EU in the field of TWRM,
2. the EU environmental legislation,
3. Interactions between private sector and Academia
4. TWRM practices and methodologies that are proposed by International Organisations, such as UNESCO-IHP.

As the given presentations by the AUTH is concerned, the following presentations aimed at the aforementioned thematic 1:

- “EU WFD and GIS, databases”,
- “Transboundary water management and cooperation”,
- “The Biological (Microalgae) Composition as an Evidence for the Sustainable Use of Waters - The Greek Example from Extreme Aquatic Environments”,
- "Phytoplankton Community Index – A new way of assessing ecological water quality in lakes and reservoirs”

In this specific thematic, one field trip, namely *Excursion to Axios-Loudias-Aliakmonas national park* was accomplished for getting informed on the management of a Natura area, which forms part of a transboundary river basin.

The following presentations were dedicated on the aforementioned thematic 2:

- "Water Framework Directive + EU policies for sustainable water management"
- "Flood Risk management, The Flood Directive"

The following presentations aimed at the aforementioned thematic 3:

- "Experimental investigation of phytoreclamation of sites affected by sewage sludge"
- "Utilization/reclamation of solid non-hazardous wastes as soil improvers in Greece"

In this specific thematic two field excursions, namely *excursion to the WWTP of Sindos* and *Visit to the Metro station works at Venizelou / University* were also conducted.

Finally, the following presentations aimed at the aforementioned thematic 4:

- "Climate change and renewable resources of energy",
- "Water resources management and climate change. The Lake Koronia case, Mygdonia catchment"

The overall output of the course and the activities related to the WP3 could be comprised to the followings:

- Training of academic staff from the PC universities and industry;
- Demonstration of the teaching environment and facilities of EU HEI to the PC participants;
- Demonstration of laboratories infrastructure, utilised software and hardware, and equipment.

During the course, a synopsis of the work of the WP2 that has been conducted till today and the issues that need to be accomplished till the end of the specific WP was given. The WP2 entitled as "Design of methodology for TWRM and strategy for IALP building" focuses on the generation of a common understanding among project partners of the problems and learning needs in the field of transnational water management. A major outcome of this WP will be a model for interaction between HEIs and enterprises in the water sector. In continuation of the Action Plan and the strategy for interaction that was outlined at the first workshop at Tyusu an Action Plan and the strategy for interaction will be outlined, Thessaloniki's training course aimed to the analysis of approaches to transboundary issues of water management.

The overall output of the course and the activities related to the WP2 could be comprised to the followings:

- Evaluation of the methodology for TWRM that has been developed till currently;
- Evaluation of the strategy that has been designed for the interaction with industry.

Moreover, during the training course, one specific day, Wednesday 3 May, was dedicated to the demonstration of the work that has been accomplished till today by the PC and EU participants.

In the framework of the IATF, working groups were formed by the non-EU partners where discussions demonstrated the critical issues in industry in their respective countries in relation to sustainable water

use. Moreover, a specific format of the different modules of the developed curricula was agreed (included below as ANNEXIII) and also the ECTS European Accreditation System was mentioned. The training courses / modules will provide the foundations for the establishment of related postgraduate degrees (MSc and PhD) in the areas of water engineering and environmental studies.

Also during the course, the evaluation of the future activities, working issues, future meetings and GA till the next meeting in Khanty-Mansiysk was also assessed and finalised.

Participants from all the PC countries, the University of Athens, Greece, the Ludwig University of Freiburg, Germany, the Radboud University, the Netherlands, as well as the hosting University (Aristotle University of Thessaloniki) attended the training course activities.

The training course programme as well as the list of participants are included in the minutes report as annexes.

## ANNEX I

Training course programmeFunded by the  
Erasmus+ Programme  
of the European Union

TREASURE WATER



# Aristotle University TREASURE WATER Meeting

## "TRANS-REGIONAL ENVIRONMENTAL AWARENESS FOR SUSTAINABLE USAGE OF WATER RESOURCES" 24 APRIL – 5 MAY 2017

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**MONDAY 24 APRIL 2017**

10:00-10:45 Welcome from the Director of the Division of the Hydraulics & Environmental Engineering, Dept. of Civil Engineering, AUTH Prof. N. Theodosiou

Participants' short introduction

10:45-11:30 "Water Framework Directive + EU policies for sustainable water management"  
Assoc. Prof. E. Kolokytha, Dept. of Civil Engineering, AUTH

11:30-12:45 "Water Framework Directive + EU policies for sustainable water management"  
Assoc. Prof. E. Kolokytha, Dept. of Civil Engineering, AUTH

12:45-14:00 *Lunch break*

14:00-15:00 "EU WFD and GIS, databases", Dr. H. Skoulikaris, Research Associate, Dept. of Civil Engineering, AUTH

15:00-16:00 "EU WFD and GIS, databases", Dr. H. Skoulikaris, Research Associate, Dept. of Civil Engineering, AUTH

16:00-16:30 Discussion-Conclusions

**TUESDAY 25 APRIL 2017**

10:00-10:30 Dr. Galina Telegina, non EU partners TREASURE\_WATER Coordinator

10:30-11:00 Prof. Edgar Wagner, Coordinator of the program, University of Freiburg

11:00-11:30 "Transboundary water management and cooperation", Assoc. Prof. E. Kolokytha: Dept. of Civil Engineering, AUTH

11:30-12:45 "Transboundary water management and cooperation", Assoc. Prof. E. Kolokytha, Dept. of Civil Engineering, AUTH

12:45-14:00 *Lunch break*

14:00-15:00 “Climate change and renewable resources of energy”, Dr. H. Skoulikaris, Research Associate, Dept. of Civil Engineering, AUTH

15:00-16:00 “Climate change and renewable resources of energy”, Dr. H. Skoulikaris, Research Associate, Dept. of Civil Engineering, AUTH

16:00- 16.30 Discussion-Conclusions

### WEDNESDAY 26 APRIL 2017

9.45 Departure from the University

Axios/Vardar is one of the 5 transboundary rivers in Greece



### EXCURSION TO AXIOS-LOUDIAS-ALIAKMON PARK

14.00 Return to the city

### THURSDAY 27 APRIL 2017

10:00-11:30 Dr. Nataliia Suchkova: Experimental investigation of phytoreclamation of sites affected by sewage sludge

11:30-12:45 Dr. Nataliia Suchkova: Utilization/reclamation of solid non-hazardous wastes as soil improvers in Greece

12:45-14:00 *Lunch break*

14:00-15:00 PHd candidate, D. Malamataris: “Water resources management and climate change. The Lake Koronia case, Mygdonia catchment”, Dept of Civil Engineering AUTH

15:00-16:00 “Phytoplankton Community Index – A new way of assessing ecological water quality in lakes and reservoirs”, Prof. M. Moustaka: Dept. of Biology, AUTH

16:00-16:30 Discussion-Conclusions

### FRIDAY 28 APRIL 2017

9:30 Visit to the Metro station works at Venizelou / University

13:30-15:00 Lunch break

15:00-16:30 “Diachronic evolution of water supply and hydraulic works of water exploitation” -  
Hydrotechnologies, Assoc. Prof. K. Voudouris, Dept. of Geology AUTH

16:30-17:00 Discussion-Conclusions

### MONDAY 1 MAY 2017

**LABOUR DAY- DAY OFF**

### TUESDAY 2 MAY 2017

9.00 Departure from the University

*EXCURSION TO ALIAKMONAS & WWTP SINDOS*



**The Thessaloniki Water Treatment Facility (the Refinery) lies 2km north of the Sindos Industrial Area close to the Thessaloniki – Edessa National Road**

14.00 Arrival in the city

### WEDNESDAY 3 MAY 2017

9:30-10.00 Welcome of the Dean of the Civil Engineering Department AUTH, Prof. P. Prinos

10:00-11:00 Presentations of all participants /Expertise/ scientific interests / projects etc.

11.00-12.00 Presentations of all participants /Expertise/ scientific interests / projects etc.

12.00-13.00 Presentations of all participants /Expertise/ scientific interests / projects etc.

13:00-14:00 *Lunch break*

14:00-15:00 Presentations of all participants /Expertise/ scientific interests / projects etc.

15:00-16:00 Presentations of all participants /Expertise/ scientific interests / projects etc.

16:00-16:30 Presentations of all participants /Expertise/ scientific interests / projects etc.

**THURSDAY 4 MAY 2017**

10:00-11:00 Dr. G. Galitsianou: Flood Risk management, Research Associate, Dept. of Civil Engineering, AUTH

11:00-12:45 Dr. G. Galitsianou: Flood Risk management, Research Associate, Dept. of Civil Engineering, AUTH

12:45-14:00 *Lunch break*

14:00-15:00 “The Biological (Microalgae) Composition as an Evidence for the Sustainable Use of Waters - The Greek Example from Extreme Aquatic Environments”, Prof. em. Athena Oikonomou, National & Kapodistrian University of Athens

15:00-16:00 , “The Biological (Microalgae) Composition as an Evidence for the Sustainable Use of Waters - The Greek Example from Extreme Aquatic Environments”, Prof. em. Athena Oikonomou National & Kapodistrian University of Athens

16:00-16:30 Discussion-Conclusions

**FRIDAY 5 MAY 2017**

10:00-12:00 **COORDINATION MEETING**

12:00-13:30 Dr. Galina Telegina / Edgar Wagner, Coordination of future actions of the program  
Conclusions & further planning

*13.30 Lunch break*

**END OF THE MEETING**

## ANNEX II

### List of participants

No	Full name	Position, institution	Home city
1.	Zemtsov Valerii	Professor, Head of Hydrology Department, Tomsk State University	Tomsk, Russia
2.	Vershinin Dmitrii	Assistant Professor of Hydrology Department, Tomsk State University	Tomsk, Russia
3.	Krasnoyarova Bella	Head of the laboratory, Institute of Water and Ecology Problems, Barnaul	Barnaul, Russia
4.	Baryshnikova Olga	Associate Professor, Faculty of Geography, Altai State University, Barnaul	Barnaul, Russia
5.	Antiufeeva Tatiana	Associate Professor, Faculty of Geography, Altai State University	Barnaul, Russia
6.	Kornilova Olga	Director, Centre of Laboratory Analysis and Technical Measurements of Khanty-Mansiysk Autonomous District - Yugra	Khanty-Mansiysk, Russia
7.	Zarov Evgeny	Lead engineer, UNESCO chair "Environmental dynamics and global climate change", Yugra State University	Khanty-Mansiysk, Russia
8.	Pinigina Elena	Senior Lecturer, Chair of Geo-ecology, Tyumen State University	Tyumen, Russia
9.	Zherebiateva Natalia	Head, Chair of Physical Geography and Ecology, Tyumen State University	Tyumen, Russia
10.	Myrzagaliyeva Anar	Vice-rector for Academic Affairs, East-Kazakhstan State University	Ust-Kamenogorsk, Kazakhstan
11.	Medeubayeva Balzhan	Acting Head, Department of Post-graduate Programmes, East-Kazakhstan State University	Ust-Kamenogorsk, Kazakhstan
12.	Popova Marina	Associate Professor, Chair of Chemistry, East-Kazakhstan State University	Ust-Kamenogorsk, Kazakhstan
13.	Zhamangara Aizhan	Associated Professor of the Environmental Management and Engineering Department, L.N. Gumilyov Eurasian National University	Astana, Kazakhstan
14.	Tulegenov Sherim	Professor of The Physical and economic geography department, L.N. Gumilyov Eurasian National University	Astana, Kazakhstan
15.	Telegina Galina	Director, Regional Institute for International Cooperation, Tyumen State University	Tyumen, Russia
16.	Iunusova Daniia	Deputy Head of Department of labour protection, environmental, industrial and fire safety, LLC Tyumen Vodokanal	Tyumen, Russia
17.	Charalampos Skoulikaris	Dept. of Civil Engineering, AUTH	Thessaloniki, Greece
18.	Elpida Kolokytha	Assoc. Professor, Dept. of Civil Engineering	Thessaloniki, Greece
19.	Athena Oikonomou	Professor, em. ,Dept. of Biology, University of Athens	Athens, Greece
20.	Edgar Wagner	Professor, University of Freiburg	Freiburg, Germany
21.	Toine Smits	Professor, University of Radboud, Nijmegen	The Netherlands
22.	Brecht Caspers	University of Radboud, Nijmegen	The Netherlands



**ANNEX III**
**MODULE EXAMPLE**

<b>Course Unit Title:</b>	Water Resources Management
<b>Course Unit Code:</b>	-----
<b>Type of Course Unit: (Compulsory/Optional)</b>	Compulsory
<b>Number of ECTS credits allocated:</b>	6
<b>Name of lecturer(s):</b>	Prof. Elpida Kolokytha
<p><b>Learning Outcomes of the course unit:</b></p> <p>Upon successful completion of this course students should be able to:</p> <p>Describe the global water problem</p> <p>Recognize the impact of climate change into water resources planning and management.</p> <p>Recognize when a river basin is managed in a sustainable way</p> <p>Identify the differences in the management of a transboundary water basin</p> <p>Describe and apply the basic principles of IWRM</p> <p>Recognize the competitive relations between the different water uses and their impact on the environment</p> <p>Describe the concept of Sustainability and Green Development and their application to water management.</p>	
<b>Mode of Delivery:</b>	Face- to- face / teleconference / e-platform
<p><b>Course Contents:</b></p> <p><b>Objective:</b></p> <p>The primary goal of the course is to help students understand the water problem and learn how to analyse and comprehend the basic principles of water resources planning and management</p> <p><b>Description:</b></p> <p><b>Introduction to the water problem:</b> Distribution of water on Earth. Global water use. The global water deposits. Global population growth and human activities.</p>	

<p><b>Demand vs supply of water.</b> Physical availability of water (precipitation, evapotranspiration, groundwater, surface water). Water in the various uses (urban, agricultural, industrial etc.) Water balance, indicator of sustainable water management. Water quality and water availability issues.</p> <p><b>Water resources management under climate change conditions.</b> Impacts of climate change on water resources management.</p> <p><b>Principles of Integrated Water Resources Management:</b> Integrated water policy, Demand management and applied tools to achieve water conservation. Water as an economic good. Decentralized management and public participation</p> <p><b>Transboundary river basin management. Conflict management.</b> Conflict management,</p> <p><b>International legislation for water resources management.</b> The EU Water Framework Directive. International legal framework for the management of transboundary water resources</p> <p><b>Preparation of a water management plan.</b> Data collection, use of databases, content of a water management plan.</p> <p><b>Green development and water.</b> Basic notion of Green Development. Examples of GD applied in water resources management</p>					
<p><b>Recommended</b></p> <p><b>or</b></p> <p><b>required reading:</b></p>	<p>Thomas V. Cech, Karrie Lynn Pennington, Introduction to Water Resources and Environmental Issues, 2010</p> <p>Water resources management-Vol.1 (e-book)</p> <p>GWP: Integrated Water Resources Management. Global Water Partnership Technical Advisory Committee (TAC), Background papers no4, Stockholm.</p>				
<p><b>Planned learning activities and teaching methods:</b></p>	<table border="1" style="width: 100%;"> <tr> <td style="width: 60%;">Class Instruction</td> <td style="width: 40%; text-align: center;">42 Hours</td> </tr> <tr> <td>Consultation</td> <td style="text-align: center;">15 Hours</td> </tr> </table>	Class Instruction	42 Hours	Consultation	15 Hours
Class Instruction	42 Hours				
Consultation	15 Hours				

<b>Assessment methods and criteria:</b>	Examinations	50%
	Assignment(s)	25%
	Project(s)	20%
	Class Participation	5%
		100%
<b>Language of Instruction:</b>	English	