

تحت رعاية معالي رئيس مجلس الوزراء المصري المهندس شريف إسماعيل مؤتمر تحلية المياه الحادي عشر في البلدان العربية UNDER THE PATRONAGE OF THE EGYPTIAN PRIME MINISTER ENGINEER SHERIF ISMAIL 11TH WATER DISALINATION CONFERENCE IN THE ARAB COUNTRIES

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"Desalination Technology for Drinking Water Supply in North Nile Delta Region: Challenges and Opportunities"

Holding Company for Water and Wastewater EGYPT





Content



Water Balance



In Addition to.....

Deterioration of Nile water **quality** Northward



Desalination

• low priority as a source of municipal water.

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- High cost compared to conventional treatment.
- Coastal cities.
- Solution for covering the water shortage in Egypt.
- Reverse Osmosis



Methodology

- Two study areas
- Data analysis (water quantity, service hours and population growth)
- Remote sensing analysis
- Field work.



EDKO AREA



Study area (1).....Edko



Remote Sensing



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BURULLUS AREA



Study area (2)..... Burullus



Remote Sensing







Water Quality Results I. Drinking water Quality



The deterioration of drinking water quality is due to non-compliance of the drinking water in some parameters specially

Ammonia and Nitrate



Residual Aluminum

THMs

- this could be attributed to elevated \cap pollution percentage in the raw water resources.
- WTPs are enforced to increase the Chlorine and Alum doses

DWQI=75%

Lakes Water VS. Fresh Water Streams

Lake Edku has a higher average salinity of (3000 mg/l) than lake Burullus.

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water quality Parameters Surface water NO₂ Lakes water NH3 DO BOD COD ₅₀ mg/l **45** 2530 35 40 1520

The two lakes water are classified as **brackish water** with a salinity ranges between 1800-3500 mg/l.

2

The water quality in the lakes still affordable and even with a better quality if compared with the surface water quality in the study area



The Northern Delta lakes provide a potential alternative Drinking water resourse that could be desalinated with lower cost



Proposed treatment train for brackish water within the study area using

Electro-dialysis Reverse desalination technique

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Cost comparison between Sea and Brackish water Desalination based on data adapted from RSWW 2016 and CDWR 2009.

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Consolation





Thanks