



Water footprint concept for a sustainable water resources management in Urmia Lake basin, Iran

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The fast shrinkage of Urmia Lake in West Azerbaijan, Iran is one of the most important environmental change hotspots. The dramatic water level reduction (up to 6 meters) has influential environmental, socio-economic and health impacts on Urmia plain and its inhabitants. The decline is generally blamed on a combination of drought, increased water diversion for irrigated agriculture within the lake's watershed and land use mismanagement. The Urmia Lake sub basins are the agricultural cores of the region and the agricultural activities are the major water consuming sections of the basin. Land use changes and mismanagement in the land use decisions and policies is one of the most important factors in lake shrinkage in recent decades. Fresh water is the main source of water for agricultural usages in the basin. So defining a more low water consuming land use pattern will put less pressure on limited water resources.

The above mentioned fact in this study has been assessed through water footprint concept. The water footprint concept (as a quantitative measure showing the appropriation of natural resources) is a comprehensive indicator that can have a crucial role in efficient land use management. In order to evaluate the water use patterns, the water footprint of wheat (as a traditional crop) and apple (recently most popular) have been compared and the results have been discussed in the aspect of the impacts on Lake Urmia demands and its dramatic drying process. Results showed that, higher blue water consumption in such a regions that have severe blue water scarcity, is a major issue and the water consuming pattern must be modified to meet the lake demands. Lower blue water consumption through regionalizing crops for each area is an efficient solution to meet lake demands and consume lower amounts of blue water. So the proper land use practices can be an appropriate method to rescue the lake in a long time period.