Management of Water Utilities at the Arab Region...
Challenges and Solutions...

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UNU-INWEH Another Drop Seminar
McMaster Innovation Park-Hamilton
February 1, 2011
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- Water Sector Situation
- Challenges & Constraints
- ACWUA start-up
- Conclusion
Introduction

• The available water sources throughout the world are becoming depleted

• This problem is aggravated by the rate at which populations are increasing, especially in developing countries.
Where we are?

Arab World

MENA Region

Developed Countries
Developing Countries

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1- Water Sector Situation

- The Middle East and North Africa Region (MENA) is the most water scarce region in the world.
- Worldwide, the average water availability per person is close to 7,000 m³/person/year, whereas in the MENA region, only around 1,200 m³/person/year is available.
- One half of MENA’s population lives under conditions of water stress.
- With the population expected to grow from around 300 million today to around 500 million in 2025, per capita availability is expected to halve by 2050.
Limited Water Resources

Actual Renewable Freshwater Resources per Capita, by Region

- Australia and New Zealand
- Latin America and the Caribbean
- North America
- Europe and Central Asia
- Sub-Saharan Africa
- East Asia and Pacific (including Japan and Koreas)
- Western Europe
- South Asia
- Middle East and North Africa

Source: FAO AQUASTAT.

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Limited Water Resources

The source of water varies from country to country. Some, like Egypt and Iraq, rely mostly on surface water from large international rivers. Others, like Yemen, Djibouti and the Arab States of the Gulf Cooperation Council countries, depend almost entirely on groundwater and desalination, while others use a mixture of surface and groundwater.
Increasing Population Growth

MENA Region Rural and Urban Population Trends, 1950–2030

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Increasing Population Growth

**MIDDLE EAST AND NORTH AFRICA**

**POPULATION DENSITY**

**PERSONS PER SQUARE KILOMETER**

Population data source: Gridded Population of the World

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Arid Climate Change Conditions

MIDDLE EAST AND NORTH AFRICA
ARIDITY ZONING
PRECIPITATION DIVIDED BY
REFERENCE EVAPOTRANSPIRATION

< 0.05  HYPER-ARID
0.05–0.1 ARID
0.1–0.2 ARID
0.2–0.5 SEMI-ARID
0.5–0.65 DRY-SUBHUMID
> 0.65  HUMID

Source: Aridity estimates prepared by the Development Research Group, World Bank, based on: Climatic Research Unit (2005), Global Climate Dataset, University of East Anglia, UK.

9 March 2011
Water Supply Management

- MENA countries have responded to scarcity by investing in infrastructure.
- Water supply coverage has increased remarkably.
- More than three quarters of the population in MENA countries now have access to clean water and improved sanitation, although service is often not continuous.
- MENA region leads the world in applying non-traditional water technologies such as desalination and wastewater reuse.
Improved Access to Water & Sanitation services

Access to Improved Water Supply and Sanitation by Region, 2002

Source: World Bank World Development Indicators database.
Water Demand Management and the use of Un-Conventional Water Resources

- Due to the increasing population and increasing water demands in different sectors (Domestic, Agricultural, Industrial, Commercial and Institutional); Water Demand Management (WDM) measures at different sectors were introduced and implemented.

- Need to use unconventional sources like water reuse, brackish water and desalination... which is very costly!
2- Challenges & Constraints (Summary)

• Scarce Water Resources
• Impacts of Climate Change
• Trans-boundary water issues
• Increasing Population Growth
• Increasing Water Demand in different sectors (Domestic, Agriculture, Industry, Institutional)
• Old Deteriorated Infrastructure
• Global Economic Crisis
• Lending/Funding is not always available
• Public Sector is not capable for mega funding
• Lack of using High Technology
• Low attention to Human Resources
Nonrevenue Water Ratio for Utilities in Select Countries and Major Cities

Source: Refer to appendix 3 country tables.
Operating Cost Coverage Ratio for Utilities in Select Countries and Major Cities in MENA

Source: WB database
2- Challenges & Constraints (Utility Level)

- High % of Non-Revenue Water
- Administrative Water Losses
- In proper Asset Management
- Low Cost Recovery
- Lack of Energy Efficiency
- Lack of qualified human resources (Brain-Drain)
- Centralization
- As a result; water utilities didn’t give enough attention to Best Practices

Therefore, the need rise for introducing best practices at Water and Wastewater Utilities through ACWUA
Vision Statement

ACWUA, as a regional center of excellence, will partner with water supply and wastewater utilities in Arab countries to provide best practice service delivery to their customers.

www.acwua.org
History of ACWUA

Spring 2006
ACWUA Inception
Supported by ESCWA & German Government through GTZ

Sep 2006
Consultative Meeting Held in Cairo

Dec 2006
1st Steering Committee Meeting Held in Germany

Apr 2007
Formation of Foundation Committee in Abu Dhabi

Jul 2009
Official Launching Ceremony in Amman

Jan 2009
Start of Activities from HQ in Amman

Dec 2008
MoU Signed with Government of Jordan to Host ACWUA in Amman

Nov 2008
General Assembly Meeting Held in Alexandria
Mission Statement

 Serve as a regional platform for exchange of knowledge and best practice amongst member experts and professionals.

 Develop resources, facilitate training programs and advocate for professional certification to enable member utility staff to perform their duties in a professional, reliable and cost-effective manner.

 Promote standards of performance for the governance, management, operation and maintenance of water supply and wastewater utilities.

 Support the interests of ACWUA members Including the provision of advice and consultation in water legislation, policies, and sector management and reform.

 Develop, promote and disseminate publications and other knowledge products to meet the needs of members and other regional professionals.

www.acwua.org
5 Years Business Plan
Knowledge Management Plan

ACWUA has developed knowledge management plan to achieve its goals and objectives

- Technical Working Groups
- Training Courses
- Best Practice Manuals and Operational Guides
- Specialty Best Practice Conferences
- Annual Conference and Exhibition
- Member Data Base Network and Knowledge Sharing Systems
ACWUA Technical Working Groups (TWG)

**Management of Utilities**
- Cost Recovery
  - Non-Revenue Water
  - Water for the Poor
  - Energy Efficiency
- Asset Management

**Management of Water Resources**
- Governance
- Master Planning
- Protection of Resources
- Adaptation to Climate Change
- IWRM

**Utilities Reform**
- Autonomy/Commercialization
- Public-Public Partnership
- Private-Public Partnership

**Capacity Building & Training**
- Training Strategy
- Certification

**Water & Health**
- Domestic Water Supply
- Waste Water Treatment and Re-use

**Benchmarking**

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5 Year Business Plan
Communications Plan

ACWUA has developed communication plan to achieve its goals and objectives

➢ Membership Newsletter
➢ Technical Journal
➢ Policy and Position White Papers
➢ ACWUA Website
➢ Press Releases
ACWUA's structure is stakeholder driven. Consequently, the members formulate the policies and ultimately reap the benefits.
Achievements till today

- Signing an MOU with the Jordanian Government and hosting ACWUA in HKJ
- Signing technical cooperation MOU with IWA
- Signing financial support MOU with GTZ (Now GIZ)
- Signing technical training MOU with InWent (Now merged into GIZ)
- Signing capacity building and research MOU with UNU-INWEH
- Developed 5 Years Business Plan with USAID-ABRI project
- 3rd Best Practices Conference "Non-Revenue Water", in Morocco, January 2010
- Assigning ACWUA in the Steering Committee of Water Operators

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Achievements till today

- Public Awareness Forum, May 2010, Tunis
- International Partner Forum, Water Governance in the MENA Region, June 2010, Tunis
- Conducted Utilities Needs Assessment (58 utilities responded out of 66)
- Implementing training programs within Horizon 2020 project
Needs Assessment-Strengths

In which fields are you a good performer?

- Capacity Building and Training of Trainers
- Human Resources
- Leadership Skills
- Water Quality and Testing
- Waste Water Treatment
- Sludge Treatment and Reuse
- Environmental Management
- Water Sector Reform
- Commercialization
- Private Sector Participation
- Occupational Analysis
- Climate Change
- Water Governance
- Integrated Water Resources
- Desalination
- Water Demand Management
- Operation & Maintenance
- Energy Efficiency
- Asset Management
- Leak Detection
- Management of Utilities
- Automation
- Billing
- Customer Service
- Geographic Information Systems
- Supply and Distribution
- International Expertise (Tech & Mgmt)
- Non-Revenue Water
- Pumping Stations
- Network Management
- Cost Recovery
- Tariff Restructuring
- Rehabilitation
- Key Performance Indicators
- Standards Operations Procedures
- Quality Management
- Project Management
- Contract Implementation
- Network Design
- Public Awareness
- Alternative Fuel Studies
- Construction Plants

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Needs Assessment-Weaknesses

What are the burning issues in your utility?
BP-Strategic Goal # 1

Increase Membership with two main objectives:

- Achieve 100% country participation having a utility membership from every one of the 22 countries in the ACWUA membership region by 2012.
- Annually increase the number of paid members in each category of membership such that by the end of 2014, ACWUA’s membership composition will be as follows:

<table>
<thead>
<tr>
<th>Category of Membership</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utility (public and private)</td>
<td>35</td>
<td>66</td>
<td>90</td>
<td>95</td>
<td>100</td>
</tr>
<tr>
<td>Private Entities (water sector)</td>
<td>40</td>
<td>80</td>
<td>120</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>NGO/Academic Institutions</td>
<td>5</td>
<td>15</td>
<td>25</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Individual</td>
<td>30</td>
<td>80</td>
<td>120</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>Student</td>
<td>20</td>
<td>60</td>
<td>120</td>
<td>160</td>
<td>200</td>
</tr>
<tr>
<td>International</td>
<td>15</td>
<td>20</td>
<td>22</td>
<td>22</td>
<td>25</td>
</tr>
</tbody>
</table>
Today: 91 Utilities
From: 15 Countries
ACWUA Cooperative Partners
BP-Strategic Goal # 2

Plan and conduct ACWUA Annual Conference and Exhibition, and Specialty Best Practice Conferences:

- Conducts an Annual Conference and Exhibition in the fourth quarter of each year

- Increase Specialty Best Practice Conferences such that it is conducting four Specialty Best Practice Conferences by the year 2013.

<table>
<thead>
<tr>
<th>Year</th>
<th>No. of Workshops and Seminars</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>2</td>
</tr>
<tr>
<td>2012</td>
<td>3</td>
</tr>
<tr>
<td>2013</td>
<td>4</td>
</tr>
<tr>
<td>2014</td>
<td>4</td>
</tr>
</tbody>
</table>
BP-Strategic Goal # 3

Develop and implement a self-sustaining training program that responds to member and sector needs to improve utility performance with targets:

- Twenty (20) training courses developed and implemented by end of 2014
- Forty (40) training course deliveries by the end of year 2014

<table>
<thead>
<tr>
<th>Year</th>
<th># of Courses Developed</th>
<th>Annual Frequency of Delivery</th>
<th>Number of Course Deliveries</th>
<th>Average Course Deliveries per Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>2011</td>
<td>6</td>
<td>2</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>2012</td>
<td>10</td>
<td>2</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>2013</td>
<td>16</td>
<td>2</td>
<td>32</td>
<td>8</td>
</tr>
<tr>
<td>2014</td>
<td>20</td>
<td>2</td>
<td>40</td>
<td>10</td>
</tr>
</tbody>
</table>
4 Regional Water Utility Performance (WUP) Training Programs in cooperation with InWEnt/GIZ

1. **KPIB** – Key Performance Indicators and Benchmarking for Water Utilities, Alexandria July 2010 and December 2010 within (AWW)

2. **ELC** – Effective Leading and Communication in Managing Water Utilities, Amman November 2010

3. **NCWG** – Negotiation and Cross Sectoral Coordination for Good Water Governance. October 2011

The 2\textsuperscript{nd} regional training program in cooperation with InWEnt: Effective Leading and Communication in Managing Water Utilities, Amman, Jordan November 2010
ACWUA’s mission to IFAT ENTSORGA 2010

ACWUA participated in the professional water associations booth at IFAT ENTSORGA 2010
ACWUA Forum – Wastewater Reuse in the Arab Region at IFAT ENTSORGA 2010: in cooperation with DWA and GTZ/GIZ
The Arab Water Week

Under the umbrella of the League of Arab States (LAS) and in partnership with the Arab Ministerial Water Council (AMWC) and the Jordanian Ministry of Water and Irrigation (MWI)

– The 2nd Board of Directors meeting during year 2010
– The 2nd General Assembly Meeting
– International Conference (*Cost Recovery at water and wastewater utilities: Achievements, Challenges and Solutions*) 56 Technical papers presented
– The Arab Water Trade Fair
– High Level Session (Regulation of the Water Sector in MENA Region)
– Arab Water Utilities Matchmaking workshop
– 2 days Training Program on Benchmarking for Top Management at water and wastewater utilities
AWW Inauguration Session
HRH Princess Summaya Bint Al Hassan
More than 400 people attended the AWW
UNU-INWEH supporting the Arab Water Week
ACWUA signed 8 MOU’s with cooperative partners

1. Swedish International Development Cooperation Agency (SIDA)
2. Stockholm International Water Institute (SIWI)
3. German Water Partnership (GWP)
4. International Union for the Conservation of Nature (IUCN)
5. IFAT ENTSORGA
6. Water Berlin International
7. Ghorfa
8. Engicon O&M
Regulating the Water Sector in MENA Region
High level meeting
Arab Utilities Matchmaking Workshop in cooperation with GWOPA
Solutions for Water Supply & Sanitation Challenges in the Arab Region

✓ Creating and enhancing an enabling environment for policies, regulations and institutional reforms to identify the inter-organizational relations and responsibilities.

✓ Building national and regional capacities for water and sanitation and water-demand management in the context of IWRM.

✓ Improving technology selection and investment for developing water resources.

✓ Develop Public-Private Partnership models which emphasizes the outmost contribution from each stakeholder.

✓ Implementation of Demand-Driven programs with active community participation.
Thank You!

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