2015 World Water Week

MENA Water World Café 2015

Working Group 1: Water Governance

Background Paper

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watersum

Sustainable Use of Transboundary Water Resources and Water Security Management Project

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1. Introduction

The MENA region stretching eastward from Morocco across northern Africa to the Persian Gulf, and from Turkey in the north to Yemen and Oman is facing the overarching water-related problem of water quantity; water is a scarce resource. However, also water quality is emerging as an important issue and is of growing concern to the public. Besides posing threats of its own, climate change will act as a multiplier of already existing stresses and further affect water availability and quality.

Other characteristic features in the region are that the water resources often are shared between two or more nations and there is a heavy reliance on groundwater resources. Water policy and water availability are considered a central determinant of the future well-being of the region. Cooperation on regional/transboundary water resources is politically sensitive and closely connected to on-going conflicts in the region. On a technical level, various cooperation initiatives that can stimulate political rapprochement are on-going. The capacity of countries to manage region's water resources more efficiently, by using the IWRM as a tool for climate adaptation measures in a regional/transboundary context, is a decisive factor for future development. Greater regional cooperation and dialogue on water issues can also influence national water management and vice versa and help to bring peaceful development to the region.

Despite conditions of water scarcity and dramatic shrinkage of natural fresh water resources per capita in recent decades, MENA countries have made progress in providing improved water and sanitation to their populations. The numerous investment projects have improved significantly the access to water and sanitation in urban areas. It is at nearly universal levels in Jordan, Lebanon, Morocco and Tunisia and high in Egypt, Algeria, Libya and Syria. (Milutinovic, 2015). In the same time the recent political instabilities and war conflicts in some countries result in serious water management challenges, such as collapse of water supply operations in conflict areas and large refugee torrents to neighbouring countries.

Water governance is defined by the political, social, economic and administrative systems that are in place, and which directly or indirectly affect the use, development and management of water resources and the delivery of water service at different levels of society. Importantly, the water sector is a part of broader social, political and economic developments and is thus also affected by outside decisions. (UNDP, SIWI)

The Water Governance issues in the MENA region are various, but mostly common for its countries. The key issues can be grouped as: Insufficient institutional skills in applying the IWRM approach and adaptation to climate change; Insufficient understanding how impacts of policy instruments in water management can affect the economy and growth; Limited application of the holistic approach in water policies, multi-sectorial involvement and coordination of roles and responsibilities; Hesitant

transboundary cooperation in promoting sustainable and equitable development of a shared watercourse; Unsatisfactory cooperation and joint research actions and knowledge share.

To encourage better management and conservation, many countries shared responsibilities for water management between several ministries, while engaging water stakeholders at various levels of governance. Consequently, improving relationships between competent authorities and stakeholders at all levels of governments, strengthening democracy and combating poverty remain issues of high priority in these regions.

To overcome these challenges, many countries restructured institutions involved in water and environmental governance. In recent years, significant progress has been made in the region in terms of improved regional/transboundary cooperation as well as convergence towards the requirements of the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) and the Convention on the Law of the Non-Navigational Uses of International Watercourses (New York Watercourses Convention). Due to the amendment of the Water Convention, it is expected that countries outside the UNECE Region will be able to join to the Convention by the end of 2015. It is of strategic importance to define initiatives to alert MENA countries' awareness of the opportunity deriving from the Convention and in the identification of technical assistance opportunities for their accession to the Convention and its implementation.

2. The changing stance towards Sustainable Development Goal on Water and Sanitation

In December 2003, the United Nations General Assembly adopted Resolution A/RES/58/217, proclaiming the years 2005-2015 as the International Decade for Action 'Water for Life' and calling on the International Community to strengthen efforts to increase access to water and sanitation for all and to fulfil commitments made on all water and water-related issues by 2015.

Since the adoption of the resolution, the UN has progressively increased its engagement in water-related issues leading, among others, to the recognition of access to safe and clean drinking water and sanitation as a human right in 2010 (A/RES/64/292), to the recognition and inclusion of a specific mention in the outcome document of the United Nations Conference on Sustainable Development – Rio+20, and to the proclamation of 2013 as the International Year of Water Cooperation.

The Millennium Development Goals (MDGs), which were established in 2010 and expire in 2015, are a set of eight global development goals for improving livelihoods and wellbeing, revolving around topics such as improvements in access to water and sanitation, food security, education, gender equality, health, and environmental sustainability. Since their inception in 2000, the MDGs have played a central role in shaping official development processes, policy, and donor decision-making.

Particularly, MDG Seven, which was developed for ensuring environmental sustainability, encompasses Target 7C that aims to Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation.

According to the official Millennium Development Goals Report published in 2014, the target of halving the proportion of people without access to an improved drinking water source has been achieved. Notwithstanding the importance of the achievement of the overall target, significant regional disparities and stark variations between urban and rural areas, as well as the outstanding number of people still rely on unsafe water sources, are a tell-tale of the need to ensure that those additional actions be directed towards those hitherto untouched by the ameliorations.

However, the target aiming at improving basic sanitation, such as access to latrines and hygienic waste collection, is off track and requires sounder commitment in order to be recalibrated and hopefully met in the upcoming years.

With the Post-2015 Development Agenda setting the scene for the UN member states to reshape their agendas and political policies over the next 15 years, and with the MDGs expiring at the end of 2015, a new, universal set of goals, targets and indicators will represent the new yardstick for gauging global trends and humanity's advancement: the Sustainable Development Goals (SDGs).

The Open Working Group (OWG) of the UN General Assembly tasked with preparing a proposal on the SDGs mandated presented its results to the Assembly in June 2014. The "zero draft" contains 17 SDGs to be attained by 2030, as well as associated targets, and will be ultimately discussed and voted during the UN Summit for the Adoption of the Post-2015 Development Agenda scheduled for September 2015.

In particular, Goal Six, Ensure availability and sustainable management of water and sanitation for all, displays a dramatic change of course compared to the narrower "access to water and basic sanitation" outlined in MDG Goal Seven. Now, water issues are encompassed into a stand-alone goal, with its own subset of eight targets, carrying a broader focus on other crucial water issues such as water use efficiency, water quality and wastewater management, water-related hazards and risks, and the IWRM based approach to water resources management.

In fact, the proposed SDG underscores the crucial role of water in all dimensions of sustainable development and is linked to various key global problems, and all human and economic activities. Such stand-alone goal is essential in order to have a holistic approach in tackling global water problems and, in light of the interlinkages with other global problems, to mobilize concrete commitments and concerted action on all water-related issues through a coherent framework to meet all other development goals.

The MENA region is at the forefront of the multiple, mostly noxious effects and impacts deriving from water-related issues. SDG Six encompasses several provisions that, if ultimately approved, may assist in boosting the region's development and resilience.

3. Progress towards water sector integration

The latest report outlining the contents and conclusions of the 3rd Arab Water Forum shows interesting findings that may be a touchstone for shaping the future water-related policies across the region.

IWRM should promote coordination, consolidation and integration. Integration, in particular, must involve all sectors relying on water and ensure stronger stakeholder engagement and communication as well as enhanced water use efficiency methods in irrigation and financing policies at national scale.

The region must foster south-south cooperation to realize food security, develop knowledge platforms for IWRM and climate change solutions and build capacities through exchange of experiences and information. The region should adopt fast track measures to strengthen or establish regional and international organizations that can help in finding solutions to the challenges of food security under water scarcity conditions. The Arab region should make use of its comparative advantages represented in its natural resources, human resources, financial resources, knowledge, information and technology to achieve water and food security.

For transboundary watersheds and aquifers which constitute two thirds of the water resources in the region, cooperation must go beyond national boundaries through basin approach in management of shared water. Strong cooperation can be assured by basin level governing institutions, work programs, joint monitoring and wide stakeholders participation based on legal agreements and institutional arrangements.

More broadly, IWRM can finally play an important role in fostering scientific diplomacy, sharing lessons learned, and building domestic and cross-border institutional infrastructure that might help anchor regional stability—as far as environmental security is concerned—in the coming decades.

4. Legal and institutional review with respect to the IWRM

The administrative structures and legislation regarding water governance vary from country to country and there is no common water governance model for the region.

In **Morocco** the Secretariat of Water and the Environment is the major institution responsible for water management and among its responsibilities is: water resource assessment, monitoring, transfer, management, security, capacity building, and research and development. The National Meteorological Directorate which is responsible for the elaboration and implementation of government policy for water resources planning, mobilization, management and preservation and management and maintenance of large hydraulic infrastructures, other departments are in charge of providing information and technical assistance in the area of meteorology for the sectors of hydraulics, agriculture, aeronautics, and maritime activities. The Hydrological Basin Agencies were created by the Water Law (1995), for each of the nine main river catchments in the country, and these are public organizations in charge of water resources management in each basin, these task are the proper implementation of the water management plans, enforce of water rights, financial and technological assistance to private operators, water monitoring, studies water resources protection and flood control among other responsibilities. In terms of water policy Morocco is quite advanced, deserving the name of "champion of water policy in MENA region" due to the elements developed including water laws, decentralization of water management, public-private partnerships in water development, and demand-side policies .

In **Tunisia** most of the tasks related to water management fall under the Ministry of Agriculture and Hydraulic Resources, and within this, there are various Departments (more than 10 General Directorates and other organizations) dealing with water exploitation for different purposes, conservation, management of dams, research and development. In 2003, the Ministry of Agriculture published the Water Master Plan for the water sector. Two main strategic options were identified and implemented: the 10 years strategy of water resources mobilization (2001–2011) initiated for the 1st time in 1990, and the long-term strategy (2030) . A practical drought guidance document was elaborated in 1999, with the aim to inform the different user groups and institutions on appropriate measures for impact alleviation and mitigation. In Tunisia, the Water Code (1975) sets the provisions on water quality, reinforced by law No. 95-73 of 24 July 1995 on the public maritime domain, law No. 95-70 of 17 July 1995 on water and soil conservation.

In **Jordan** three governmental agencies are involved in the management of the water sector: the Ministry of Water and Irrigation (MoWI) with the Water Authority of Jordan (WAJ) and the Jordan Valley Authority (JVA) under its umbrella. The two authorities are headed by Secretary Generals who report to the Minister of Water and Irrigation. In addition, the Ministry of Environment (MoE) was established in 2003, having a technical division on water quality. An overall vision and strategy for water and environment structures for regional cooperation is largely in place. With regard to water, the Water Strategy, formally adopted in May 1997, adopts an integrated approach to water management and places a high priority on the resource value of reclaimed water and a new strategy "Water for Life" covers the period 2008-2022. A National Water Master Plan was adopted in 2004 which analyses future water use demand and assesses consolidated supply measures against future demand needs. The core law for water resources management, protection and conservation is the

1988 Water Authority Law No.18 (with amendments), which also presents the plan for best wastewater management practices.

5. Assessment of existing regional structures for cooperation on water issues

There is a number of initiatives and organizations, established to promote the regional cooperation, transfer of know-how and ensuring political support for the improvement of water governance.

The Arab Water Council, established in 2004 as a non-profit, regional organization promotes the water agenda in the MENA Region.

The Global Water Partnership Mediterranean (GWP-Med), established in 2002, is the Mediterranean partnership of the Global Water Partnership (GWP). Aiming for a water-secure Mediterranean, GWP-Med promotes action, demo application and knowledge exchange on Integrated Water Resources Management (IWRM) and the sustainable use of water resources in the region.

The Union for the Mediterranean, a multilateral partnership aiming at increasing the potential for regional integration and cohesion among Euro-Mediterranean countries, promotes a specific Water agenda, designed around the four pillars of water governance, water and climate change adaptation, water demand management and water financing.

The Arab Ministerial Council for Water, established in 2008 within the League of Arab States, adopted the Strategy for Water Security in the Arab Region in 2010. The Strategy, focusing on the run-up to 2030, identified the regional priority actions for ensuring water security across the region centred on the principles of IWRM.

The Organization of Islamic Cooperation (OIC) embraced the OIC Water Vision in 2012. This comprehensive document provides a framework for promoting cooperation for a water secure future through increased interaction, exchange of best practices, knowledge sharing, capacity building and development of expertise in various water related disciplines. The OIC also supports research and capacity- building programs centred on regional water issues through its subsidiary organ SESRIC (Statistical, Economic and Social Research and Training Centre for Islamic Countries).

The Regional Office for West Asia of the United Nations Environment Programme (UNEP/ROWA) as well as the United Nations Economic and Social Commission for Western Asia (UN-ESCWA) contribute to raising awareness and enhancing response capacities regionally through studies, capacity-building activities and trainings focusing on climate change and shared, integrated water resources management.

The Organisation for Economic Co-operation and Development (OECD) is also actively contributing to water-related matters across the MENA region through its MENA-OECD Governance Programme and its Programme on Water Governance.

6. Stakeholders involvement in water management process

Participatory processes support a quality, more informed decision making process because decisions would reflect the views and responses of stakeholder's interests. Participation of stakeholders can assist in legitimization of the decisions and help solving water user's conflicts and develop trust among them. Participatory approaches are also helpful to inform policy makers with relevant feedbacks from stakeholders will be impacted by the decisions (Kessler, 2004).

Stakeholder's interests may be environmental, economic, social, cultural, recreational, religious, and geographical or others, legally or otherwise defined. In the broader sense, stakeholders may be additionally defined as those having some influence on the outcome of the decision-making or some expertise, knowledge, experience, information or activities which may be useful for the decision-making process.

The main categories of stakeholders are: 1. Public authorities and agencies; 2. Water use associations and cooperatives 3. Civil Society; 4. Private Sector; 5. Scientific and Research Community; 6. International organizations, donors and networks.

The leading role of **National water authorities** (ministries and state agencies) in development and enforcement of water policies is common to all MENA countries. Water supply and sanitation services are predominantly state owned and operated. The private sector involvement is still limited but its role is planned to increase in water sector strategies in several countries.

Interesting group of stakeholders are the **Water use associations** (or irrigation cooperatives). This form of cooperative bodies, responsible for the maintenance if the water supply and irrigation infrastructure in rural areas is common in many Arab countries and is based on traditional practices.

The role of the **Civil society organizations** (CSOs, NGOs) environmental domain and has increased over the last years in result of democratic transformations. In most cases however, the CSOs do not have adequate technical capacity and knowledge to be equally present in formulation of national water policies.

Private Sector is expected to play increased role in water management with the privatization of water services, introduction of new public-private business models and increased valorisation of water uses.

The **Scientific and Research organizations** in the region are particularly important for both local R&D and adaptation of best available technologies to the regional and country-specific conditions.

International organizations, donors and networks provide the environment for regional dialogue, capacity building and knowledge transfer.

7. Summary of Water Management Issues

The Water Management is a complex topic, which includes the planning, developing, distributing and managing of water uses, policy and regulations development, protection of the quality and quantity of water resources etc. Based on the review of strategic and planning documents for the water sector in various MENA countries, the main Water Management Issues may be grouped in the following categories:

7.1. Water Demand Management

Given the general scarcity of water in the region, water demand management and water conservation play crucial role in achieving sustainable use of freshwater resources. Demand management aims at efficient utilization and minimum waste of water, and promotion of water conservation at water user level in order to bridge the gap between supply and demand and advance economic growth and social development.

Demand management includes appropriate water pricing, reduction of “non-revenue” water, water supply augmentation using rainwater harvesting, greywater and on-site treated wastewater, education and public awareness. Application of proper water valorisation and water economy measures requires increased administrative capacity and long process of public awareness in order to build social acceptance for these measures.

Challenges on water demand are enormous especially in regions with unexpected population growth due to conflicts and political instability.

7.2. Mobilization of water resources and water supply

Growing population and the economic development of the countries in MENA region result in increased demand and need to mobilize to the maximum natural fresh waters. Many strategies and measures have been implemented to alleviate and overcome the water shortage including construction of large and small dams, wells, canals and other hydraulic structures. In some countries (as Tunisia) the mobilization of available water resources exceeds 90%. Groundwater is being exploited exceeding their recharge rate, which put in a serious risk the water supply in future. Long-distance

water conveyance and use of non-conventional resources are alternatives for increased water supply, but at much higher financial and environmental costs.

7.3. Preservation and protection of water resources

Although the water scarcity is the main problem in the region, the water quality also becomes an important issue of concern over the last years. Industrial, urban and agriculture pollution, combined with decline of natural ecosystems and climate change impacts, result in global trend of deterioration of water quality. Quantity and quality issues are also much interconnected. For example, the abstraction of waters from surface and ground water bodies increases the concentration of pollutants and salinity, and the damages to natural water ecosystems decrease the self-purification capacity.

7.4. Natural hazards associated with floods and droughts

Natural disasters, accelerated by climate change, are difficult to predict and cause increasing social, economic and environmental impacts. In spite of the traditional knowledge of people inhabiting arid regions, the unpredicted long periods of drought may cause devastating water shortage for population, agriculture and industry. Although floods are not common for the region, the recent cases of torrent floods in Morocco, Tunisia and local cases in Jordan show that higher attention and more integrated approach is needed towards this natural phenomena.

Prevention and response measures may vary from monitoring and forecast systems, structural measures, development of emergency plans and financial mechanisms such as insurance and natural disasters funds.

7.5. Regulatory and institutional reforms

Institutional and regulatory frameworks are subject of revision and improvement in a number of countries, which is stipulated in their recent water strategies. The present structure of the water sector in most of MENA counties is characterized by predominantly administrative approach with distribution of responsibilities between several ministries or agencies and sometimes difficult coordination. The need of new business models with private sector participation is clearly recognized.

7.6. Modernization of information system and monitoring networks

Significant steps in development of national water information systems have been done in many countries and the rapid introduction of contemporary IT solutions is notable in last decade. However the access to information and exchange and consolidation of data between responsible institutions in one country and between neighbouring countries is often missing.

Existing monitoring systems are focused on water quantity and basic quality parameters but there is not enough capacity for introduction of comprehensive monitoring of the ecological status of waters.

7.7. Capacity building

The state institutions, organizations and individuals have various different roles in water management, which require specific technical and administrative capacities. Insufficient institutional skills in applying the IWRM approach and adaptation to climate change is identified in various studies and strategic documents.

There is a number of isolated capacity building projects and initiatives but the need of consolidated knowledge management at regional level has not been met so far. Transfer of knowledge and experiences between countries is of great importance due to applicability of best practices in similar conditions.

7.8. Research and development

Universities and research institutes play important role in assessment of the status of water resources, technical and non-technical innovations and solutions. Water research and transfer of technologies between different regions are significantly accelerated with the support of international cooperation initiatives. However the encouragement and enhancement of indigenous water research is equally important because of the specific local and regional conditions, where the “imported” solutions are ineffective or need adaptation.

7.9. Regional cooperation

Most of the river basins and ground water bodies are shared between two or more countries, which result in dependence of the downstream countries from upstream ones, for surface waters, and mutual dependence in case of ground water uses. In spite of the existing regional initiatives, the cooperation of often formal and needs further improvement in terms of actual communication and dialogue practices.

8. Knowledge development and capacity building

The Water Management practices in MENA countries have long history of development in a context of extremely scarce water resources. The traditional knowledge has been lately enriched with various international experience, gained in the course of various projects.

A number of recent studies, including the interviews with national stakeholders in Jordan, Tunisia, Egypt and Morocco, performed in the framework of Water SUM Project, have identified essential need of capacity building concerning important issues, related to water management.

Water Demand Management

Although MENA region has done significant progress in the direction of protection and efficient use of fresh water and irrigation water over the last decades, there are still uncertainties and gaps in analysing the social and economic driving forces of the water demand. **Capacity building in performing sound social and economic analyses** was identified as a need.

Management of water demand at local level (mainly irrigation) requires **improvement the capacity of Water Users Associations.** Decentralization and privatization, and support to retailing of water by user associations is featured by numerous national strategies and plans as Water Strategy of Jordan "Water for Life" 2008-2022, Tunisian Long-term Water Strategy and the National Water Strategy 2009–2030 of Morocco. In all of these countries the water strategies identify gaps in human and technical capacities of water use associations, which results in their difficult communication with state water authorities.

Mobilization of water resources

For the past decades, the water sector policies and investments in MENA region have been focused on mobilizing water resources. Countries have reached very high level of mobilization of existing natural fresh waters, in some cases exceeding the carrying capacity of the surface water bodies and utilized non-renewable ground waters. Therefore the **research, innovations and technology transfer, related to non-conventional water resources** is now in focus.

Knowledge on **atmospheric precipitation & water harvesting** is necessary at all levels in order to improve the efficiency of these methods particularly in rural areas. This may include exchange of best practices and trainings on methods and technologies for improving the efficiency of water harvesting.

Water Resources Protection

There are numerous studies, providing hydrological information and other data, related to different aspects of WM in MENA countries. However data is often scattered, exchange protocols and mechanisms are missing at national and regional levels. The need **of improved data management approaches** are outlined by stakeholders in Jordan and Tunisia, including software development, increased quantity and quality of data, needed for proper analyses and assessment for future decisions to be made by responsible institutions.

The **monitoring of water quality** is developed uneven in MENA countries and normally focuses on basic physical and chemical parameters with universal use. Introduction of biological monitoring and integrated water quality classification will require additional training as currently the experience in the countries is limited.

Socio-political aspects of IWRM

The moment is considered to be appropriate to further facilitate **involvement of stakeholders in the decision making process**, as well as public participation with the purpose of raising awareness about everybody's importance and contribution towards sustainable water resources management. The awareness raising should expand the knowledge to household levels to all regions of Jordan.
Civil societies and local governments should be highlighted and concerned about the right sources and uses of water, they could support the water management with a huge and positive effect in the water cycle, e.g. pollution prevention. However the effective participation of stakeholders in decision-making process requires **improvement of technical skills and competencies of CSOs and local authorities**.

Climate change impacts on Water Resources

The need for **improved Climate and hydrologic data management** has been identified, including extremes: droughts and flash flood events. This includes various phases of data management cycle and various approaches as processing and analyses, interpretation, software, modelling, monitoring, quality assurance.

The use of **non-conventional water resources** is considered as important direction to increase water supplies and as CC (Climate Change) adaptation measure. However further knowledge and analysis are necessary on the environmental impacts socio-economic costs of the non-conventional waters (e.g. desalination).