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Climate induced changes on the hydrology of the southern coast of Mediterranean Sea, Alexandria – Matrouh Governorates, Egypt

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The Nile Delta is one of the most complex, fragile and densely populated landscapes. It has suffered from abrupt environmental changes including sea level rise, sea water intrusion, and dramatic drawdown in groundwater levels due to severe pumping. The western part of Nile Delta's coast, from Alexandria to Marsa Matruh Governorates, is considered as one of the most vulnerable regions in Nile Delta. Environmentally complicated risks on water and soil coincide with suffering from strategic management problems.
The general lack of studies linking sea level rise with socioeconomic impact cause large uncertainties. Such impacts became very critical recently, as subsidence and successive step sliding in the northern coast cause catastrophic disasters in areas with high population and socio-economic importance.
Western Coast of Nile Delta is characterized by a succession of limestone and oolitic limestone which is extremely fragile and vulnerable to degradation in addition to dissolution by saline water.
This study deals with studying the effect of global warming, sea level rise and severe pumping on the studied area. Examples will be given for soil degradation, subsidence, surface sliding, creeps successive step sliding, and sinkholes due to dissolving and fracturing of the limestone plateau.