



Water and  
Environment Centre

# Profile and Experience

The Water and Environment Centre  
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# Profile and Experience

## Background

The Water and Environment Centre (WEC) is the academic and research institute in the field of water and environment in Yemen. Studying at the centre provides you with high quality knowledge with focus on indigenous, current and future global water problems.

The WEC is the first water education centre in the region that has taken up an integrated water resources management approach. You are guaranteed privileged orientation to get top competencies, skills and knowledge required for your current and future career.

Besides education and training the WEC carries out practice oriented as well as fundamental research; offers a wide range of advisory services; and is the centre for outreach through networks, partners, facilities and knowledge.

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# Profile and Experience

## Education and Training

In 2004, the Water and Environment Centre postgraduate studies and training unit started the development of an MSc program on IWRM in collaboration with Wageningen University and the Technical University in Delft, the Netherlands. The curriculum has been developed, improved, adjusted and evaluated by lecturers, advisors and IWRM students. The entire curriculum was assessed and reviewed in 2013 to incorporate several cross-cutting topics, such as climate change and gender. .



# *The Water and Environment Centre, WEC*

## *Education and Training*

This document provides interested individuals in this program with the overall curriculum objectives, course objectives and expected competencies to be acquired by students upon successful graduation from the program. Moreover, we have included a description of the Water and Environment Centre, which provides the boundary conditions for this excellent curriculum. Although we present the curriculum description as a finished product, an educational program on a topic of water management is never finished. New activities, thoughts and insights are continuously incorporated in the program. WEC will continue this process of innovation with the help of the Yemeni water sector, the international community, and above all, the graduates from the program.

### **EDUCATION**

The WEC offers a full time educational Master of Science program in Integrated Water Resources Management (IWRM) based on critical thinking and innovative, creative, solution oriented viewing. The program interlinks different disciplines as agriculture, social sciences, gender, hydro geology and other topics with water management for a holistic urban and rural sustainable development. The language of instruction is bilingual Arabic-English, demanding two years of hard work study. Major subjects are listed in (Appendix 1). You may refer to the WEC brochure or WEC's website for more detailed information about the master program.

### **TRAINING**

With its rich history of training experience, WEC bridges the gap between policy makers and water users and managers by offering a wide variety of technical and scientific training courses (Appendix 1) to employees of the public and private water sector. Our interactive training methods in theory and practice is based on the unique expertise of our staff which builds capacities of individual farmers and water user associations, men and women and enhances sharing of knowledge and best practices in water management. (Appendix 2) lists WEC's Short Training Courses.

# Research and Advisory Services



The WEC provides public and private institutions with a variety of advisory services, supervision and project implementation, and research programs in the domain of water and environment delivered by a wide range of high qualified professionals.

## Research

The major role of WEC is to investigate the reasons for water and environment associated problems and find solutions for its related is-

ssues. The Research and consultancy Unit is designated to take the lead for well orienting WEC researches within appropriate academic methods and practical approaches.

Since the beginning, the WEC supervises many diploma projects, MSc (Appendix 3) and pilot researches in collaboration with the water sector (Appendix 4). The aim of the researches touches crucial topics as sanitation, wastewater treatment and usage,

desalination, surface and sub-surface water hydrology, water availability versus water demand, community participation and the exchange of local water management experiences, water policies and water sector performances and many other related topics.



# *Advisory Services*

## *Trust our services*

The WEC is well recognized by international agencies, water authorities and collaborative partners in leading and implementing many consultancy/advisory projects in water and environment fields in Yemen.

For feasibility studies, economic and financial experts at WEC as well as in other water domains such as: water structures designing and implementation; spate irrigation; sustainable agricultural techniques; water policies and strategies; water extension and social role; and water conflicts and justice.

WEC expertise and experience of completed or ongoing projects is illustrated in (Appendix 5).



WECC

*An Outreach Center*

# Outreach

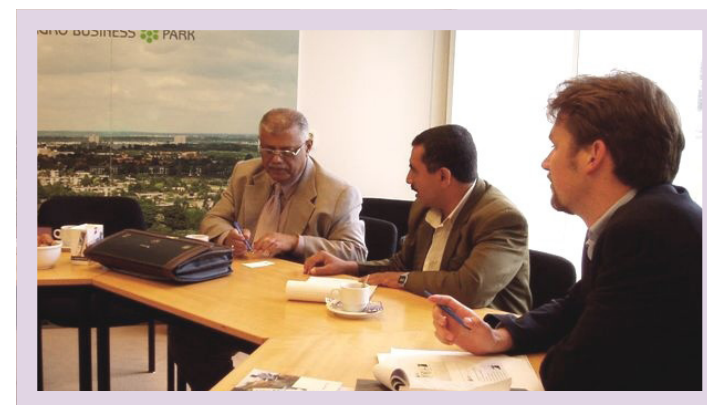
The WEC has a wealth of experience reflecting outstanding water education and research and aiming to be a centre for excellence. We are excited to bring our experience and outreach to researchers, communities, extension professionals and policy makers. This outreach is transferred via our outstanding website [www.yemenwater.org](http://www.yemenwater.org), publications (Appendix 6), public seminars, workshops and conferences.

We are in partnership with local and national relevant development sectors, authorities, departments and offices and with related regional and international research centres, universities and organizations (Appendix 8). It is our mission to share local expertise with international ones and exchange knowledge among different actors working in water management on all societal political and educational levels. Detailed information can be found in the knowledge and outreach leaflet of the WEC. And for more information on WEC's services including the Water

Library, Lab, water and environment events (Appendix 7), and research database, visit our website: <http://www.wec.edu.ye/>

- *Partnerships and networks*
- *Sector and societal engagement*
- *Information facilities*

**Curious? Check out our “Outreach” brochure, or visit our website.**



# 1. IWRM MSc and Diploma Program (Courses)

## Semester 1

### 1.1 Integrated Water Management

- 1.1.1 Introduction to IWRM
- 1.1.2 Water Issues in Yemen and the Arab Region
- 1.1.3 Hydrogeology and Water Resources in Yemen

### 1.2 Urban Water Management

- 1.2.1 Water Use in Urban and Rural Areas
- 1.2.2 Sanitation and Waste Water Treatment
- 1.2.3 IWRM Case Study

### 1.3 Water Use in Agriculture

- 1.3.1 Water Use in Agriculture
- 1.3.2 Water and Environment

### 1.4 Water Governance

- 1.4.1 Water Rights and Policies
- 1.4.2 Gender and Water

- 1.4.3 Water Value and Economics

### 1.5 Basic Skills

- 1.5.1 Report Writing
- 1.5.2 Basic Computer Skills and Research Methodology
- 1.5.3 GIS/ RS

## Semester 2

### 2.1 Integrated Watershed Management (compulsory)

- 2.1.1 Introduction
- 2.1.2 Hydrology and Water Balance of a Watershed
- 2.1.3 Spate Irrigation within the Context of IWSM
- 2.1.4 Management Options and Tools to Solve IWSM Issues
- 2.1.5 Group Work Project



## **Semester 2 (cont.)**

### **2.2 Integrated Water Chain Management (Optional)**

- 2.2.1 Introductory: Explanations of the Water Chain Concept
- 2.2.2 Review of Conceptualisations of UWM from the Past up to Present
- 2.2.3 Urban Water Management in Yemen Region
- 2.2.4 Possible Integrated Urban Water Management (IUWM) Options in Newly Built Areas

### **2.3 Integrated Groundwater Management (Optional)**

- 2.3.1 Introduction to IGWM
- 2.3.2 Technical Aspects on Groundwater Management
- 2.3.3 The Role of the Government in IGWM
- 2.3.4 IGWM Aspects
- 2.3.5 Sana'a Basin Case Study

### **2.4 Integrated Coastal Zone Management (Optional)**

- 2.4.1 General Introduction
- 2.4.2 User Functions and Processes in Coastal Zones of Yemen
- 2.4.3 The Need for an Integrated Approach in Coastal Zone
- 2.4.4 Sustainable Development of Coastal Zones in Yemen

### **2.5 Environmental Impact Assessment (Compulsory)**

- 2.5.1 Environmental Impact Assessment
- 2.5.2 The EIA Process
- 2.5.3 The Context of Environmental Analysis
- 2.5.4 EIA Project Evaluation and Decision Making
- 2.5.5 Post Project EIA Activities
- 2.5.6 World Bank Project Classification
- 2.5.7 Preparation of EIA Terms of References

## **Semester 3**

### **3.1 Advanced Research Methodologies and Writing (Compulsory)**

- 3.1.1 GIS
- 3.1.2 Some Qualitative Analysis
- 3.1.3 Research Writing Course. This will include skills required and can be changed according to students needs

### **3.2 Diploma Project**

## **Semester 4**

### **4.1 MSc Thesis**

## 2. *Short Training Courses* \*\* More information can be found on: <http://www.wec.edu.ye/training>

- Crop Water Productivity
- Community Mobilization, Management and Awareness Creation
- Decentralized Awareness Program on Wastewater Management
- Design, Operation and Maintenance of Rural Wastewater Treatment Technologies Using Simplified Computer Programs
- Dams: Design, Rehabilitation, Management and Operation
- Environmental and Social Impact Assessment (ESIA)
- ESIA Case Studies for Different Sectors
- Environmental Management Plan
- Floodwater Harvesting and Spate Irrigation
- Gender and Water
- Geographic Information System / Remote Sensing, GIS/RS (Introduction)
- Geographic Information System / Remote Sensing (Advanced)
- Groundwater Fundamentals
- Groundwater Modelling (Introduction)
- Groundwater Modelling (Advanced)
- Hydrochemistry and water Quality
- Introduction to Integrated Water Resources Management (IWRM)
- Modern Irrigation Systems (Sprinkler and Drip Irrigation)
- Managing Unaccounted for Water (UFW)
- Operation and Maintenance of Dams' and Farms' Structures and Modern Irrigation Network Systems for Water User Associations (WUAs)
- Rainwater Harvesting Projects: Awareness, Operation and Maintenance
- Rainwater and Floodwater Harvesting for Domestic and Agricultural Uses
- Rural Water Supply Projects: Operation and Maintenance
- Sanitation Inside and Outside Buildings
- Socio-Economic Surveys
- Supervising Drilling
- Terms of Reference and Review for ESIA Studies
- Wadi Hydrology and Hydrogeology
- Wastewater Characteristics and its Role in the Operation of Treatment plants
- Wastewater Collection Systems
- Wastewater Management
- Wastewater Treatment Systems
- Water Quality Control
- Water Resources Management
- WUAs Capacity Building and Awareness

### **3. MSc Researches** *\*\* More information can be found on: <http://www.wec.edu.ye/research>*

Crop Water Productivity from the Field Level to the National Scale within the IWRM Framework, Case study: Qa'a Jahran

Analysing the Potential of Roof Rainwater Harvesting System for Water Supply in Manaka Town and Sur-rounding Area

Assessment of the October 24th 2008 Flood in Wadi Doan, Hadramout Towards Realization of IWRM

Assessing Ground Water Recharge Potential in Wadi Zabid and its Impact on Supplementary Irrigation of Crops in Spate Irrigation Areas

Assessment of Sources of Elevated Nitrate in Groundwater in Wadi Siham within IWRM Perspective

Assessment of Water Resources Situation of Ghayl Bawazir Area in Hadramout Governorate from IWRM Perspective with Special Emphasis on Indigenous Traditional Practices

Evaluation of the Benefits of Hammam Ali's Thermal Springs and their Sustainability from IWRM Perspectives

The Health and Socioeconomic Impacts of Silver Impregnated Ceramic Filters in Four Villages in Amran Governorate

Water User's Associations Evolution & Strengthening in Spate Areas within IWRM Approach, Case Study : Wadi Zabid – Tihama Plain

Assessing Climate Change Trend and its Effects on Field Crop Water Requirements and Productivities, Dhamar as a Case Study

Assessment of Introducing Water Saving Irrigation Technologies for Sustaining and Enhancing Crop Production in Jahran Area

Exploitation of Rainfall and Treated Wastewater as Alternatives for Groundwater Use in Sana's Basin

Evaluating the potential of Road Rainwater Harvesting in Yemen, A case study of the Maghrabah Manakah Bab Bahil Road, Sana'a Governorate

The Impact of Al-Azraqain Landfill on the Vicinity Groundwater Quality within IWRM Perspective

Integrated Disposal Water Management in Oil Production, Case Study: Block 14 Al-Masila

Assessment of Seawater Desalination as an Option for Augmenting Municipal Water Supply Ta'iz City and Integrating It into the Water Cycle

Assessment of Water Demand Management in Wadi Hadhramaut Using IWRM Perspective, Case Study: Tarim Area

Implementing Integrated Water Resources Management in Water Projects in Rural Areas in Al-Mahweet Governorate, Case Study: Yellaan, Sawaan, and Al-Dahabisha Villages

Integrated Water Quality Management and its Impact on the Population of Mawyah

Wastewater Reuse in Irrigation through Applying the IWRM Concept, Effluent of Sana'a Treatment Plant as a Case Study

The Impact of Sana'a Waste Water Treatment Plant on the Drinking Water Quality in Bani Al-Harith District /Sana'a City

Water Demand Management in Sana'a through applying the IWRM Concepts, Impact and Constraints of Grey Water Reuse in Agriculture at Sana'a City

Integrated Watershed Management for a Small Catchment within Sana'a Basin

## 4. Pilot Researches \*\* More information can be found on: <http://www.wec.edu.ye/research>

Researcher	Research Topic
Dr. Fadhl Al-Nozaily	Phytoremediation By Some Plants To Clean Polluted Soil With Heavy Metals in Bani Al- Harith- Sana'a
Dr. Abdulla Tahish	
Eng. Abdulwahab Salah	
Dr. Abdulla Noaman	Rainwater Harvesting from Rooftop in Urban Areas, Case study: Sana'a City
Dr. Mansuor Haidera	
Dr. Mohamed Mareea	
Eng. Abdullah Al- Saidi	
Dr. Abdulwali Alsharjbe	Using Distilled Water from Thermal Power Plants as an Additional Source for Drinking Water (Al-Heswa Power Station Plant)
Dr. Abdulla Noaman	
Eng. Jamil Ali	
Dr. Ahmed Al-Tawki	Evaluation of the Current and Potential Wastewater Reuse, A pilot plant at Sana'a WWTP
Dr. Fadhl Al-Nozaily	
Eng. Abdulwahab Salah	
Dr. Sharafaddin Saleh	3R manual for Sana'a Basin, 3R Rainwater Harvesting
Dr. Al-khteeb Al-kibsi	
Dr. Ahmad Al-Derwish	Case Study: Sana'a Basin (Al-Saylah)
Eng. Khalid Albar	
Dr. Sharafaddin Saleh	Analysing Rain Water Harvesting and Groundwater Recharge Potential from Roads in Yemen, its Social and Economic Benefits on Local, Regional and National Scale A Case Study of Wadi Al-Ahjar, as Part of Al-Mahweet Road
Dr. Abdullah Maswari,	
Dr. Fadhl Al-Nozaily	
Eng. Mohamed Al-Abyadh	
Dr. Bilkis Zabara	Production, Optimization and Characterization of Activated Carbon Derived from Sewage Sludge for Adsorption of Pesticides from Wastewater
Dr. Abdulbari Ahmad	

## 5. **Projects** *\*\* For more details and updates, check out our website: <http://www.wec.edu.ye/projects>*

- A comprehensive study on the utilization of five Wadis [Wadi Moure, Rima, Siham, Bana, and Ahwar} in the “Rapid Assessment of Wadis to be selected for IIP Phase II Project”. April-June 2006.
- Adapting to water security for Yemen’s vulnerable communities – Sana’a, Sada’h and Aden areas. 2007-2008.
- Africa to Asia and back again: testing adaptation in flood-based farming systems, April 2015 - March 2018.
- Analysis for a Study Reuse of Treated Effluent and Sludge in Aden, Amran, Hajjah, Ibb and Yarim, September 2003 – November 2010.
- Analysis of Private Water Providers in Urban and Peri-Urban Areas in Sana’a, Part A: A Field Survey of Service Providers, December 2009 - March 2010.
- Application of Near-Real Time Monitoring System for Irrigated Agriculture in MENA, 2014-2015.
- Appropriate low cost Waste Water Treatment (WWT) Technology for Yemen rural areas – Sada’h, Abs, Damt. 2006-2008.
- Assessing the impacts of climate change and variability on the water and agricultural sectors and the policy implications, February 2009 - August 2009.
- Building on indigenous knowledge for water demand management in Yemen: the enhancement of traditional garden irrigation with mosque greywater, February 2006 – July 2008.
- Characterisation of Sana’a Basin and selection of Sub-basins, June – December 2000.
- Climate change effects on agriculture in Yemen. 2009.

## 5. *Projects (cont.)*

- Community onsite anaerobic sewage treatment in hybrid and uasb - septic tank systems, July 2006 – June 2007.
- Community Water Management Project CWMP (Hadramout, Dhamar and Taiz), June 2006-December 2009.
- Development of an Integrated Low Cost Anaerobic-Aerobic Biological System For Grey Water Treatment Capable of Natural Removal of Organic, Nitrogen and Pathogens (DILCA), Pilot study on Upflow Anaerobic Sludge Blanket (UASB) down flow filters for grey water treatment, September 2009 – September 2010.
- Evaluating the health and socio-economic impacts of colloidal silver impregnated ceramic filters in 4 villages in Amran Governorate. December 2007-July 2008.
- Expert Mission to Assess and Propose Alternative Sanitation Systems to meet the Demand of the Urban Poor Population in the Republic of Yemen, February – August 2004.
- External trade effect over agriculture and fish wealth in the Republic of Yemen. October – December 2005.
- Facilitating the rural communities in the process towards the creation /reactivation of farmers associations in four sub basins of the Sana'a basin. December 2014-December 2015.
- Groundwater and Soil Conservation Project (GSCP) – Beneficiary Impact Assessment (BIA), January - June 2012.
- Groundwater in the Political Domain (CoCoon Project), October 2010 – October 2014.

- Hydro-geological and water resources monitoring and investigations in the Sana'a basin, April 2005 – March 2007.
- Hydrological and hydraulic studies for the Wadi Bouish Bridge in Wadi Hatharomout during the flood period from 22-24 October 2008, April – July 2010.
- Investigation and selection of the proposed main line to serve the southern area of Sana'a capital city (Stage #4), May 2010 – January 2011.
- The Netherlands Program for Institutional Strengthening of Post-Secondary Education and Training Capacity (NPT): NPT/YEM/036, July 2004 – June 2008 (extended to 2009).
- Open and accessible data platform on irrigation for Yemen. 1 November 2013 - 31 October 2017.
- Options for changing the economic incentive structures for groundwater extraction in Yemen. 2008.
- Participatory Watershed Management Project (PWMP) in Dhamar Area, December 2008 – May 2009.
- Private water providers in urban and peri-urban areas in Sana'a; part a: a field survey of service providers, December 2009-March 2010.
- Rainwater Harvesting Technics for drinking water availability in rural areas in Yemen, February - April 2013.
- Rural water quality study in three areas in Yemen (Abyan, Ibb and Hajjah). 2006-2008
- Sana'a basin well inventory project, April 2001 – May 2002.
- Sana'a water supply and sanitation project. 2000-2001.

## 5. *Projects (cont.)*

- Satellite Analysis of Cropping and Irrigation Water Use Project (SACIWUP), January – December 2000.
- Social and environment impact assessment at the water treatment station in Bani Al-Harith Area. 2007.
- Social and environment impacts assessment on the roads in Hajja and Amran Governorates, December 2012- Mar 2013.
- Spate irrigation for rural growth and poverty alleviation. April 2011-December 2014.
- Strengthening research capacity in Yemen’s water sector for policy formulation education and awareness rising. NICHE/YEM/027, January 2011-December 2015.
- The irrigation improvement project in Wadi Bana, Wadi Hassan, Wadi Tuban, Wadi Zabid and Mawr”, 1999.
- The political economy of water management in Yemen: conflict analysis and recommendations, December 2013 –July 2014.
- Traditional Yemeni rural diets and local food systems: enhancing contributions to health and the environment supporting, March 2006 – March 2007.
- Wadi Siham watershed management plan, January- April 2005.
- Water conflict analysis in Yemen, December 2013-March2014.
- Water from roads in Yemen - a guidance note, October 2014 – February 2015.



- Conflict and Cooperation over Natural Resources in Developing Countries -Groundwater in the Political Domain, November 2010 - December 2014.
- Watershed management and waste water re-use in semi-urban areas of Yemen, July 2005.
- Well inventory of Sana'a Basin. June 2002 – June 2004.

## 6. Publications

WEC offers a variety of diverse publications in the water and environment field. For more information and regularly updated list, please visit our website page: <http://www.wec.edu.ye/publications>

- Abu-Lohom, Naif; Zabara, Bilkis; Babaqi, Abdulla & Nagi, Mona (2011): The environmental impact of Al-Azraqain landfill on the quality of the surrounding groundwater, Sana'a city, Yemen 4th International Conference - Water Resources and Sustainable Development (CIRED'4) February 22-23 2011, Algiers/Algiers.
- Al-Weshali, Adel; Bamaga, Omar; Borgia, Cecilia; van Steenberg, Frank; Al-Aulaqi, Nasser & Babaqi, Abdulla (2015): Diesel subsidies and Yemen politics: post-2011 crisis and their impact on groundwater use and agriculture. *Water Alternatives* 8(2):215-236.
- Al-Nozaily, Fadhl; Pelat, Frédéric; Al-Sabri, Abdulkarim; Al-Haddad, Abdurrahman & Al-Hakimi, Amin (2014) Promotion of indigenous knowledge in water demand management for the historical old Sana'a city gardens (Maqashim). WEC, Sana'a.
- Al-Qubatee, Wahib; from Dalseng, Carmen; van Steenberg, Frank; Ibrahim, Abdullah & Al-Weshali, Adel (2013): Ground water depletion, sand dune formation and local responses, Al-Mujaylis case study. WEC and MetaMeta Research, Sana'a.
- Atfa Allah M., Al-Nozaily, Fadhl; Mahmoud N and Al-Koli Hani (2010) Anaerobic Treatment for Sana'a Wastewater using UASB Reactor Pilot Plant. 10th Gulf Water Conference - Water in the GCC States, The Water-Energy-Food Nexus, 22-24 April 2012, Doha, Qatar.
- Haidera, Mansour & Noaman, Abdulla (2011): Water scarcity and climate change adaptation for Yemen's vulnerable communities, *Local Environment* 16:5, 473-488.

- Huntjens, Patrick et al (2014): The political economy of water management in Yemen: conflict analysis and recommendations (report). The Hague Institute for Global Justice, The Hague.
- J.W.A. Foppen; A. Noman, Abdulla (2008): Transport of Escherichia coli and solutes during waste water infiltration in an urban alluvial aquifer. J Contam Hydrol. 2008 Jan 7;95(1-2):1-16. Epub 2007 Jul 17.
- Noaman, Abdulla & Swarts, Chris (2009), Modelling water resources in the Sana'a basin, Yemen, using a WEAP model, IAHS Publ. 330, 84-89.
- Abdullah Noman; Fahmi Ben Shebraq; Anwar Noman, 2009. Yemen country report. In: T. Devisscher, et al., eds. Adaptation continuum: groundwork for the future. Lesuden, Netherlands: ETC Foundation, 325–340.
- Noman, Abdulla & Tahir, Taha (2003): Sediment problems of irrigation canals: field studies to assess the changes in canals profiles and cross sections. Journal of Science and Technology, Sana'a Republic of Yemen. 2003.
- Noman, Abdulla (2005): Ecohydrological-Erosion Model for semi –arid mountain catchment using GIS. The Arabian Journal for Science and Engineering, 2005/30:2C.
- Abdulla Noman; Status of water resources development and management in Yemen; published in: Reducing the vulnerability of societies to water related risks at the basin scale, Bochum, Germany, IAHS, Publ. 317, 2007, 186-190
- Saleh, Sharafaddin; Al-Maswari A.; Al-Nozaily, Fadhl and Al-Abyadh, Mohamed (2015) “Evaluating the Potential of Road Rain Water Harvesting in Yemen”, A Case Study of the Maghrabah Manakah Bab Bahil Road, Sana'a Governorate•

## 6. *Publications (cont.)*

- Al-Sharjabi, AbdulWali; Noman, Abdullah: Sedimentation problems in marine cooling channel of Mukha, Power Station, Yemen, University of Aden Journal of Natural and Applied Sciences 7(1) 2003: 151-159.
- Traditional spate irrigation system, Wadi Hadramout – Wadi Dow'an, 2013.
- Water security in Yemen, 2013.
- Zabara, Bilkis (2010): Public awareness experiences in the MENA region: Public awareness in water quality management in Amran governorate/Yemen. ACWUA, Amman.
- Zabara, Bilkis; Abu-Lohom, Naif; Al-Subbary, Abdulkarim & Al-Aulaqi, Amna (2012): The impact of thermal springs on the population of Hammam Ali, Dhamar governorate, Yemen” 10th Gulf Water Conference - Water in the GCC States, The Water-Energy-Food Nexus, 22-24 April 2012, Doha, Qatar.

## ***7. Major Events Hosted/Organized by WEC***

The Water and Environment Centre at Sana'a University has ample experience in hosting work–shops, conferences and seminars as listed below. The list below describes WEC's major events either hosted or organized by WEC. For more detailed, comprehensive, and up-to-date list, please visit our website page: <http://www.wec.edu.ye/category/news-and-events>

### **Hosted and organized events by or in collaboration with WEC**

- Introduction of GIS/RS in agriculture water demand, Sana'a, Yemen 23 April 2014.
- Spate irrigation for rural economic growth and poverty alleviation project regional WUA – workshop, Sana'a, Yemen, 16 -22 MAY 2013.
- Strengthening research capacity in Yemen's water sector for policy formulation, education and awareness raising, inception workshop – NICHE/YEM/O27, Wageningen, the Netherlands 30 May – 1 June 2012.
- National Conference on Water Management and Development of Water Resources in Yemen, Sana'a, Yemen 15-17 January 2011.
- Community Water Management Project (CWMP) closing workshop, Sana'a, Yemen 24 June 2009.
- Adapting to water scarcity due to the climate change for Yemeni's vulnerability communities, Sana'a, Yemen 17 June 2009.
- Political Economy of Water Demand Management in the MENA Region; the Case of Yemen, Sana'a, Yemen 7-8 July 2008.
- Evaluation of the health and socioeconomic impact of the silver impregnated ceramic filters in four villages in Amran governorate, Sana'a, Yemen 21 June 2008. s for changing the economic incentive structures for groundwater extraction in Yemen (LEI, the Netherlands and WEC), Sayoun and Taiz, 27 May 2008.

## ***7. Major Events Hosted/Organized by WEC (cont.)***

- Options for changing the economic incentive structures for groundwater extraction in Yemen (LEI, the Netherlands and WEC), Sayoun and Taiz, 27 May 2008.
- A GDLN training and capacity development on water demand management: Savings and South-South Learning with China (Video Conference), Sana'a, Yemen, 31 March-2 April 2008.
- 7th Arab Region Ecotechnie (AREN) meeting, Sana'a, Yemen 4-6 November 2007.
- Application of indicators and indices for water quality management in the ESCWA Region (Expert group meeting), Sana'a, Yemen 17-19 July 2007.
- Expert meeting on municipal waste water use for irrigation, Sana'a, Yemen 4-7 November 2006.
- Some anthropological perspective on issues of water in Yemen (seminar), Sana'a, Yemen 26 June 2006.
- Desalination of seawater for Sana'a Basin drinking water using concentrated solar power, Sana'a, Yemen 28 May 2006.

## ***8. Collaborating International Partners***

**\*\*For more information and annually updated list check out our website page on: <http://www.wec.edu.ye/links-and-partners>**

MetaMeta, <http://www.metameta.nl>

Spate Irrigation Network, (Pakistan; Ethiopia; Sudan; and Yemen), <http://spate-irrigation.org/>

ACWUA, Arab Countries Water Utilities Association, <http://www.acwua.org/>

Birzeit University, Palestinian Authority, <http://www.birzeit.edu/>

Cairo University, Egypt, <http://www.cu.edu.eg/>

Cap-Net: Capacity Building Network for IWRM, <http://www.cap-net.org/>

Food and Agriculture Organization of the United Nations (FAO), [www.fao.org/](http://www.fao.org/)

Freie Universitaet Berlin, <http://www.fu-berlin.de/>

Global Water Partnership, <http://www.gwpforum.org/>

Gender and Water Alliance, <http://genderandwater.org/>

Hohai University, China P.R., <http://www.hhu.edu.cn/>

Instituto Tecnológico y de Estudios Superiores de Monterrey, Mexico, <http://www.sistema.itesm.mx/>

IWRM Tool Box, <http://gwpforum.netmasters05.netmasters.nl/en/index.html>

Kwame Nkrumah University of Science & Technology, Ghana, <http://www.knust.edu.gh/>

## ***8. Collaborating International Partners (cont.)***

Makerere University, Uganda, <http://www.makerere.ac.ug/>

NanJing Hydraulic Research Institute, China P.R., <http://www.njhri.edu.cn/>

Regional Center for Urban Water Management, Iran, <http://www.rcuwm.org.ir/>

Technical University Delft, the Netherlands, <http://www.tudelft.nl>

UNESCO-IHE Institute for Water Education, the Netherlands, <http://www.ihe.nl>

UN ESCWA, <http://www.escwa.un.org/>

Universidad Blas Pascal, Argentina, <http://www.ubp.edu.ar/>

Universidad del Valle, Colombia, <http://www.univalle.edu.co/>

Universitas Katolik Parahyangan, Indonesia, <http://www.unpar.ac.id/>

University of Zimbabwe/Department for Civil Engineering, Zimbabwe, <http://www.uz.ac.zw/>

Wageningen University, the Netherlands, <http://www.wur.nl>

WaterNet, Zimbabwe, <http://www.waternetonline.ihe.nl/>





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