

WaSec – Water Priorities



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1. INTRODUCTION

Water is an essential resource for human life and civilizations and particularly in semi-arid and arid regions (e.g. Eastern Mediterranean). In these regions, climate change is expected to negatively affect even more the quantity and quality of water resources. Climate change are forecasting decreased and more intensive precipitation events along with increased evapotranspiration, as a result of temperature increase, combined with other anthropogenic stresses, will act to substantially reduce surface and ground water availability. As a result, these regions need to have professionals that know how to conserve and eliminate the waste of water while considering potential climate change impacts.

Water offers many services for different sectors. This, in many cases can lead to conflict among the stakeholders, making water management a very difficult task. Water managers need to have a holistic perspective on water issues that will enable them to find the optimum solutions based on the specified objectives by taking into consideration all interested parties. This is the reason why stakeholders' opinions were asked in regard to water management priorities. Establishing water management priorities

This require to prioritize what the water needs are for the region. To have a holistic view, stakeholders at certain events were asked to state their priorities. This would help develop courses that are needed in the region and should help enhance water sustainability under climate change conditions. In addition, the graduates will have trained on subject matters that will increase their possibilities to get jobs one they have graduated.

2. PALESTINIAN WATER PRIORITIES

The Palestinian Water Authority organized an event to discuss what the major water issues of country are. Specifically, in the event there were 18 participants from all over Palestine. The event was hosted in PWA Ramallah at 27th of February 2020 in the presence of Palestinian NEO Dr. Nedal Jayyousi, and the Head of Palestinian Accreditation and Academic Quality Commission AQAC in addition to Private sector from water and agricultural companies, beside Ministry of Agriculture, Ministry of Local Government, Ministry of Environment, and Ministry of Energy. Palestine and all Palestinian WaSec partners participated. During the event the stakeholders were asked to identify what the main water priorities for Palestine should be. In addition, questionnaire with the list of suggested new WaSec courses were distributed to the partner in order to look on which topics in water technology they want to add or modify according to their related problems and market needs.

The overall results of the meeting can be summarized as the following priorities:

- a. Industrial wastewater treatment and reuse, especially from stone cutting, tanneries, olive mills; with concern to Hebron governorate; different treatment technologies, feasibility studies, environmental impacts.
- b. Desalination of sea and brackish water with concern to Jordan Valley and Gaza; development of non-conventional water resources, different technologies, feasibility studies.
- c. Water pollution and health; protected areas, sensitivity to pollution and drought, remote sensing of water resources.
- d. Water economics and management; feasibility of developing water supply systems, improving water services, irrigation systems and water, agricultural patterns and suitability, economic feasibility and productivity, institutional aspects of water utilities and service providers, equity of water allocation amongst the different sectors, prepaid water meters.
- e. Artificial recharge to groundwater and its management; hydrologic studies, dams, water flows in wadis, rain water harvesting.

3. JORDANIAN WATER PRIORITIES

The University of Jordan organized an event in Amman to discuss what the major water and energy nexus issues of the country. In the event there were 129 participants from all over Jordan including the Jordanian partners of the WaSec project. The meeting took place on November 4-5, 2019 in Hilton Dead Sea Resort – Jordan. Among the participants, there were the Minister of Energy and Mineral Resources, the Minister of Water and Irrigation, President of the university of Jordan, the senator Prof. Rida Khawaldeh, and the Parliament council member (Eng. Jamal Qamoh). One of the goals of the meeting was to ask stakeholders to identify what the main water priorities for Jordan should be. These priorities are the following:

- a. Climate change is forecasted to decrease water resources in Jordan and needs to be considered for future water management plans
- b. The National Water Strategy for the period 2016-2023 is the major document regulating the water sector.
- c. Financial sustainability of the water sector
- d. Enhanced services of water and wastewater
- e. Supply of water to meet the demand for all uses
- f. Water resources sustainability and protection
- g. Sustainability of overexploited groundwater resources,
- h. Adaptation of new technologies,
- i. Decentralised wastewater management,
- j. Utilization of surface water in municipal supply,
- k. Reuse of treated wastewater.
- l. Water Demand Management Policy. This policy addresses the management of water demands in all sectors, including municipal, industry, tourism, agriculture and other activities of national importance.
- m. Energy Efficiency and Renewable Energy in the Water Sector Policy. The purpose of this policy is to improve energy efficiency in the Jordanian water sector, to reduce water supply costs and to contribute to the growth of the Jordanian economy.
- n. Water Substitution and Re-Use Policy. The objectives of this policy are efficient management of scarce water resources, maximization of the benefits and economic returns for managing water efficiently, recommendations of further actions for implementation, enhancing economic efficiency, ensuring sustainability and preserve freshwater, and protecting the environment and nature.
- o. Water Reallocation Policy. This policy plans to serve as a vehicle to set action plans for redistributing the water flexibly between sectors and governorates.

- p. Surface Water Utilization Policy. The objective of this policy is to present in more detail what is envisioned towards the maximum utilization and optimum use of surface water, its protection, its management, and propose measures needed towards successfully integrating all its components.
- q. Groundwater Sustainability Policy. The objective of this policy is to manage and monitor groundwater resources. The policy deals with many aspects to manage groundwater resources optimally and sustained for future generations.
- r. Climate Change Policy for a Resilient Water Sector Policy. This responds to the challenges posed by climate change. The Policy provides the background, concept and solutions and implementation of a mechanism for building resilience to absorb disturbances while maintaining structure and function.
- s. Decentralized Wastewater Management Policy. This plan sets out Government Policy for the provision of decentralized wastewater management, i.e. the collection, treatment, disposal and reuse of wastewater, with the aim to fulfil the national target for wastewater services.
- t. New policies and efficiency improvements have been undertaken to augment, conserve, reuse and recycle all available freshwater.
- u. Achieving water and energy supply is essential for achieving sustainable development linked to various national issues socially, economically and politically.
- v. Water and energy are closely linked to the provision of services needed by citizens, particularly in the provision of water and sanitation services, where the water sector consumes about 14% of the total capacity of energy in the Kingdom.
- w. The water minister called for the establishment of an integrated system that promotes water, food and energy security and promote the diversification of sources, by uniting the efforts of all national institutions to understand the nature of the linkage between energy and water, and to study mutual impacts and trade-offs, in addition to the need to develop policies and strategic plans to manage resources in an integrated manner.
- x. The water sector accounts for 15% of national energy consumption.
- y. Water Sector: additional large amount of energy is needed in the water sector for desalination and water abstraction from very deep wells.
- z. Injecting the Nexus topic in education and research
- aa. Options to address water scarcity in Jordan: Desalinization, International cooperation, Implementation of renewable energy sources, energy and water efficiency measures, pump storage and load shifting options
- bb. Participatory governance of water-energy nexus

4. CONCLUSIONS

Through these two meetings important feedback was gained by the stakeholders of the region in regard to what the water priorities in Eastern Mediterranean should be. These water priorities were also taken into consideration when determining what courses should be developed for the WaSec MSc program.

Big attention was drawn to the new technologies in Wastewater treatment, the use of new software and visualized models for the process of decision support, that can be strengthening and fostering the decision support system already build by the Palestinian and Jordanian ministries. The private sector and enterprises show great interest to participate in the project activities and give more emphasis that the new programs of education and training come out from WaSec can be of great benefit to the local market, and water sector in general. They also show interest to sign mutual agreement with the universities in order to fully reach the full partnership with them, which will lead to great benefits through joint master thesis supervision, training activities, exploitation of scientific researches outcomes to solve the water problems and to cope the climate change consequences on the water sector.

These meetings also helped to re-establish or establish new connection with the stakeholders dealing with water management. Many of these stakeholders' showed interest in being member of the WaSec Water Network.



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