



## CONTENT

Preface .....	1
Role of dams in water-energy-food nexus ( <u>S.Y. Kumcu</u> , M.E. Aydin) .....	2
Water-energy-food strategy for sustainable development in Morocco ( <u>A. Dahchour</u> , <u>S. El Hajjaji</u> ) .....	13
Impacts of Grand Ethiopian Renaissance Dam on water, agriculture and energy sectors in Egypt ( <u>A.M. Negm</u> , <u>M.A. Elsaabi</u> , <u>M.S. Tayie</u> ) .....	25
Impacts of climate change on water and food security in Turkey ( <u>B. Topkaya</u> , <u>E. Karadirek</u> ) .....	34
Removal of arsenic pollution from groundwater in small villages, assessment of low cost technologies in Konya, Turkey ( <u>M.E. Aydin</u> , <u>S. Aydin</u> , <u>F. Beduk</u> , <u>M. Bahadir</u> ) .....	46
Constructed wetlands as smart combinations of water treatment and energy generation ( <u>E. Domscheit</u> ) .....	54
Assessing the potential of using solar photovoltaic pumping in irrigation: Case of the Tadla Region in Morocco ( <u>A. Hajji</u> , <u>K.A. Nombo</u> ) .....	62
Integration of solar energy, desalination and agricultural greenhouses ( <u>H.E.S. Fath</u> ) .....	70
Kinetic study for nitrate removal by nano zero-valent iron ( <u>H.I. Uzun</u> , <u>Z.B. Arslan</u> , <u>K. Ulucan-Altuntas</u> , <u>E. Debik</u> ) .....	80
Impacts of unofficial water reuse in Edko drain catchment, western Nile delta ( <u>A. Abd El-Moneim</u> , <u>A. El-Saadi</u> , <u>A. Abd Allah</u> , <u>A. Hassan</u> , <u>S. Abou El-Fotouh</u> ) .....	87
Study of physicochemical parameters of groundwater in Mohammedia Region, Morocco, for use in agriculture ( <u>S. El Hajjaji</u> , <u>J. Mabrouki</u> , <u>A. Dahchour</u> ) .....	97
Flood risk assessment for sustainable renewable energy generation; Case study: Egypt's Red Sea Coast ( <u>A.M. Elmoustafa</u> , <u>A.M.O. Kamhaway</u> ) .....	107
Water uses and productivity in crop/livestock farms in a semi-arid region ( <u>M.T. Sraïri</u> ) .....	123



Assessment of water management in irrigation applications in the Karapinar Basin, Konya, Turkey <i>(M.E. Aydin, S.Y. Kumcu)</i> .....	141
C/N ratio mapping using geostatistics for variable rate technology application in Egypt <i>(S.M. Shaddad)</i> .....	149
Internet of things and cloud computing for smart precision agriculture <i>(E.E. Omran)</i> .....	156
Bio-treatment efficiency of different wastewater sources and its potential application on heavy metal reduction and food production <i>(A.M.A. Merwad, A.M. Helmy, M.S. Abu-Hashim)</i> .....	173
Grey water management in Jordan: Technology and future perspectives <i>(M. Al-Alawi)</i> .....	191
Agricultural water resources management, environmental and financial evaluation – A case study <i>(K. Günes)</i> .....	199
Urban sprawling in Egypt and its impact on land use reform <i>(H. Soussa)</i> .....	206
Utilization of unused wastewater for fodder production in Jordan <i>(A. Jiries)</i> .....	215
Water footprint of sugarcane crop in Egypt <i>(A. Ghandour, A.A. Farag, A. Swelam)</i> .....	226
Energy for water in Jordan’s water sector <i>(A. Al-Omari)</i> .....	236
Wastewater/waste to energy in MENA Region - A review of opportunities <i>(Z. Abou Elnaga)</i> .....	245
A review on smart city concept and smart water management <i>(I.E. Karadirek, B. Topkaya)</i> .....	258
Lake management under the stress of climate change and agricultural water use: Beyşehir Lake, Turkey <i>(A. Doğan, A.S. Şanlı)</i> .....	266