



PRESS RELEASE
42nd Cairo Climate Talks
October 5, 2016

“Egypt's Freshwater: Current Challenges, Future Solutions”

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“Water scarcity is one of the biggest challenges – not just for Egypt – but for the whole region,” declared H.E. Julius Georg Luy, the German Ambassador to Egypt, in his opening remarks at the 42nd Cairo Climate Talks' panel discussion on Egypt's freshwater challenges and possible future solutions.

He added that the Human Right to Water entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses, as defined by the United Nations. While these words sound good on paper, H.E. stated, the real question for governments and societies remains on how to put them into practice – especially in the light of climate change and continuing population growth.

Before closing off his remarks, H.E. pointed out that the use and management of water resources have been one of the German and Egyptian cooperation's priorities for years. Finally, he emphasized the importance of strengthening public and private sectors cooperation in the field of water and focusing on decentralizing water access to ensure safe and accessible water to all Egyptians.

Dr. Mohamed Rami, research professor at Egypt's National Water Research Center (NWRC), exposed Egypt's water management plans for the years 2030 and 2050. “Our aim is to optimize the use of water through advanced technologies and reduce our consumption of water in industrial, agricultural and residential applications,” he said. Some steps have already been taken in this direction, he explained, mentioning the introduction of drip irrigation in agriculture.

According to Dr. Rami, the NWRC produces monthly reports which compile all on water quality. "Those reports are available to the public in hard copies and online," he stressed. The reports show that most industrial wastewater in Egypt is not dumped directly into the Nile river, but goes through preliminary treatment – with some exceptions in Upper Egypt where violations are much more common.

The attempts by the NWRC to control water evaporation as a means to reduce water losses haven't been successfully put into practice yet, he added.

"Among lower middle income countries, Egypt ranks 7th in mortality related to water pollution," declared environmental researcher Amena Sharaf, who works for the Egyptian Center for Economic and Social Rights (ECESR). "Sadly, but also expectedly, the poorest communities are the most affected by diseases caused by water pollution and poor sanitation," she added. These communities are also the ones who depend on those polluted waters to make a living, like freshwater fishermen. "These fishermen are directly affected by the pollution on an economic and health level," she elaborated.

In order to contribute to solving Egypt's freshwater issues, ECESR has developed a new platform, or "Water Map", which aggregates primary data on water pollution provided by members of the affected communities. The idea is to highlight the hotspots where people are suffering the most from water pollution and to strengthen civic engagement. "For years, local populations have been blamed for not reporting violations, when their voices have just been ignored" she pointed out. The water map's content is in Arabic, and people can add or access information in different ways: by pinning the location, searching for a specific company or providing a description of the violation they bore witness to. "This way, the platform is very user-friendly and can be used by a large amount of people," she added. To ensure that the platform isn't misused, Ms. Sharaf explained that a monitoring system will be put in place to verify each new entry and violation report on the website. But she also mentioned that this map, which will highlight Egypt's water pollution hotspots, won't be a self-sufficient tool and that further investigation and research will be needed to complement it.

Dr. Eman El Tahlawy, assistant professor of Public Health and Social and Community Medicine at Cairo University, explained to the audience that the real difficulty lies in getting rid of the chemicals and heavy metals like phosphate, lead and arsenic which exist in tap water. "Heavy metals pose a real threat to public health and cause diseases such as renal failure, cancer, miscarriages, children malformation and stunting. Dr. Eman made some recommendations, one of which is to ensure lab-certification in the water purification systems to give accurate data on which chemical pollutants are present. She also believes that legal inspections in factories are important. "There is no lack of information. We all know there is water pollution. What is important is that we act," she concluded.

To Dr. Hosam Shawky, professor of Water Chemistry and the head of Egypt's Desalination Research Center, water desalination technology is the way forward to enhance freshwater supplies for drinking purposes in the country. "135,000 cubic meters of freshwater is already being produced in Egypt per day through desalination. Our goal in the next five years is to produce 1 million cubic meters per day," he said.

For a long time, one of the greatest worldwide challenges for desalination has been its energy consumption. Saline water used to be distilled by heating it up to produce water vapor, which was then condensed to produce freshwater. Today, reverse osmosis has become an increasingly common method for desalination since it needs five times less energy than distillation technology. Reverse osmosis, in which sea water is pushed through a membrane with microscopic holes to retain the salt, is also the most widely used technology in Egypt. The big difference in energy consumption is what makes reverse osmosis technology more popular in Egypt, and explains why the Desalination Center mostly focuses on it.

By establishing the “Water Desalination Alliance” in collaboration with some Egyptian universities, the Water Holding Company and Masr el Kheir foundation, Dr. Shawky's goal is to locally produce reverse osmosis membranes. “A small-scale membrane has already been manufactured and now we want to upscale it,” he stated.

In addition, the desalination center has constructed two mobile reverse osmosis units that rely on solar energy as a primary source of energy. The plant located in Matrouh produces 11 cubic meters of fresh water per day, while the one in Shalateen produces 22 cubic meters. From 9,000 parts per millions of salt in seawater, the purified water's salt concentration falls to 500 parts per millions. “Solar energy desalination plants are a great fit for small scale applications and for supplying small communities with freshwater. Unfortunately, solar energy cannot be used for large productions: the area it would require for all the solar panels would be too huge,” he explained.

Brine formation caused by excess salt removal activity is another challenge of desalination. Dr. Shawky suggested developing deep brine water wells to dispose the brine.

Background Information:

The Cairo Climate Talks are conceived, organized and hosted as a cooperation between the German Embassy in Cairo, the Egyptian Ministry of Environment, the German Science Center (DWZ), the German Academic Exchange Service (DAAD) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). For more information, please visit [our website](#) or contact press@cairoclimatetalks.net.