
PEACE AND PROSPERITY THROUGH WORLD TRADE

Achieving the 2019 Vision

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Water Resources (A National Security Issue for the Middle East)

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1. Introduction

The future adequacy of freshwater resources in the global scale is difficult to assess, owing to a complex and rapidly changing geography of water supply and use. Water resources in arid and semi arid regions face globally the greatest pressure to meet the growing needs. The Middle East is “the most concentrated region of (water) scarcity in the world and of vulnerability to water shortages”. Water scarcity in the region becomes most acute when one considers demand and supply in the context of future socio-economic and natural changes that may occur. The socio-economic factor with the greatest potential impact is population growth; the natural factor of greatest concern is climatic change.

Water is the most important natural resources in the Middle East. The lack of water resources and the increase in consumption, as a result of the population growth, gives this resource a strategic quality that has contributed to conflict in the region. The last decades have witnessed many cases where groundwater pollution or groundwater level declines had serious negative impacts on the health of people, economy and the environment.

Water is a crucial and highly politically sensitive in the region. The Middle East is characterized as water stressed area, increasingly suffering from water shortage and environmental pollution. Over-exploitation of groundwater resources and deterioration of water quality caused by pollution as well as the deficiencies of the existing infrastructure require immediate attention. The water resources are becoming vulnerable to pollution through various sources. Water quality is being

threatened from four main sources; domestic wastewater, solid waste leachate, industrial effluents, and runoff from agricultural activities.

Water security is not only a challenge of physical scarcity of water, but it is a deeply rooted in power, poverty and inequality, and not in physical availability. There is therefore a major difference in these two concepts of an actual physical scarcity of water compared to lack of access to water due to economical, political, social and environmental level. Beyond the challenges related to the management of resource scarcity there are hydro-political and trans-boundary considerations. The cycling of water exerts an important control on climate variability as a result of its complex feedbacks and interactions with other components of the climate system.

Objectives:

The main concern of this paper is to highlight the main challenges of the water cycle in different scales to add some efforts for initiatives to secure the regional water for the future and how it could be used to develop a framework for all stakeholders in a community to address their current and future water needs. Such frameworks by the communities shall form the basis for a national water policy based on sustainability and security for all. Only then, regional and international agreements can be progressed to enhance the water security of the region. The water cycle itself- should link us in a common effort to protect and share equitably, sustainably and peacefully.

Sustainability and security

A large proportion of the water resources in the Middle East are trans-boundary and final arrangements on water allocation between different countries in the region are not yet in place for “fair and equitable apportionment”. The Middle East region’s natural water is not only threatened, it is also threatening!

Water demand and the gap between water supply and water demand are growing due to population growth, higher living standards, climate change and the need to expand irrigated agriculture and industrial activities which leads to potential decrease in fresh water availability.

Freshwater sustainability stands out as the most important sustainable development challenge since it deals with the most precious and finite resource on our planet. When water resources in one community become scarce or threatened, the economic, social and environmental risks increase to all. Thus, a proactive integrated management approach is needed to balance the competing needs for this limited resource. "Water Sustainability" is a collaborative community driven initiative, which requires the active participation of all members in the community. It seeks to establish new creative and coordinated water management strategies based on value addition and security for all stakeholders in the community.

How a community chooses to use its resources to achieve its economic, social and environmental goals require a unified vision, leadership and goals that are specific and measurable. A willing and committed private sector should lead this change within the community.

3. Future Prospective (Integrated Water resource management)

The key aspects to be considered for the future prospective are the role of governance, while governance is considered as a process, so it is important to know 'how' it is done. Rules are brought in and decisions are made. From the other side, governance is a product (e.g. good governance, good decision making, bad governance).

One of the aims of the region is to improve sustainability through better water use efficiency and conservation. Water efficiency can be improved by adopting structural measures like, Improving technologies and non-structural measures such as water pricing, awareness raising, etc.

- The second level of efficiency is related to the allocation and re-allocation of water resources to specific, higher-value uses and more equitable use by all stakeholders.
- The highest level of efficiency is related to the inter-basin trade of water. As water is quite a bulky item to transport, trading water in its real form is costly, which is the reason why the concept of virtual water comes into picture. The economic argument behind virtual water trade is that, according to international trade theory, nations should export products in which they possess a relative or comparative advantage in production, while they should import products in which they possess a comparative disadvantage (Wichelns, 2001).

The water resource management in the MENA region has to meet all needs in a changing socio-economic, political and natural environment, including common water management strategies, strategies of implementation. These strategies have to take into account the current gaps in water availability and the need of equity. It also needs international involvements and exchange of information. Water resources in the Middle East are of strategic importance and have contributed to the conflict in the region. We consider that the way of dealing with water resources should be a message of peace, not a message of war. We therefore recommended:

- Increase of the international involvement and support in the region, mainly in the fields of scenarios of solution of the water conflict, of training, research and data exchange. A standard approach to data management would also facilitate collaboration among communities in the region.

Food and agriculture are the largest consumers on a worldwide basis due to the enormous amounts needed to produce food. Up to 70 % of the water we take from rivers and groundwater goes into irrigation, about 10% is used in domestic applications and 20% in industry. This is due to the enormous amounts needed to produce food.

Desalination and wastewater treatment should be considered a strategic industry and could become a major exporter.

Industry and business leaders should embrace water sustainability as good business. They should lead this effort within their organization and integrate water sustainability principles and goals within their business plans. Sustainable business growth in the MENA region can't be achieved without the successful implementation of water sustainability.

Academia and other community leaders should play a leading role in increasing the awareness of the community on water sustainability.

The Media also have a critical role to play in raising the awareness of the public at large. A fair independent media could serve as a watchful eye for abuse or misuse of limited freshwater supplies or unsustainable management practices.

CONCLUSION

Food security, governance.

These tools will provide the planners a preliminary selection of priority areas for different forms of land use. As environmental problems are increasing, the urgency to take measures for the protection of the water and to improve legislation and public awareness programs in this field.

-  To find the optimum way to manage, protect and serve the limited water resources.
-  Enforce water pollution control and protection of water by suggesting remediation alternatives to reduce or control the influence of the contamination.

Developing new technology, water harvesting, desalination and water treatment
