Expert Group Meeting on the Water, Energy, Food Security Nexus in the Arab Region
Amman, Jordan
24-25 March 2015

OUTCOME OF THE INTER-GOVERNMENTAL CONSULTATIVE MEETING ON THE WATER AND ENERGY NEXUS IN THE ESCWA REGION

Mongi Bida – bida@un.org
Energy Section
Sustainable Development Policies Division

Outcome of the IGCM on the water and energy nexus in the Region

Outline

1. survey of the Water-Energy context in the Region (Institutional & Organizational / Technical & Statistical)
2. Preliminary mapping of the Water-Energy context in the Region
3. Prospects for Policy making on energy nexus issues in the region
4. The ESCWA DA Project on the Water Energy Nexus
1. Survey of the Water-Energy context in the Region

- A questionnaire covering the topic was sent to national institutions in the region in charge of the water and energy sectors
- Questionnaire had 2 parts:
  - Part I: Institutional and organizational aspects
  - Part II: Technical and Statistical data
- Part I: Identification of institutions in charge of the water sector, and existing local coordination with energy and electricity sector
- Part II: Water and associated energy technical and statistical data (Water production and purification; Water transmission and distribution; Sanitation; and end use)

2. Preliminary mapping of the Water-Energy context in the Region

- Survey results / Part I: Institutional and organizational aspects
  - The institutional structures established in the water and energy sectors are generally of governmental nature
  - Some countries have energy and water activities under the same Ministry
  - There is a trend of privatization of the water and electricity production activities
  - There is a lack of institutional mechanisms for dealing with the water-energy nexus
Outcome of the IGCM on the water and energy nexus in the Region

2. Preliminary mapping of the Water-Energy context in the Region

Survey results / Part II: Technical and Statistical data

Fresh water production & treatment

- Associated energy consumption data not available
- Future trends would rely on sea water desalination,
- need for a systematic monitoring of energy consumption

Outcome of the IGCM on the water and energy nexus in the Region

2. Preliminary mapping of the Water-Energy context in the Region

Survey results / Part II: Technical and Statistical data

water transmission and distribution

- estimated ratios of water leaks in transmission and distribution higher than best practice
- energy consumption in water transmission and distribution not closely monitored (Estimates range: 0.5 to 2 kWh per m³)
- need for a systematic monitoring of water leaks & energy consumption
2. Preliminary mapping of the Water-Energy context in the Region

Survey results / Part II: Technical and Statistical data

- Waste water Collection and treatment
  - estimated ratios of energy consumption higher than best practice
  - There is a need for technology assessment to select most appropriate for each country's climatic conditions
  - Energy valorization of wastewater treatment almost inexistent
  - Need for a systematic monitoring of water treatment volumes & associated energy consumption

- Some Other results
  - Information on end use is very sketchy
  - Use of smart grids and variable speed pumping in the water systems is marginal
  - Use of RE in the water systems is marginal
3. Prospects for Policy making on energy nexus issues in the region

- ESCWA hosted an Inter-Governmental Consultative Meeting (IGCM) on the water and energy nexus in the region [27-28 June 2012]
  - ESCWA Energy Committee & ESCWA Water Resources Committee representatives attended the meeting
  - Meeting aimed to:
    - initiate a reflection on issues related to the interrelation between water and energy sectors & to identify priorities for further research in the region
    - examine the possible mechanisms and institutional arrangements to organize coordination and harmonization of water and energy sector policies
  - Preliminary mapping was used to initiate the discussions

Some Initial nexus issues raised that were considered important in the national and regional context:

- Need for an approach that links water sustainability with energy sustainability
- Need to improve EE in water and energy systems
- Need to consider the use of RE in water systems
- Need for systematic monitoring of water and energy production and consumption
- Need for public awareness raising regarding resources & their management
- Need to integrate climate change considerations
Outcome of the IGCM on the water and energy nexus in the Region

3. Prospects for Policy making on energy nexus issues in the region

Approach for identifying priority issues:

Setting Priority Issues
- Increasing knowledge & awareness raising
- Increasing policy coherence
- Water-energy security
- Increasing efficiency
- Informing technology choices
- Promoting renewable energy
- Climate change and natural disasters

Criteria Definition & Evaluation
- Preference model

Priority ranking

Performance Matrix

Participants in the IGCM were asked to assign ranks to the seven priorities for future activities in the water-energy nexus field, which were agreed upon during the meeting (priority ranking to be discussed with stakeholders in their respective countries to reflect the official national position).
3. Prospects for Policy making on energy nexus issues in the region

- **Approach for identifying priority issues:**

<table>
<thead>
<tr>
<th>Priority Issues</th>
<th>Score</th>
<th>Priority rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increasing knowledge &amp; awareness raising</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>Improving efficiency</td>
<td>40</td>
<td>1</td>
</tr>
<tr>
<td>Increasing policy coherence</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Examining water-energy security nexus</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Increasing knowledge of technological choices</td>
<td>38</td>
<td>2</td>
</tr>
<tr>
<td>Promoting renewable energy</td>
<td>37</td>
<td>3</td>
</tr>
<tr>
<td>Climate change and natural disasters</td>
<td>34</td>
<td>4</td>
</tr>
</tbody>
</table>

Outcome of the IGCM on the water and energy nexus in the Region

4. The ESCWA Project on Capacity Development of MC to address the Water-Energy Nexus

- Based on IGCM outcomes, ESCWA secured funding from the UN DA to implement a project on “Developing the capacity of ESCWA MC to address the water and energy nexus for achieving sustainable development goals”

- Project is implemented through 2 sets of complementary capacity-building interventions
  - The first set of interventions will target high-level officials in ministries in charge of water and energy strategies, policies and plans (Resource management)
  - The second set of intervention will target public service providers in the water and energy sectors (technical capacity building)
4. The ESCWA Project on Capacity Development of MC to address the Water-Energy Nexus

- The first set of interventions targeting high-level officials
  - Preparation of a regional policy toolkit: 7 modules addressing the 7 priorities identified in the IGCM
  - Organization of 2 regional training workshops on policy
  - 3 pilot projects with customized technical support and advisory

4. The ESCWA Project on Capacity Development of MC to address the Water-Energy Nexus

- The second set of interventions targeting service providers
  - Preparation of 3 technical toolkits: resource efficiency, technology transfer, renewable energy
  - Organization of 3 regional technical training workshops
THANK YOU FOR YOUR ATTENTION
bida@un.org