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## Promoting water security in the MENA region. Water technology solutions in development cooperation and the role of SMEs

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### Promoting water security in the MENA region

On the 09th of July 2019 the MPDP together with SME Europe organized in Brussels an expert exchange on “Promoting water security In the MENA region”. European and regional experts from the civil society, business sector and administrative level came together, to discuss the MENA region’s most pressing challenges

concerning water security. This paper summarises the event’s output and discusses economic framework conditions to promote and improve inter and intraregional water technology transfer through SMEs. It further addresses the question of how to enhance investment protection and capacity building in the region. It focuses on ways to make sure that water technology knowledge is sustainable and to the benefit of the people in need.

## Water scarcity in the context of the MENA region

Water is a common good and crucial for stability and prosperity. Water is linked to economic activities and development, which include the availability of adequate water supplies for food and energy production, industry, transport and tourism. Energy as such is necessary for the extraction, desalination and distribution of drinking water.

### Challenges for the region

Being the home to six percent of the world's population and of one percent of the world's freshwater resources, the MENA region suffers from severe water insecurity. The region hosts 17 countries which are below the water poverty index (WPI) which considers as criteria the water availability, access to water, water management capacity, allocation of water uses and quality of environment. The reasons for water scarcity are multiple. Amongst these are the increase of demand on limited or lacking water resources, uncontrolled population growth, climate change, migration and a deteriorating water quality. Many of these factors are exacerbating tensions in and among communities and countries, threatening their stability and peace.

Often good water governance is lacking, marked by insufficient policy and regulations and a deficiency of implementation. Energy costs, environmental impacts and soil degradation are on the constant rise. Hazards, conflicts with flows of refugees and related struggles for physical and economic access to food and water exacerbate the situation.

Moreover, political instability can be a factor and cause for water stress. The unavailability of data and respective reliability makes it difficult to take adequate measures to tackle pressing water scarcity concerns, especially in vulnerable areas.

The challenges for the region's water-food-energy nexus stem from an inequity and variability of water distribution, overconsumption increasing weather extremes and a non-sustainable business model. Climate change provokes rainfall

deficits (8%) and a rising evapotranspiration (12%). Subsequently rivers bear less water and thus impact water supply and hydropower generation and soil moisture. This situation will aggravate in the future due to shrinking current surface and groundwater supplies of less than 200km<sup>3</sup> per year and a projected total water demand of more than 400km<sup>3</sup> per year by 2050.

Insufficient water supply infrastructure poses a dangerous challenge to many people of the region. In some countries like the Lebanon, unsafe and leaky supply pipes cause water losses of about 50%. Many people do not have access to tap water, but rely on companies which distribute water in tanks for a limited daily use. In some areas as in the Gaza strip 97% of the water resources are polluted. The pollution is caused amongst other factors by failing wastewater treatment plants or a high amount of lime and sea water, which enters water resource areas. This causes the public health to deteriorate.

Additionally, transboundary issues like the multiple-use of and the unequal access to rivers, such as the Jordan River, which is shared by Palestine, Jordan and Israel, cause environmental and political tensions. Such tensions lead to a competition about water resources between those states, and endanger social peace within their societies.

This situation is often fuelled by micro-economic weaknesses like high debt levels and the region's failure to create jobs for young people.

High population density and growth represent further challenges in the region in regards to water supply and water security. This goes hand in hand with infrastructural and geographical planning errors, such as in the Jordanian capital Amman. The city, being located in a geographically challenging region, lacks of natural resources and is now facing even more pressure on its resources due to the increased pressure on scarce water resources through Palestinian and Syrian long-term refugees.

## Obstacles for water business operations in the region

Companies from the water sector which maintain business relations in the region face various obstacles in transferring technology and implementing business projects. Exposed to a high number of competitors, many small and medium enterprises do not only struggle with the aforementioned uncertain political and security situation in the region. At the same time they face restrictions in traveling and free movement. As a consequence, many European companies which would like to invest in countries like Iran and Libya cannot operate there at all.

Despite the fact, that in some countries qualified engineers with skills comparable to international standard are available, many enterprises are still confronted with a partly low level of education and difficulties in finding adequate local staff with sufficient expertise. Often many employees show a lack of awareness for reliability and quality which endanger operations on all levels of the project development and management. Qualified European staff is reluctant to come to the region, either because of high costs for living or political instability insecurities.

A lack of technical as well as financing master planning and a poor project development as such are causing high tendering costs. Many key projects which demand elaborated engineering skills have to be started from zero. At the same time, standards for water facilities vary from country to country, some being extremely high. This as well as a lack of budget often leads to repeated tendering due to needed adjustments of terms and conditions.

In the negotiation and execution phase of business operations companies face very long lasting and sometimes incomprehensible evaluation and award-procedures. Due to unfavorable payment conditions, high costs for the insurance of the productions and uncertain payment practices it is difficult and costly to operate. Bureaucratic proceedings, inadequate investigations or analysis of the plant infrastructure – missing master plan – delay the

project execution and hinder contracts to come into force. Unfortunately, many countries also show an insufficient coverage with budgets, payment delays and a sluggish and bureaucratic delay of handing over the plants.

When it comes to the “operations and maintenance warranty phase”, many clients fail to demonstrate good operation and management skills, which finally will lead into warranty- requests due to own mistakes in the handling of the plant. Unavailability of raw water sources or with certain deviation to the original tender-specification is also a common problem at the end of the project implementation phase.

In terms of investment, countries offer support and acceptable conditions to attract investments, but the basic legal framework needs to be considered as well as bureaucratic procedures for hard-currency transfer (e.g. transfer of locally gained dividends) and regular transfer costs. Many countries reimburse fees and tax contributions only half a year after they have been paid. For SMES this can easily lead to a critical lack of cash.

Additionally, numerous “low-cost low-quality” competitors and difficult prequalification- criteria are limiting the SME's participation in the market. Prequalification requests do pose extraordinary high needs for references. Often, required capacities are double as high as the tendered project and other competitors rely on fake references to win the project. The region also sees more and more engagement of Chinese competitors which are low-price and generous with payment conditions. Since these enterprises are politically backed-up by the Chinese government other companies are not able to be competitive with them.

## Policy Recommendations for EU action

### Addressing water insecurity

All measures which intend to address limited water supply should contain the following three areas of action: water efficiency, water reuse and

water generation. An integrated and holistic approach to managing both water demand and supply is also crucial. In addition, government funded sustainable water technologies like renewable desalination plants are necessary. But technologies will only be to the benefit of the region, if MENA authorities are capable to ensure they are adapted to local conditions and that they are operated by educated local staff.

A) MENA countries should establish technology transfer offices to improve intellectual property protection and thereby encourage industrial R&D and boost technology transfer between each other. The EU could support the establishment of such offices.

B) Special attention should be given to the agricultural sector, since over 70% of all water resources are spent in this sector. New technologies like irrigation systems and the measures that support the reuse of water need to be financially incentivized.

C) Good governance remains key to success and should be reflected in the "Horizon Europe" missions and programs, bearing in mind a strong commitment to already established systems as well as accurate and targeted innovations

D) The EU should cooperate with regional players, integrate regional hubs and further the exchange with the Arab League on an integrated technology and knowledge transfer as well as coordinated capacity building, e.g. the installation of local "sustainability guilds" for exchange and implementation.

E) Despite existing political conflicts, governments of the region should be encouraged to dialogue about technical issues which help to solve pressing water resource supply issues. The European Union could act as broker in this endeavour, e.g. through dialogue and visiting programs that raise awareness for urgent water issues and promote technical and cultural exchange.

F) People should to be capacitated "on site" to be able to achieve a sustainable technology transfer and a successful implementation of long

lasting projects. Local authorities and foreign businesses should work hand in hand to facilitate local water resource management and water efficiency as well as efforts that promote behavioral and mindset changes in local communities.

G) Moreover, the EU and MENA countries should create transboundary "Joint Monitor / Research Centres" for data collection and evaluation. Thereby, the often critical political dimension could be excluded and the overall lack of necessary data for implementation of water security projects be addressed.

H) Existing projects on the water-energy – nexus which aim at creating interdependencies on water and energy resources between regional competitors should be supported. This approach should include water management efficiency strategies for the agricultural sector.

## Recommendations for the EU on Sustainable technology transfer

Experts from SMEs gave clear recommendations for the EU for a more sustainable technology transfer, referring to financing, education and know-how exchange.

A) From the business perspective, EU should develop financing concepts for water with a securing effect for companies, tailor-made for SME needs and according to the existing KfW-model that facilitates direct payments.

B) Additional efforts should be increased to enable the insurance of financing, thus covering production and payment-risks. Moreover, the EU is asked to politically support adjustments of taxation-rules, promoting exemptions from import-tax and customs.

C) As China and the US are politically supporting their companies in the region, the EU should increase its water diplomacy efforts and readjust tenders and grants, providing financial stability to European SMEs, which would boost their competitiveness.

D) Furthermore, the European Union should support education programs in local

entities of European based companies and offer respective grants for training, increased efforts to harmonize local education structures, e.g. through EU-programs with graduation scheme, could have a long lasting positive effect on the local communities. The base for cooperation must be a people centred approach, that understands the (in)formal structures on the ground, builds trust beyond a mere technical exchange and helps to create local partnerships which are crucial for any successful operation on the ground.

E) As many companies still have to train their staff on specific technical matters at the company's headquarters, a promotion of know-how exchange is necessary. Therefore, local employees should have easier and less bureaucratic access to short term VISA permits

## Market entry tools

F) Experts related to necessary areas for action, which support a smooth entry to the local market, as follows: Companies should get to know local references, such as successfully executed plants and manufacturers of key-components for the construction. They should build a local network, participate on fairs and exhibitions and organize visit-programs and team-building events to better understand social interactions and local mentalities.

G) Moreover, SMEs should present their work to authorities and local design institutes

and promote their products on the market. through targeted media and social media campaigning. They should attend locally organized events or seminars on water and build up local partnerships. Companies should also have the ability to perform supplies, services and warranty "on site" and give support in design and solutions at an early project phase.

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