

Summary Report
On
MENA Water World Cafe 2015
Water and Climate Change (Group 2)

Prepared
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Brief problem description:

In Middle East and North Africa (MENA) region as well as Arab region, climate change is expected to affect the quantity and quality of the region's water resources. International studies, including reviews by the Intergovernmental Panel on Climate Change (IPCC), have reported that regions with already scarce water resources, such as the MENA, will suffer even more from water scarcity. Previous regional and local studies of past weather records already show an increase in mean temperatures, and in the magnitude and frequency of extreme temperatures.

Increasing temperatures, coupled with changing precipitation patterns, are expected to decrease surface water availability, and, acting on top of other stresses, increase water scarcity in the Arab region. Many countries in the Arab region are ranked among the poorest countries in the world in water availability, with a current per capita availability of 75 l/day - approximately 1/10th that of, for example, any Western European country. In addition, the region population continues to grow and there are greater than ever demands on its water supply. Current water usage exceeds available water rights and groundwater wells are being exploited at unsustainable rates.

Adverse impacts of climate change will negatively affect progress toward development in a number of key areas including agriculture and food security, water resources, public health, climate-related disaster risk management and natural resources management. The Government of the region should take these impacts into account in all its national planning efforts. In addition, it is anticipated that climate change will constrain the ability of developing countries to reach their poverty reduction and sustainable development objectives under the United Nations' Millennium Development Goals

(MDGs). The achievement of the MDG targets will depend on effective planning for managing climate risks.

During the World Water Week 25th and within “MENA Water World Cafe 2015” Water and Climate Change issues were discussed (Group 2). A number of issues were discussed within the constraints exist with regards to ensuring resiliency of the MDGs in the context of emerging climate change pressures. Among these issues are:

- How climate change will affect the MENA region?
- How to increase knowledge and understanding about risks from water-related climate change impacts?
- What are the adaptation measures to reduce the risk impact of climate change /drought and floods)?
- Needs for implementation of monitoring and early warning systems for risks from water-related extreme events
- Needs for an improved preparedness approach to manage water-related extreme events

Objective:

Discuss water and climate change in MENA region

Methodology:

The discussion of climate change and water in the MENA region were carried out in an interactive and open discussion among the 49 participants (see Annex I) and according to the agenda shown in Annex II. The 49 participants were divided into three groups. The first group has 25 minutes to discuss the above issues of climate change and water. The second group has 20 minutes for discussion, after briefing and summarizing to them the points raised by the first group. The third group has only 15 minutes to discuss the climate change and water issues based on the points raised by the previous two groups. Finally, a summary and important outcomes and key messages from the whole discussion were presented to the entire group.

Expected outcomes and discussion:

1. Climate change is among the global environmental issues that has received most attention across nearly all domains (political, media, scientific, and civil society). Although the MENA region as well as Arab region does not contribute more than 5% to the causes of global climate change, its effects on the region will be very severe. In fact, the region is particularly vulnerable given already scarce water resources, high levels of aridity and the long coastal stretch threatened by the rising sea levels. Natural and physical systems in the Arab world are already facing heavy pressures, and these will only be intensified as temperatures in the region get higher and/or precipitation gets lower. Impacts of climate change and variability on water resource are evident in MENA region and increasing floods and droughts pose a challenge to water managers in all beneficiary countries.
2. The projected impacts of climate change (such as more extreme weather events, decreased precipitation and rising sea levels) will exacerbate the aridity and water scarcity problems in the region. There are severe environmental, economic, political and security implications. Climate change is expected to primarily affect precipitation, temperature and potential evapotranspiration, and, thus, is likely to effect the occurrence and severity of droughts and flash floods. An important question for the assessment of future impacts (i.e. socio-economic and environmental) is how changes in climate will affect the water budget components in

MENA Region. A number of constraints exist with regards to ensuring resiliency of the MDGs in the context of emerging climate change pressures. Within this context MENA Region needs to face various important issues, such as: weak capacities of national agencies, local authorities and vulnerable communities to develop coping mechanisms and strategies on adaptation and risk management; lack of tools and systems to enable appropriate planning and implementation of climate change adaptation; and a general lack of information on technological adaptation and sustainable development.

3. ***How to increase knowledge and understanding about risks from water-related climate change impacts?*** The discussion under this question is structured around two broad themes: impacts and vulnerability; and adaptation planning, measures and actions. Under these themes, the following points were raised and discussed:

- There is a limitation on data and observations related to climate factors as well as water quantity and quality. Data availability and access to data and information related to climatic variables and hydrological data are difficult. Creation of data sharing networks is a possible solution. Lack of baseline data and historical data on water resources (e.g. water quality, river flow rates, precipitation data) limits the modelling of long-term climate risk and related factors.
- Information on socio-economic of vulnerable groups and regions is lacking and limited. This information is important for conducting the vulnerability studies of climate change on human and human health.
- The participants indicated the needs for mechanism and tools to facilitate knowledge sharing and learning, and to catalyse actions in relation to adaptation to climate change by engaging a wide range of stakeholders. Knowledge sharing may lead to new projects. Establishment of a platform for knowledge sharing and networking between the scientific, business, policy and civil society communities is needed.
- Improve their understanding and assessment of impacts, vulnerability and adaptation to climate change. Actions are needed to improve the ability to understand impacts, vulnerability and adaptation to climate change in the water sector
- Developments of vulnerability studies, and disseminate these studies to all people and regions. Engagement of local communities is an essential step for success of any studies and piloting for climate change adaptation.
- Practical adaptation actions and measures on the ground should be implemented. This can be done by piloting some adaptation actions and transfer the good ones to other parts of the country as well as to the MENA region. Lesson learned from these case studies should be disseminated and shared among stakeholders and regions within the country.
- Enhance of monitoring and improved water strategies and policies are essential steps to cope with climate change impacts.
- Establishing trust among stakeholders themselves and between stakeholders and government is an important issue.
- Make informed decisions on practical adaptation actions and measures to respond to climate change on a sound scientific, technical and socio-economic basis, taking into account current and future climate change and variability.
- Disseminate actions undertaken by the national programs and other organizations that are related to climate change

- Implementation of pilot projects on adaptation to climate change in transboundary basins is needed and a platform for exchanging experience in this regard should be established. Also, there is a need to establish local and regional committees to develop plans and programs for climate change adaptation
- The lack of coordination between different sectors within countries is obvious in the MENA region. Coordination needs to be improved.
- There is a need to focus on actions at local/micro level as related to climate change adaptation. Success stories on climate change adaptation can begin from local and micro scale. Best adaptation tools and practices should be documented and disseminated to support scaling-up

4. ***Pro and contra for adoption of integrated flood / drought risk management, including an appropriate mix of structural and non-structural approaches?***

- Rainwater harvesting / Collection of rainwater at household level
- Using a variety of weeds/vegetation
- Flood management
- Groundwater recharge management
- Involvement of private sector is key
- Water demand management
- Inclusion of water scarcity and drought issues in the different development strategies
- Use of advanced technologies
- Working with the existing community behaviours and build on it/improve it

5. ***Needs for implementation of monitoring and early warning systems for risks from water-related extreme events?***

All the participants indicated and agree on the needs for implementation of monitoring and early warning systems for water risks related extreme events (flood and droughts). Also, they indicated the need to improve risk communication and risk perception to support better decision-making in the watershed management.

- Remote sensing and GIS are important for conducting studies in order to identify vulnerable locations
- Better coordination between institutions that provide different types of drought and flood early warnings is needed;
- Efforts are needed for strengthening, testing and evaluating EWS across spatial and temporal scales. Needs for an improved preparedness approach to manage water-related extreme events?
- Regional cooperation is essential step to manage water-related extreme events
- Comprehensive assessments of local climate risk are lacking in MENA region
- The engagement of national institutions in risk assessment actions can help in developing their targeted capacity building actions

- development of pilot projects and support in the implementation of national strategies through pilot-scale demonstrations, and the involvement and support from the help desk support-based partners;
- Risk prevention and preparedness is an important starting step to reduce climate change disasters. So piloting and implanting various climate adaptation projects in all levels from micro to macro scale can help in reducing the potential climate disaster. Prevention and preparedness is low cost option plans rather than emergency actions.
- Scientific and technical knowledge combined with local knowledge can improve disaster risk reduction and climate change adaptation.
- Subsidize traditional water collection methods and water distribution
- Incentives schemes should be created to promote local and small scale project for climate change adaptation such as rainwater harvesting on micro and macro scales.
- Implementation of pilots locally and transfer of successful pilots
- Increase knowledge-sharing with respect to communities at risk to climate change as related to floods and droughts is needed

Key messages - Resilience to water-related extreme events:

1. Suggested capacity building programs at national and regional level, encompassing participation, needs and rights of vulnerable individuals and groups.
 - There is weak capacity in climate modelling and forecasting climate change impacts, climate change scenarios development and downscaling. Capacity programs are needed to improve these weaknesses.
 - Building capacity for the management of water resources, improvement of institutional arrangements, formation of partnerships and stakeholder engagement in the management of water resources
 - Increase awareness on impacts of climate change at all levels should be continued and improved
 - Awareness raising on preparedness approaches to manage water related extreme events
 - Capacity building and the creation of a network on integrated flood and drought management; Lack of capacity among national agencies and lack of continuity, or instability, within the political system could pose a serious challenge in engaging national stakeholders and the integration of these lessons into national adaptation plans and strategies
 - Capacity building on climate change risk management
 - Capacity building on no-regret adaptation measures
2. Droughts and floods occur everywhere, but where water is managed properly, their impacts are greatly reduced and only catastrophic in rare and extreme cases.
3. The long-term monitoring and reporting systems are be an integral part of any risk assessment and of extreme events and should be used to set up plans and strategies for integrated disaster risk management.
4. Investment in preparedness is highly cost-effective.

Conclusions:

Water shortage is already a problem in many countries in the MENA region and it will be increased with climate change. Mean annual maximum temperature tends to increase slightly, but the mean annual minimum temperature tends to show higher increase. The projected impacts of climate change (such as more extreme weather events, decreased precipitation and rising sea levels) will exacerbate this problem.

A number of constraints exist with regards to ensuring resiliency of the MDGs in the context of emerging climate change pressures. Within this context MENA Region needs to face various important issues, such as: weak capacities of national agencies, local authorities and vulnerable communities to develop coping mechanisms and strategies on adaptation and risk management; lack of tools and systems to enable appropriate planning and implementation of climate change adaptation; and a general lack of information on technological adaptation and sustainable development.

The participants of the roundtable discussion raised and agreed on the following issues:

- ✓ Promote understanding and assessment of climate change impacts, vulnerabilities and adaptation planning and practices
- ✓ Methodologies and procedures are needed to facilitate communication, dialogue and cooperation among different stakeholders,
- ✓ Enhancement of the adaptive capacity of the MENA region through technical and institutional capacity building; and
- ✓ Cooperation among various stakeholders including ministries, governorates, universities/institutes, and local communities within the country is essential to develop and enhance the adaptive capacity and measures.
- ✓ Increase knowledge and understanding about risks from water-related climate change impacts is highly needed for the region
- ✓ Adoption of integrated flood / drought risk management, including an appropriate mix of structural and non-structural approaches is essential for region to reduce the impact of climate change
- ✓ There is a Need for implementation of monitoring and early warning systems for risks from water-related extreme events
- ✓ There is a Need for an improved preparedness approach to manage water-related extreme events