

# Work package 1

## “Higher education in the field of water engineering”

- Deliverables report -

6. Workshop at M&S Umweltprojekt GmbH Plauen/Germany  
30.06.-04.07.2014

# WP1:      Lead partner:      TUD

<b>Lead Partner: TUD</b>	<i>Type of work package</i>	<i>Title of work package</i>	<i>Start</i>	<i>End</i>
<b>WP.1</b>	<b>Development</b>	<b>Higher education in the field of water engineering</b>	<b>1</b>	<b>25</b>
<b>1.1</b>	<b>Kick-off Workshop (mit 1.3)</b>	<b>Events: Conferences and Seminars</b>	<b>DAM/MHE</b>	<b>2011-01-17</b>
<b>1.2</b>	<b>Comparison of higher education systems</b>	<b>Report</b>		<b>2011-01-17</b>
<b>1.3</b>	<b>Workshop</b>	<b>Events: Conferences and Seminars</b>	<b>TUD</b>	<b>2011-01-17</b>
<b>1.4</b>	<b>Development of hi. education structure for</b>	<b>Report</b>		<b>2011-05-16</b>
<b>1.5</b>	<b>Workshop</b>	<b>Events: Conferences and Seminars</b>	<b>BOKU</b>	<b>2011-05-16</b>
<b>1.6</b>	<b>Definition of the modules for the new education</b>	<b>Report</b>		<b>2011-12-15</b>
<b>1.7</b>	<b>Developing of teaching materials</b>	<b>Report</b>		<b>2011-12-15</b>
<b>1.8</b>	<b>Quality Management and Accreditation</b>	<b>Report</b>		<b>2011-12-15</b>
<b>1.9</b>	<b>Workshop</b>	<b>Events: Conferences and Seminars</b>	<b>ALBA/MHE</b>	<b>2012-01-31</b>
<b>1.10</b>	<b>Developing of professional training courses</b>	<b>Report</b>		<b>2012-10-31</b>
<b>1.11</b>	<b>Workshop (gemeinsam mit 3.2)</b>	<b>Events: Conferences and Seminars</b>	<b>AU</b>	<b>2013-01-31</b>

# Description of work package (1)

- Higher education in the field of water engineering should be developed in the form of new structures for Syria.
- The Kick-off-Workshop is assigned to the WP1.
- As a basis of the development a comparison is carried out between the education systems in Syria and this one in the involved and other countries the EU.
- Questions of the student academic self-government also play a big role.
- The requirement profiles from the practice and research are considered to the education.
- After the definition which courses of studies in which university will should be set up the modules of the study courses define according to the Bologna system (e.g., ECTS-credit points.).
- The aspects of faculty-crossing, interdisciplinary and trans-disciplinal should be included to the study courses.
- The study courses must consider the special requirement for a sustainable water resource management under the economical, climatic, population conditions of Syria.

# Description of work package (2)

- New teaching materials, Internet platforms and e-Learning should be developed for the preparation of the new education structures. .
- Finally a system of the quality assurance and accreditation is to be developed.
- The results are summarized into suitable reports and are made available to the involved consortium members. In addition, this is held accessible in the Internet main entrance worldwide and is presented internationally to the final meeting.
- In the intermediate workshops the working groups tune her results.
- In addition to the workshop the involved institutions receive the possibility for bilateral working stays.
- Beside the education of young people strong attention is to be given to the further education and training courses of the graduates in practice. This happens by development of training courses by the universities for the society and by development of work accompanying further education program to the acquisition of other academic degrees.
- Also this is concluded with a workshop for the spreading of the results.

## **1.2 Comparison of higher education systems**

- The deliverable 1.2 is the report about different activities.
- In this one is include the analysis of the higher education structure at the cooperating Syrian as well as EU universities in Water engineering.
- In dependence from the analysis results a comparison of the different higher education systems will be described.
- Besides to the teaching process the student self-administration structure in the EU and Syria are investigated.

## 1.2 Comparison of higher education systems – Content of Final report (1)

### Structure of HES

- in Syria - *Wahed, M.N. A., Deputy Minister of High Education*
- in Damascus University - *Seif, W.,*
- in Tishreen University Lattakia - *Hassan, I.,*
- in Al-Baath-University Homs - *Shaker, A.,*
- in Higher Institute of Water Management – *Al Shibai, M.,*
- in Aleppo University - *Aldarir, A.N.,*
- in Technische Universitaet Dresden - *Graeber, P.-W.,*
- in University Rostock - *Eckstaedt, H.,*
- in University of Applied Sciences Dresden - *Grischek, T.*
- in Austria - *Loiskandl, W.: BOKU Vienna*
- in Czech Republic - *Matula, S.: CULS Prague*
- in Poland - *Ciesielszuk, T.: Opole University*

## 1.2 Comparison of higher education systems – Content of Final report (2)

### Structure of HES

- request to the universities by Arab Center for the Studies of Arid Zones & Dry Land - *Marai, J., ACSAD*
- request to the universities by General Company for Engineering Studies and Consulting - *Haboub, M.N.: GCEC*
- request to the universities by M & S Umweltprojekt - *Maertner, B.*
- request to the universities by Environmental Ministry - *Eckardt, A., Saechsisches Staatsministerium Umwelt und Landwirtschaft*
- request to the universities by Stadtentwaesserung Dresden - *Balmer, G., Stadtentwaesserung Dresden“*

## 1.2 Comparison of higher education systems – Content of Final report (3)

- “Questioning the role of internationalization in the nationalization of higher education:  
the impact of the EU TEMPUS Programme on higher education in Syria”

*by Rami M Ayoubi and Hiba K. Massoud, Ministry of Higher Education and Damascus University, Syrian Arab Republic, 2012*

- “HIGHER EDUCATION IN SYRIA” 2013

– edited by  
*Education, Audiovisual and Culture Executive Agency (EACEA),*

*Unit P10 - Tempus and Bilateral Cooperation with Industrialised Countries and National Tempus Office Syria*

- The Bologna process and structure



## **1.4 Development of higher education structure for Syria (1)**

- This deliverable proposes a modern higher education structure for water engineering in Syria in compliance with the results of deliverable nr. 1.2.
- This modern higher education structure is equivalent to the structure of Lisbon agenda and the Bologna process.
- Second in this one a profile of requirements on a graduate in the field of water engineering/hydro sciences will be defined.
- These criteria are the requirements by practice and research.
- This structure is certifying by the MHE and 4 Syrian universities.

# **1.4 Development of higher education structure for Syria (2)**

Topics are:

1. Reforming of higher education in the field of water sciences by
  - Stronger linking between natural sciences, civil engineering and basic sciences
  - Greater involvement of research into the education
    - Implementation of research results into the practice
  - Short-term implementing of innovative solutions from practice into the education
  - Defragmentation; more intensively connection between faculties (Export-Import of education)

# 1.4 Development of higher education structure for Syria (3)

Topics are:

2 . Discussion about the new Higher Education structure in the participating Syrian universities in accordance with the Bologna process

- Reduction in the total study period of 5 years (Bachelor + Master)
- Modularization, awarding of ECTS
- Acceptance of certificates in the EU
- Introduction of Long Life Learning process

The majority of students should complete the master. This means that Syria needs to reduce his Bachelor degree to 3 years

Examples for the study construction at EU-universities was exemplified (TUD, BOKU, CULC, URO).

# **1.4 Development of higher education structure for Syria (4)**

Topics are:

3. Development of new structures of a higher education system for the 3 fields of studies

- Water Management
- Hydrology
- Soil-and Groundwater Science and Engineering

The work was carried out in working groups of Syrian and EU partners → Preparation of educational schemes for Bachelor and Master courses in the field of Water Engineering, Hydrology and Soil Sciences

## 1.6 Definition of the modules for the new education (1)

- The modules of the different study courses from 1.4 describe the content (adapted to the subjects and applications in Syria) and load work (credit points) of the lectures, exercises and practical training. This one has an interface to the curricular which is outside of this project.
- These modules are equivalent to the Lisbon and Bologna.
- Assembling of the new modules, overall faculties, according to the requirements out of the development objectives for the water sector in Syria

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→ Modul programmes for Bachelor and Master programmes are in progress

## 1.7 Developing of teaching materials

- A modern education structure is combined with a modern teaching material.
- The modern teaching methods are formed by working groups, team working, project study and a big part of self-study.
- In this context teaching materials will be developed both in printed and in digital form.
- Implementation of Internet based learning methods.
- This material would be developed for selected universities and selected study courses

## **1.8 Quality Management and Accreditation**

- To enhance the quality and relevance of higher education in Syria a quality management for the monitoring of the new study structure would be established.
- A very important point for acceptance of the new study courses by the EU countries is the accreditation and the permanent quality management of the education system.
- Special guidelines are written and supervise by the EU universities.

# **1.10 Developing of professional training courses**

- This deliverable content the developing of training courses by the universities for the society.
- Therefore a strong cooperation between the universities and the enterprises is necessary.
- Besides it is necessary to develop extra occupational specialist trainings programs for graduated students (achievement of additional academic degrees).
- This one goes in the direction to Life Long Learning.
- In this context it is possible to study different sciences..