Title: An overview of Lake Urmia: a dying lake in Iran

Authors: Namdar Baghaei-Yazdi, Ali Mohseni, Esmaeil Fallahi, Shirin (Tayebeh) Goli

Affiliation: Phoenix Project of Iran

This paper is a literature review of published papers on Lake Urmia. The authors have conducted a literature search on the status of this dying lake, causation of failure, and potential of recovery.

Lake Urmia (LU) is as the largest endorheic and hypersaline lake in Iran and one of the largest saltwater lakes in the world. Anthropogenic drought, along with natural resources mismanagement based on political ideology of Islamic Republic of Iran are the preeminent factors behind the disappearance of LU.

There is a growing interest in restoration of saline lakes around the world. Eco-conscious people around the world have been concern with drying lakes of the world. Likewise in Iran the number of concern scientists and Eco-conscious public has been increasing as well. The outcry for restoration of the drying lakes inundated the scientific communities for restoration of the drying lakes. The published data indicate that LU had the least recorded shrinkage between 1987 to 2000 with less than 2% of the lake surface water area. From 2000 to 2010 LU started shrinking with rapid pace to 28% of the surface area and from 2010 to 2014. The 2 chief contributing factors to the LU shrinkage are the construction of 30 operating dams and 16 more under construction by the IRI government and the second factor is licensing the drilling of 88000 water wells in and around the lake Urmia. After years of the public outcry, finally the Government sanctioned the restoration of LU in 2014. As a part of the restoration process, the researchers using the spatio-temporal technology to detect the land cover changes and salinization progress in Urmia Lake Basin (ULB) during 2014 to 2019. The available data indicates that the area of irrigated lands around the lake increased from 1265 km^2 in 1975 to 5525 km^2 in 2011, resulting in disappearing of the water surface area of UL from 5982 km^2 in 1995 to 586 km^2 in 2014 with increased salinization in the basin of LU.

According to most of the published investigative studies to the cause and effect of the shrinkage of the LU, the natural drought and climate changes were not the main causes of the lake LU shrinkage. We believe, restoration of the lake Urmia demands a multidisciplinary approach through integration of marine biologists, ecologists, botanists, agricultural scientists, engineers, epidemiologists, chemists, geologists, management and governmental policies experts, under the supervision and inspection of the United Nations Environmental agencies.