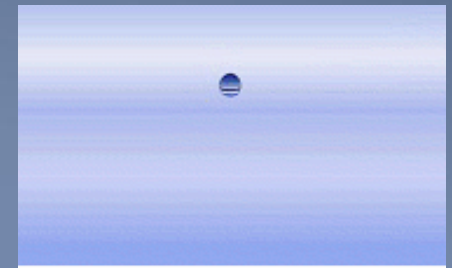


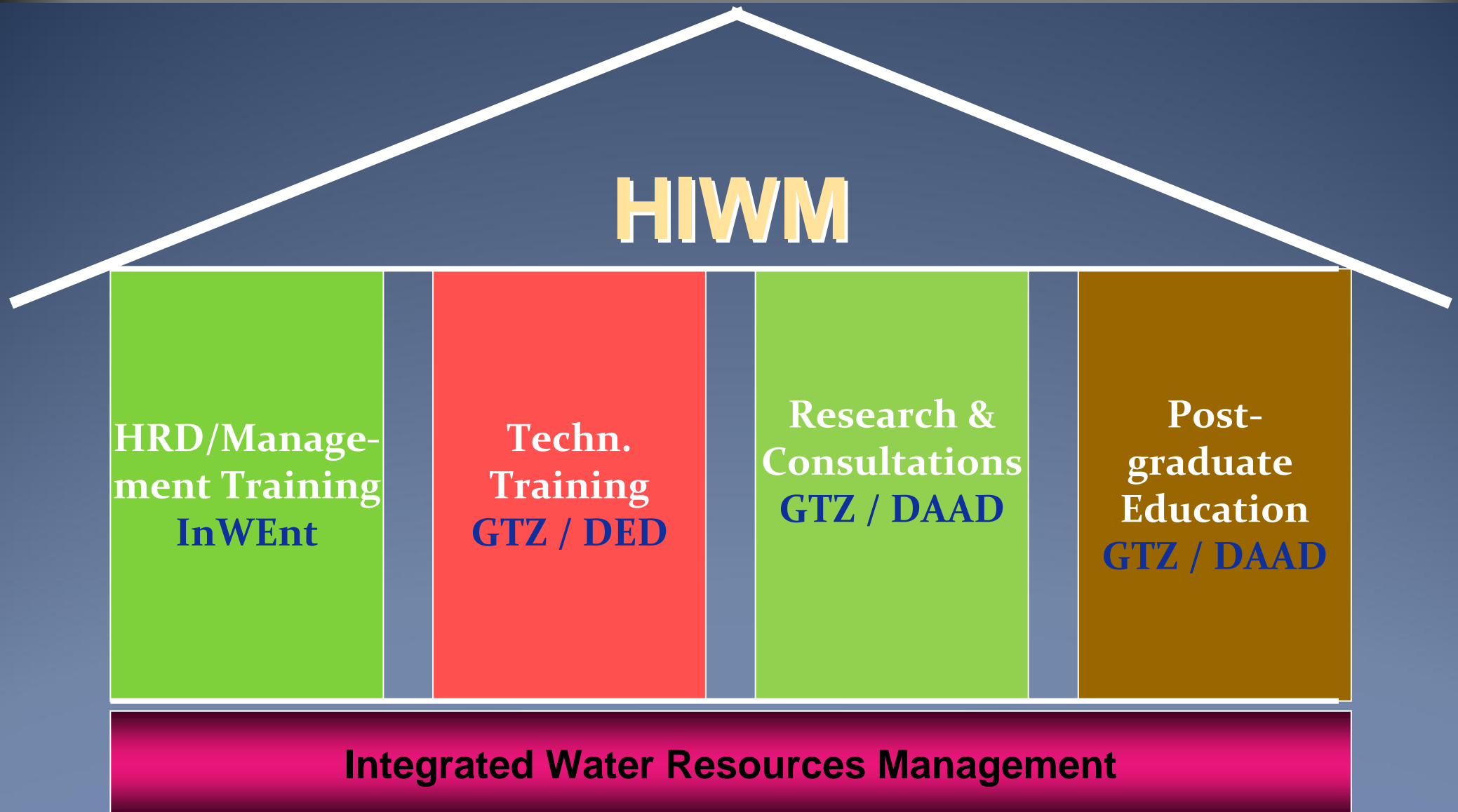
**Development of Higher Education System for Water Engineering in Syria**  
Kick off meeting; Damascus, 9-13/1/2011

# Structure of HES in the Higher Institute for Water Management (HIWM)

**Dr. Eng. Mahmoud Al-Sibai**  
Acting Dean, HIWM



# Main fields of activity





- The Institute is managed by:
  - The Institute Board, and
  - The Institute Dean.
- The Institute Board is formed as follows:
  - The Dean (Chairperson)
  - The Vice-Dean (Member)
  - Heads of the Departments at the Institute ( Members)
  - Provost of the Institute (Member)
  - One representative each from the Ministry of Irrigation, the Ministry of Housing and Construction, the Ministry of Agriculture and Agrarian Reform, and the Ministry of Environment (Members)

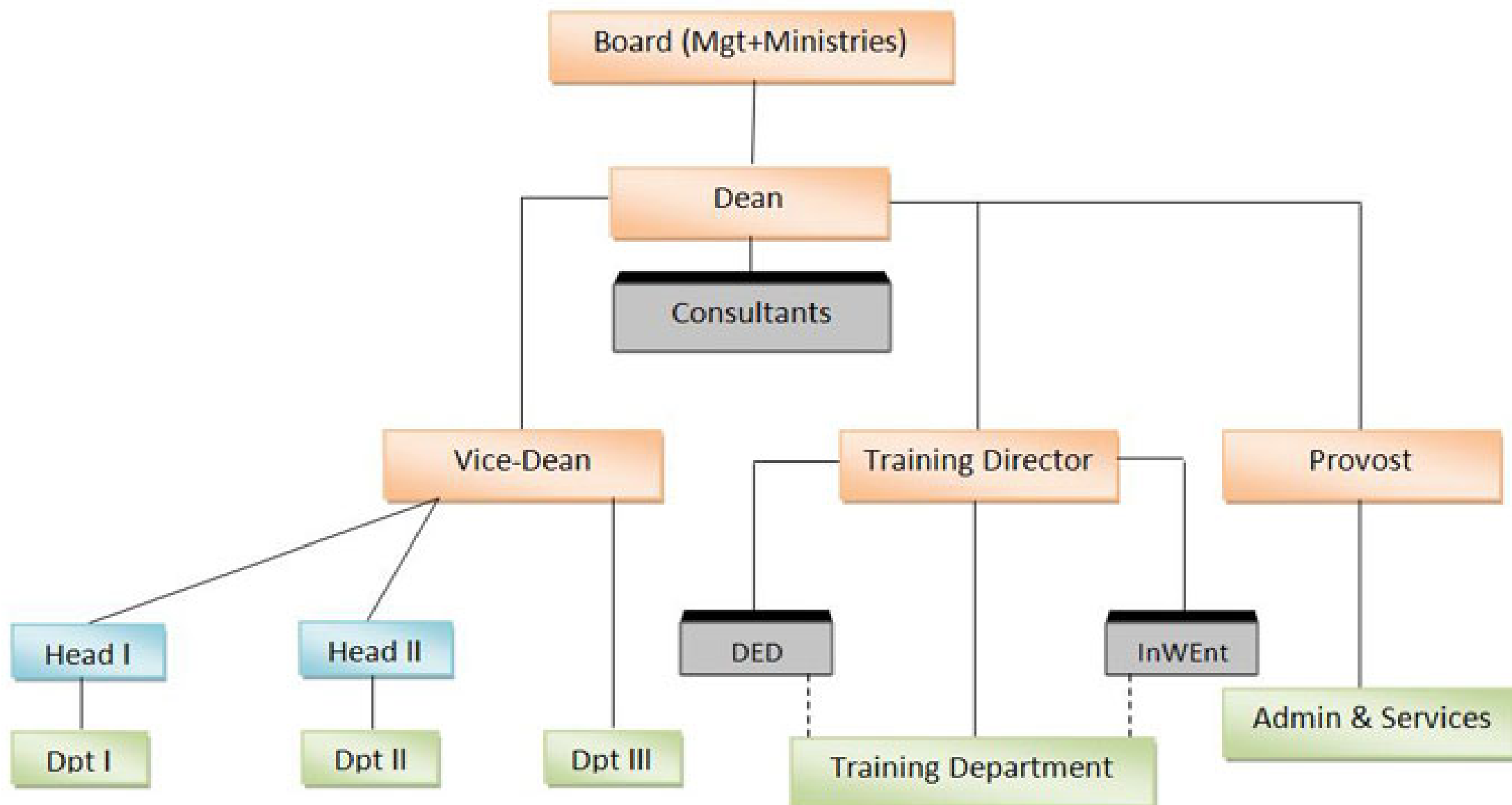


# Three Scientific Departments

- Department of Water Sciences,
- Department of Water Engineering, and
- Department of Water Resources Management



# Organisational set up of HIWM





- The Institute awards the following academic degrees:
  - Master's degree in Water Management
  - PhD in Water Management
- The duration of study at the Institute is determined according to the scientific degrees granted and as follows:
  - Two years of study including thesis work for obtaining a Master's Degree in Water Management (equivalent to 120 credit points in accordance with ECTS)
  - Three years of study including thesis work, after obtaining the Master's degree.



# Master degree in Water Management

- To apply for the MSc course of studies the applicants have to hold a BSc degree or a Diploma of a Syrian University. Equivalent certificates from the region or other countries are fully recognized.
- The admittance to the MSc course is only possible after having passed an entry examination which takes place once a year. Besides the English examination, basics in water-related subjects are tested.
- The MSc course has a modular layout which is conform to the European system. A module can either cover one topic or a logical combination of various topics.



- The courses will follow the rules of the internationally introduced European Credit Transfer System (ECTS). The ECTS credits are calculated as 30 hours of working load result in 1 ECTS. They are the result of the working load of the student.





- The M.Sc Curriculum was initially designed through consultation between German experts (RODECO, TU Berlin, FSP-WIB), Major stakeholders and a Committee from MHE in 2006 (within the consulting services for the elaborating of a conceptual design study for HIWM funded by kfw).
- Then it has been further modified by experts from Siegen University, HIWM, MHE, and Syrian Universities in 2010 (Within the current phase of *Launching the Higher Institute for Water Management* ).
- The Curriculum now is under process for formal approval by council of HE in Syria



al & week	1 <sup>st</sup> Semester Engineers	1 <sup>st</sup> Semester Natural Scientists	2 <sup>nd</sup> Semester	3 <sup>rd</sup> semester 1 <sup>st</sup> half (8 weeks)	3 <sup>rd</sup> semester 2 <sup>nd</sup> half(8 weeks)	Master Thesis 6 month after the last exam of 3 <sup>rd</sup> sem.
2	Geology 2h / week	Hydraulics  6h / week	Financial Management		14 days  Field Course	
2	Soil sciences 2h / week		4h / week			
2	Hydrogeology Groundwater Exploration 4h / week		Organizational Development & Management			
2		Irrigation & Drainage Systems 2 h/week	4h / week			
2	Water Chemistry 2h / week	Hydrology 2 h/ week	One Module out of Module 1- Module 8  M1 – M 8 8h / week	Database Organisation and Geo-Information- Systems (GIS) as Water Management Tools	Integrated Water Resources Management  & Integrated Project  8h / week	
2	Hydrogeochemistry 2h / week	Environmental Engineering - Water Supply & Sewage 2 h / week				
2	1 <sup>st</sup> integrated project on water resources team presentation of the results 4h / week					
2	Decision Orientated Business Administration  4h / week		One Module out of Module 1 – Module 8  M1 – M 8 8h / week			
2	Project Management and Presentation  4h / week					
2	Technical and Business English Language					



## First Year

### First Semester for Engineering Students (16 weeks)

CP	Teaching hours (Contact hours=TH+P) per week	Module	
12	2	Geology	
	4	Hydrogeology	
	2	Groundwater Exploration	
	2	Soil Sciences	
	2	Water Chemistry & Hydro-geochemistry	
6	4	Integrated Project on Water Resources	
12	8	Decision-Oriented Business Administration & Project Management and Presentation	
1	1	Technical and Business English Language	
31	25	<b>Total</b>	



## First Year

### First Semester for **non-Engineering** Students (16 weeks)

CP	Teaching hours (Contact hours) per week	Module
12	6	Hydraulics and Hydraulic Structures
	2	Irrigation & Drainage Systems
	2	Engineering Mathematics Hydrology
	2	Environmental Engineering – Water Supply and Sewerage.
6	4	Integrated Project on Water Resources
12	8	Decision-Oriented Business Administration & Project Management and Presentation
1	1	Technical and Business English Language
31	25	<b>Total</b>



## First Year

### Second Semester (16 weeks)

CP	Teaching hours (Contact hours) per week	Module
6	3	<b>Financial Management and Legal Aspects</b>
2	1	Advanced mathematics
6	3	Organisational Development and Management
2	1	Basic IWRM
10	8	Optional Module 1*
10	8	Optional Module 2*
1	1	Technical and Business English Language
37	25	<b>Total</b>



## Second Year

### Third Semester (16 weeks)

CP	Teaching hours per week	Module
First Half of Semester (8 weeks)		
	Weeks 8 /4	Financial Management and Legal Aspects
	Weeks 8 /4	Organisational Development and Management
9		Database Organisation and Geographic Information Tool Systems (GIS) as Water Management
Second Half of Semester		
5	14 Days	Field Course
10	8	Integrated Water Resources Management
2	2	Research Methodology and Thesis Preparation
1	1	Technical and Business English Language
27	Total	



Second Year		
Fourth Semester (6 Months)		
CP	Teaching hours per week	Module
30	24	Master thesis



## Optional Modules for Second Semester

Module	
M 1	Groundwater Management & Watershed Management Impact of climate change on water resources
M 2	Coastal Zone and Karst Water Management Conceptual and Numerical Models
M 3	Water Supply and Sanitation Waste water treatment Management and re-use
M 4	Water Quality Management – Ground and Surface Water Environmental impacts of water projects
M 5	Decentralised Water Systems
M 6	Process Technology and Optimisation Modelling of Wastewater Treatment and Drainage
M 7	Special Tools in Water Management e.g. Groundwater Storage and Recovery, Meander, Isotopes, Tracer Techniques
M 8	Advanced IWRM (Supply and Demand Management, Shared Water resources , conflict resolution..)





# Description of the module

- Objective, ILO
- Contents of the module
- Literature, scripts, refernces
- Description of the teaching method
- Workload and credit distribution
- Exam and marking of the module (assessment method)
- Duration of the module



M1	Groundwater Management / River Basin Management
<b>Contents</b>	<ul style="list-style-type: none"> <li>– Principles of integrated water resources management</li> <li>Legal and administrative aspects –</li> <li>Water resource analysis and planning –</li> <li>Geographic information systems and database management –</li> <li>Catchment management –</li> <li>Water resources modelling –</li> </ul>
<b>Objective</b>	<p>The students are familiar with the principles of a sustainable use of groundwater as well as with hydraulic tests, quality and quantity estimation and how to guarantee a long-term use of the resources with a complete hydrological balance. The use of tools of exploration and exploitation are known and can be applied in the management. The integration of surface and groundwater is understood and quantity and quality can be managed. River basin management is concerned with the interactions between surface water and groundwater as well as the interaction of anthropogenic influences on the river basin system. In this regard, the students become familiar with sustainable concepts for land and water use, the water cycle and the morphodynamics. Knowledge of the single sources and the water bodies as a whole will be mediated.</p>
<b>Year of study, semester</b>	<b>2<sup>nd</sup> semester</b>
<b>Teaching method, duration</b>	<b>8 hours per week</b>
<b>Tests</b>	<b>1 x 4 hours</b>
<b>ECTS</b>	<b>10</b>



<b>MO 7</b>	<b>Integrated Water Resources Management and Integrated Project</b>
<b>Contents</b>	An elaboration of a complete project for water supply, distribution and collection of water, sewage treatment, and the use of treated sewage in small groups.
<b>Objective</b>	The students realise a particular project and learn the principles of IWRM by using e.g. the toolbox of the Global Water Partnership or other independent organisations. A regular exchange between the different groups can take place and a regional structure can be established. This will help each group to find the best solution for their project as well as for solving future problems in real life. <b>The special aim of the module is a direct and practical training of the students and on-site corrections by the supervisor which allows for a learning-by-doing process.</b>
<b>Year of study, semester</b>	<b>3<sup>rd</sup> semester, 2<sup>nd</sup> half</b>
<b>Teaching method, duration</b>	<b>8 hours per week</b>
<b>Tests</b>	<b>Individual report and 1x 2 hours</b>
<b>ECTS</b>	<b>10</b>



- There are three modules which combine between different disciplines which are: Decision-Oriented Business, Financial Management & Legal Aspects, and Organisational Development & Management.
- All the courses have practical section which could be as laboratory work or exercises or seminars or field course. Integrated projects are good chance for students to use real-world examples and make extensive use of case studies.
- More attention is paid to sustainable development and conservation of environment and ecological systems. Environmental impacts of water projects is also discussed in one of the optional modules



# PhD degree in Water Management

- The Doctorate programme is scheduled for three years
- The requirement for the Doctorate course at HIWM is a Master of Water Management (MWM) degree with high qualification. An MSc degree from another university or institute, equal to the standard of HIWM, may also be acceptable as an access to the HIWM Doctorate programme



# Scientific and applied research

- HIWM will control and supervise a research waste water treatment plant which is going to be installed in Homs in cooperation with TU Berlin within the project "Water - Sustainable Use of a Cultural Asset in the Arabic Area" sponsored by DAAD. The location of WWTP is at student accommodation adjacent to the university.







- drafted an agreement with IRD (L'Institut de recherche pour le développement, France) for scientific research on "*develop and evaluate water management tools based on models, observation networks and remote-sensing data to analyze the past, present and future water budget of the Orontes River Basin and some selected hydrological subsystems*" The Partners of this agreements are:
  - ACSAD, Al-Baath University, Ministry of Irrigation and ministry of Agriculture





## Cooperation between universities and enterprises, research institutes, engineering groups/offices

- HIWM has good cooperation with the main four ministries concerned with water (ministry of Irrigation, Agricultural, Environment, Housing & construction) and focal points been nominated by their respected ministers.
- Al-Baath university is committed to support and cooperate with HIWM in all activities and projects
- HIWM participated in formulating the national water recourses plan within a committee nominated by the vice Prime Minister.





# Training Activities and Life-long-Learning

- **Aim:** Upgrading the knowledge and the know-how of the professionals working in the water and sanitation sector
- **Training Needs Analysis in the Syrian Water Sector**
  - One ministerial meeting and Two workshops had been organized in Nov 2009 and Dec. 2009 to define the training needs of the Syrian Water sector
  - Four ministries were participated in these workshops. They are
    - Ministry of irrigation
    - Ministry of housing & construction
    - Ministry of agriculture
    - Ministry of environment



- As a result of the findings of the assessment, it was proposed to concentrate the specialised short-term courses on two key areas:
  - Water sector management and organisational (In cooperation with InWEnt), and
  - Technical issues.
- Technical and managerial trainings are continued next year 2011 according to the needs of related ministries. In addition, an "alumni" workshop at the end of the year is planned (and agreed to be sponsored) to evaluate our activities and highlight the further needs of trainings.





- The training courses are offered at two levels:
  - At a higher, perhaps more general level for academics and decision-makers in the water sector, and
  - At a more practical level for the operational staff in the water sector (technicians, low grade engineers etc.)



# Training activities in 2010

Name of training	Subject area	Period/ duration	Target Group	In Cooperation With	Na. of Participant
Basics on Management	High Management training	5 days 7-11/2/2010	Higher Managers	InWEnt	11
Communication is the Key	High Management training	5 days 14-18/3/2010	Higher Managers	InWEnt	11
Developing & Guiding People	High Management training	5 days 25-29/4/2010	Higher Managers	InWEnt	11
New approaches for estimating crop water requirements	Technical training	2 days 19-20/5/2010	Engineers	IRD	23

InWEnt, Capacity Building International, Germany.  
IRD (L'Institut de recherche pour le développement, France)

# Activities with InWEnt in 2010

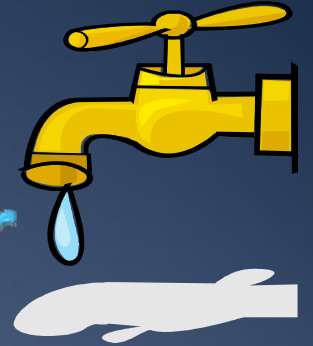


**inWEnt** Capacity Building International, Germany, has the mission to support partner organizations all over the world in strengthening the development of their human resources. It is one of the world's largest providers of human resource development programs. For the years 2008 to 2011, InWEnt has designed a program for “**Promotion of capacity building institutions to support reform processes in the Middle East and North African Region (MENA)**”, taking the example of the water sector

# Participating countries, responsible institutions, project and strategic partners

Countries - region	Responsible / umbrella institutions	Project partners	Strategic partners
<b>Egypt</b>	<b>HCWW</b> (Holding Company for Water and Wastewater)	<b>CoL</b> (Center of Leadership of the Human Resource Development Sector of HCWW)	<b>GTZ</b>
<b>Morocco</b>	<b>ONEP</b> (Office National de l'Eau Potable)	<b>IEA, Rabat</b> (Institut International de l'Eau et de l'Assainissement)	<b>(KfW)</b>
<b>Syria</b>	<b>Ministry of Higher Education</b>	<b>HIWM, Homs</b> (Higher Institut for Water Management)	<b>GTZ, KfW, DED</b>

# Training on Higher Level Management for the Syrian Water Sector



The purpose of this training course is to strengthen the general management competences of the institutions in the Syrian water sector and to improve their overall operational and administrative performance.

## **It consists of three Modules:**

Module 1: Basic principals of management

Module 2: Communication is the Key

Module 3: Developing and Guiding People





# New methodological elements in training sessions

## • methods of instruction

- Lectures and manuals
- Group Building (knowing each other)
- On-the-job training
- Training games
- Role play
- Brain storing
  - Discussion
  - Cards and flipchart







# Main question

- A lot of Training offered, and are offering, by other organizations and private companies in the last two decades (JICA, TNO, ACSAD.....etc) in Syria and abroad.
- Most of these trainings were not leading to the anticipated impacts. The major deficit was that the trainees did not develop the capacities to implementing the new knowledge at their working places.
- How we develop Impact Oriented training?



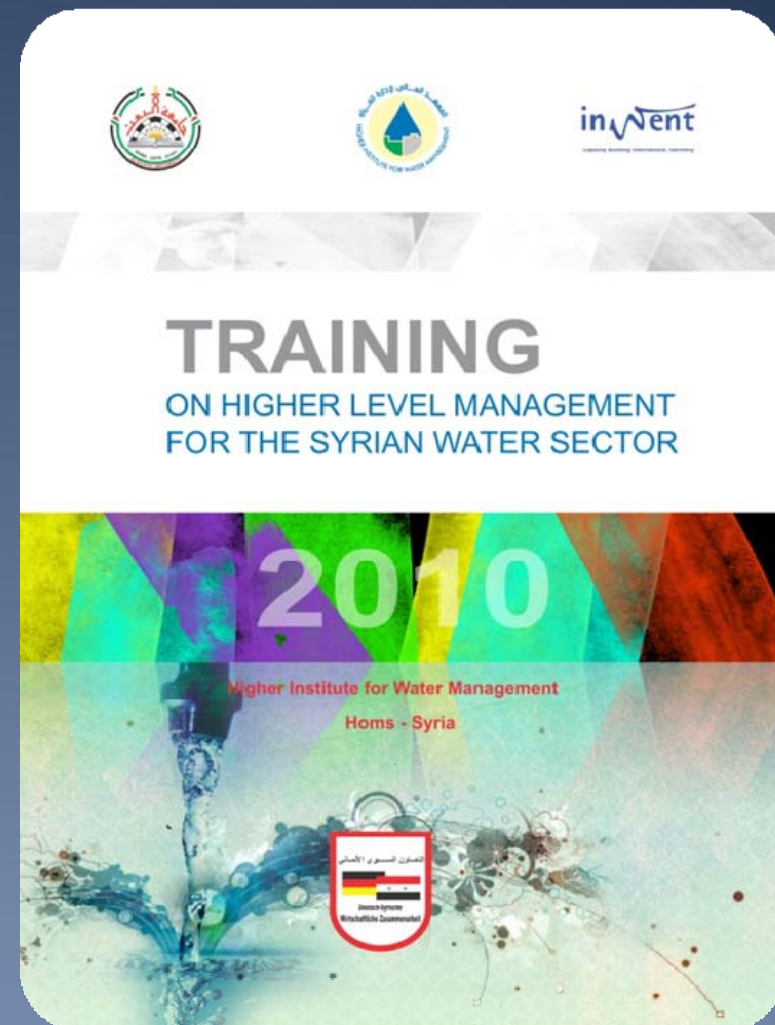








g Course 1 | Training Course 2 | Training Course 3 | Workshop in May





# Workshop in May

“Optimizing water use in  
irrigated areas”

“17-18/5/2010”

## And training course

“New Approaches for  
Estimating Crop Water  
Requirement”

“19-20/5/2010”

Workshop on  
Optimizing water use in irrigated areas”

AlBaath University, Homs, Syria

May 17-20 2010



Organized jointly by

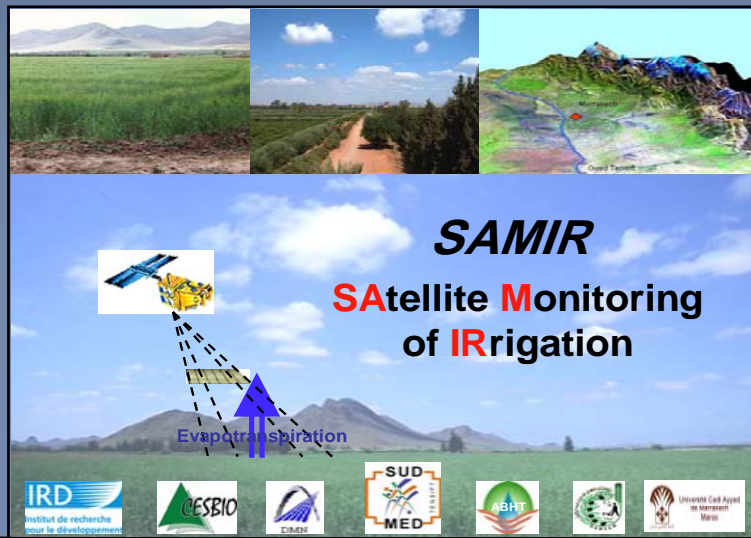






The workshop/training course lasts until 20/05/2010 with the participation of four experts from the IRD and three Arab experts, in addition to experts from ministries and Syrian institutions.

The Trainees were trained to use the program SAMIR (Satellite Monitoring of Irrigation) developed by the IRD to assess the crop water requirement.





# Realization of the “Triangle”

- HIWM board contains representatives from all related ministries which mean that HIWM activities will be in accordance with national needs.
- The integrated projects aim to help student to put knowledge into practice



Website address: <http://hiwm.albaath-univ.edu.sy>



# Higher Institute for Water Management

Contribution to a state-of-the-art development of the human resources in the field of water management



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### Coming Events

Workshop on Optimizing Water Use in Irrigated Areas

Al-Baath University, Homs, Syria, May 17-20 / 2010

### Closing of the Workshop

Sunday, May 02

The workshop is closed by Dr. Mahmoud Al- Sibai , Mr. Wollers and Dr. Ghada William on Thursday



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### Closing of the Workshop

Monday, May 24

Under the patronage of Prof. Dr. Amer Fakhouri, president of Al-Baath University , in Cooperation with / IRD / , /ACSAD/,and the Higher Institute for



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### Training on Strengthening General Management

Tuesday, March 16

Representing the president of Al-



### Closing of the Workshop

Sunday, March 28

The workshan is closed hv Dr.





# Membership Area



## Higher Institute for Water Management

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تسجيل دخول

اسم المستخدم:

كلمة المرور:

#### Closing of the Workshop

Sunday, March 28

The workshop is closed by Dr. Mahmoud Al- Sibai , Mr. Wollers and Dr. Ghada William on Thursday 18/3/2010

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#### Closing of the Workshop

Sunday, May 02

The workshop is closed by Dr. Mahmoud Al- Sibai , Mr. Wollers and Dr. Ghada William on Thursday

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#### HE Minister of Higher Education meets Inwent Mission and HIWM Dean

Monday, March 15

HE Minister of Higher Education discusses ways of activating the training courses of the Higher Institute for Water Management

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#### Training on Strengthening General Management

Tuesday, March 16

Representing the president of Al-Baath University, Dr. Ahmad Mufeed Subh, Deputy-president of Al-Baath University opened Module-2

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Subjects( 2 Pages, 4 Per Page 8)



*Thanks for your attention...*

