Virtual Water in the MENA Region – Political Factors

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Introduction

- Water shortage is a worldwide problem, nevertheless, the MENA region remains the most arid in the world
- MENA countries contribute about five percent of the world's population yet have less than one percent of the world's annual renewable freshwater
- The population, had already more than doubled over the past 30 years to about 310 million people in 2004, and is anticipated to double again in the next 30 years
- Jordan, Yemen, the West Bank and Gaza, per-capita availability of renewable water today is less than 175 cubic meters per year. The per-capita availability of renewable water in these countries by the year 2020 will be less than 100 cubic meters, if no regional projects implemented by then.

Factors that degrade freshwater in the MENA region

- Over mining of groundwater, taking in mind that groundwater resources throughout the region are overexploited, and shortages are compounded by pollution
- Contamination by fertilizers and pesticides,
- Solid waste deposits along river banks,
- Dumping of municipal and industrial waste water into rivers and lakes
- Uncontrolled leakages from unsanitary landfills
- Lack of water management
- regional water conflicts

Response to the Water Problem

- MENA countries are requested to manage water in an integrated manner to meet national objectives
- Institutional policy reforms and capacity building are critical to sustaining policies, programs and projects
- Efficient utilization of water resources through new technologies, private sector participation and proper pricing mechanisms is essential for sustainable use of resources and good services to the consumers
- International water issues and regional cooperation should be given particular attention

Food production and drop in prices

- Crop productivity has increased. New and hybrid species have been created, which responds well to large amounts of fertilizers commonly used in commercial farming
- Agricultural sectors of the large food exporting countries receive subsidies. These are in the form of restrictions or taxes on imports, direct payments or subsidized inputs to farmers and export subsidies.
- The World Bank estimates that two thirds of annual grain exported to the international markets comes from the countries of North America and the European Union

The Virtual Water concept

- When a country imports one ton of wheat, it is in effect, also importing the water it required to produce that crop. This is known as virtual water, as defined by Professor Allan, *J A, The Middle East Water Question*
- Because virtual water is embedded in the international political economy, every country in the international political system is subjected to trade in virtual water
- Almost all countries have to trade in food products because they cannot produce all their food locally. This is especially true in the case of the MENA region
- Virtual water can be an important aspect of a country's food security

Competing in the international food market

- MENA countries do not have the resources to compete against the agricultural subsidies provided to farmers like in Europe or the US

- The climatic conditions in the MENA region are not advantageous to the large-scale production of temperate-zone crops, such as wheat. They will have to mobilize large volumes of water for irrigation, often at great economic, social and environmental cost

The viability of a food import strategy

- If MENA countries, were to reduce its water allocations to agriculture and its levels of support, the viability of a food import strategy may be negatively affected
- Food prices would rise, resulting in fewer calories for the poor
- Developing countries, like Jordan, may find it hard to raise the foreign currency to cover the cost of imports

Constraints from applying the concept of virtual water

- In MENA rural societies old farmer families are by tradition politically influential which will prohibit new polices for water allocation
- Reallocating the water resources will make the farmers take a huge burden without any benefits especially when a large portion of those farmers use their land for their own food consumption which happens to be their only source of food supply
- A large portion of the agriculture labor would be forced to migrate to the cities in order to look for alternative income generating modules. This would be hindered by the fact that they are neither well educated nor skilled to compete with their peers in the labor market
- The fear that importing food could pose the risk of further political dependence. The notion of "self sufficiency" has always been the pride of the MENA region

Constraints from applying the concept of virtual water

- Justifiably pricing would be subject to the policies dictated by the food producing countries – governed by their own advantage, countries on the other side of the span (the water importing countries) would be vulnerable

- Some food producing countries might build dams and control the international water sources and courses so as to utilize them to produce more Agricultural products, which in turn would leave less water for the neighboring countries that could be dependant on those rivers or water channels for their daily use. Such a situation will encourage regional conflict on shared water resources which is already an issue in the MENA countries

Constraints from applying the concept of virtual water

- Abandoning some rural agricultural land areas, then reallocating their water resources to the urban sites, would undoubtedly make the nation lose the sense of its green country side and therefore affecting the wild life

- The religious regulations for charging for water that hinders the reallocation of water resources. According to Al-Bukhari, Prophet Mohammad's teachings, The Profit said: "People are partners in three: Water, Herbs and Fire" (referring to basic energy resources). Therefore, and because farmers are generally poor and rain water, rivers and lakes are like a gift from God, the MENA countries might find it difficult to charge the farmers the full cost for water

Future predictions

- It is expected that there will be a doubling of the population in some of the MENA countries in 30 years time, with the additional population living mostly in the urban sector
- There will be a significant increase in per capita urban water consumption in MENA countries, due to raised standards of living
- Half of MENA's Municipal water supply is "lost" or unaccounted for somewhere in the nation's distribution network. As such, if there is no additional accessible water supply becoming available, then the only way to meet the rapidly growing urban demand would be through the reallocation of the high quality fresh portable water supplies, currently used in agriculture to the domestic urban sector.

Proposed solutions

- The region should invest in more efficient irrigation systems, like drip irrigation
- The MENA region should gradually transit into adopting the virtual water theory
- The MENA's farmers should consider alternative options to improve irrigation efficiency, intensification possibilities, and yield enhancing alternatives in both irrigated and rain-fed agricultural production, as well as opportunities to produce less water-intensive crops with high cash return values, such as palm trees

Proposed solutions

- The United Nations is highly encouraged to endorse the virtual water theory, in the form of a UN resolution, as this will augment its credibility while guaranteeing the accurate, fair and effective virtual water trade between the world countries as well as to overcome any political or security concerns especially in the MENA region.

- With the support of the donor community, the MENA region should also form a World Water Fund to assist arid countries who are in the transition stage that cannot yet generate enough foreign currency to purchase all their food product needs through virtual water trading and at market prices.

Thank You