COPING WITH WATER SCARCITY: A "REGIONAL WATER CLUB"

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SUMMARY

The Middle East and North Africa (MENA) region is facing severe water scarcity and accelerating desertification. No state in the region can master these challenges by itself. In order to avoid conflicts over water, states should cooperate on new methods of water management. This paper showcases how regional cooperation in the date palm agriculture sector can decrease water usage and thereby contribute to avoiding conflicts over scarce water resources. This policy paper provides recommendations for policy makers from different sectors (government, agro-business-food trades, and farmers' associations) in the MENA region towards the creation of a regional collaboration framework in the form of a "Water Club" to improve water usage with green desalination technology and wastewater treatment. The aim of this policy brief is to provide impetus for enhanced regional cooperation on issues of water scarcity by creating a pact of cooperation on water use in palm agriculture in the MENA region.

WATER SCARCITY, DESERTIFICATION AND FOOD SECURITY

The Middle East and North Africa (MENA) region is facing severe water scarcity and accelerating desertification. Droughts, evaporation, overuse, growing populations, mismanagement, and lack of awareness are all accelerating water shortages. Today the MENA region has only 1.4 % of the world's renewable freshwater resources for 6.3% of the world's population (Elkharraz and et. al, 2012).

Agricultural food production contributes heavily to the massive overuse and mismanagement of water in the MENA (Roza and et. al, 2020). For instance, the MENA region's date palm cultivation accounts for 90% of the global production (Al Muaini et. al, 2019), which also is one of the most water intensive agricultural sectors in the region. The ten largest date producing countries are situated in the MENA Region. On the other hand, date palms provide essential fruit for food security and protect from desertification. They are well adapted to the harsh climatic conditions in the region and can withstand drought and high temperatures as well as adapt to climate changes. Date palms also mitigate desertification through their roots. Furthermore, date palms can be cultivated with other types of crops, vegetables, and fruit trees, which can be planted below date palms. This technique can further combat desertification and decrease water quantities used by agriculture as the same amount of water can be used to irrigate both palms and other crops.

Date production in the region provides a perfect context for a pilot project to improve water management through regional cooperation and sharing of best practices between various stakeholders from different sectors including government, civil society, business and private, and local communities.

Due to the increasing demand for water, there is a need for the adaptation of new practices and strategies for more effective and less wasteful water resource management to tackle water scarcity in date production. Otherwise, continuous mismanagement of water resources increases water scarcity and may even lead to regional conflicts, especially when governments, businesses or communities compete over water resources. Conflicts over water in the region are currently concentrated in three main basins: the Jordan River, the Tigris and Euphrates, and the Nile.

Water scarcity manifests itself in different forms, both in quantitative reduction as well as an excess of water demand over available supply. It can also be a result of a lack of adequate infrastructure because of financial, technical or other constraints, or limitation in access to water services. Moreover, the failure of national systems to ensure reliable, secure, and equitable supplies of water for citizens can equally affect the availability of water, which can increase water scarcity (Maherar and et. al, 2019). Governments need to push their agricultural and food production companies in date production to adapt strategies and practices that mitigate the devastating impacts of water scarcity and desertification.

THE NEED FOR REGIONAL COOPERATION ON WATER SCARCITY AND PALM AGRICULTURE

Regional cooperation between farmers and date producers can help to solve technical, financial and infrastructural difficulties in agricultural water management by narrowing water supply-demand gaps and decreasing water usage. A regional approach to the agriculture–water nexus is needed to avoid conflict over water resources. Technical cooperation on wastewater treatment can play a significant role in coping with water shortages, especially when it is reused for agricultural purposes.

Date palm trees need an average of 300 liters of water per day. However, studies have shown that farmers in the MENA region are using more than twice this amount to irrigate them (Heidi and et. al, 2016). Thus, modern irrigation techniques can decrease the water usage of date production and thereby increase the sustainability of the palm sector. The adoption of sustainable technology, which exploits wastewater treatment and desalination of saltwater, combined with implementing modern methods of irrigation, can help to reduce water scarcity and desertification. Given the dramatic consequences of desertification and increased water scarcity caused by climate change, entire countries of the region or at least large parts may be rendered uninhabitable and also uncultivable in the near future.

A regional water management cooperation framework recognizes the complex links between water scarcity, sustainable agriculture, food security and environmental development. More efficient water resource management and less wasteful smart agricultural methods must be adapted to improve the resilience of the food supply chain in order to achieve food security with water security.

No single government or business can effectively solve the complex challenges originating from water scarcity alone. Furthermore, phenomena of water shortages, desertification and climate change do not stop at national borders. Thus, partnerships among regional stakeholders in the water, agriculture and climate-related sectors are necessary to tackle the obstacles of food security under water scarcity circumstances. Increasing regional cooperation between governments and farm businesses can help to develop a common vision to avoid conflict due to increasing stress on water resources.

ESTABLISHING THE WATER CLUB

Cooperative actions are needed when tackling issues of water scarcity and desertification in the MENA region. A regional water club to foster cooperation on water management aimed at reducing water usage and addressing the underlying transnational issues of desertification and water scarcity could pave the way for improving irrigation methods in the agricultural sector. As a first step, this paper suggests focusing on date production as an integral and water intensive sector of agriculture in the region. In order to create a water club, a regional office enhancing dialogue between stakeholders and providing funds for innovative cooperation projects should be established. All participating stakeholders should be represented at the regional office. International organizations such as the Food and Agriculture Organization (FAO) and the United Nations Development Programme (UNDP) and donor countries should make a public call for such an initiative, in order to alleviate the effects of water scarcity and desertification on their population and improve food security and livelihoods.

The water club is meant to be a flexible and collaborative process to which all partners from different sectors (governmental, agro-business-food trades and farmers associations) can contribute by working on multiple levels: politically, technically, financially, and locally. The initial funding resource can be secured partly by contributions of agro-businesses and wealthy donor states in and beyond the region. Its aim is to bring stakeholders from different sectors to support the idea and work together regionally to address issues of water scarcity and desertification.

THE WATER CLUB IN ACTION–RECOMMENDATIONS

- Focusing on the water–agriculture nexus, this paper argues for the need to build a regional cooperation framework. Support for establishing a MENA water club could be initiated by the FAO, which has already outlined an action framework for achieving food security through agriculture despite increasing water scarcity (FAO, 2012). To alleviate water scarcity and transform the agricultural sector, it is necessary to have joint initiatives by agricultural businesses, international organizations, development cooperation agencies, and agricultural or environment ministries to fund innovation and cross-border cooperation in the form of agricultural projects, free trade initiatives, and research into new technologies to decrease water usage. For instance, economic incentives could be given for regional cooperation by agricultural businesses and governments through investment funds to implement improved water management and accelerate research into innovative technologies addressing water scarcity in the palm agriculture sector.

- Overall strengthening governmental strategies and encouraging stakeholders to lead the development and implementation of sustainable agricultural water management and innovation is necessary in order to put the issue on the agenda. A push by the international community aimed at increasing awareness of water scarcity as a human security issue and the responsibility of governments and the agricultural sector could foster the rethinking needed to pave the way for a much-needed water club.

- The regional office of the water club could manage the raised funds to promote the use of efficient irrigation techniques and agricultural approaches among the club's partners through funding pilot projects and capacity building with farmers.

- In addition, the water club, together with the involved agricultural ministries, should strive to establish technical partnerships in focal countries (ie. Jordan, Egypt, Palestine) to promote the more effective use of available water resources. Within such a cooperative framework, technologically more advanced businesses and farmers could support agricultural production in less developed agricultural collectives by identifying needs and providing expertise for transformative projects to tackle water scarcity in palm agriculture (ie. through joint plans at the regional and national levels).

- Once established, the water club should seek to develop preemptive measures such as a monitoring system on water availability, usage and productivity in the agricultural sector and beyond in order to avoid imminent water crises and thus avoid conflict over water resources.

- Furthermore, the agricultural and environmental ministries of participating states should develop government strategies aiming at developing a more sustainable agricultural water management.

- International development agencies like UNDP, the German Corporation for International Cooperation (GIZ), or others, should establish measures to increase the capacities of local administrations and civil protection units to create drought risk management plans, and regulations for the prevention and control of water contamination by agriculture.

- In order to achieve increased awareness of decision-makers and farmers in the MENA region to prioritize the fight against water scarcity, the transformation of suitable agriculture sectors like the symbolically important date palm agriculture could be utilized to gain momentum for increased efforts and cooperation.

- UN agencies and donor countries should host high-level meetings to kick off negotiations and discussions regarding increased cooperation on water management across borders. In order to raise the importance of water management issues, various conferences in the region including scientists and civil society organizations should be held.

- Together with agricultural businesses and scientists, agricultural ministries should strive to develop guidelines for wastewater treatment and reuse of small-scale irrigation systems for date palm farming.

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