

Monitoring and inspecting the effectiveness of crop improvement and plant breeding on reducing the abstraction of water resources in the 5th –phase sites of the cooperation project of the Lake Urmia revival

One of the consequences of the lack of water-resource management, especially in the agriculture sector, is the current conditions of Lake Urmia. This lake is the largest domestic lake in Iran and is declining for climatic and human reasons. Concerning the 90% use of the basin's water resources in the agriculture sector and its low productivity, one of the most important priorities and approaches to rescuing Lake Urmia is the conduction of the necessary steps towards decreasing water consumption in this sector. One of the main objectives of this project is to present approaches that reduce the rate of water use (such that no stress is imported to the product) parallel to increasing the inlet water to Lake Urmia so that its revival aim is realized. This issue is attainable by the application of managerial and agricultural techniques in both modern and conventional irrigation sectors and its generalization to the basin's level. Thus, this project attempts to apply crop improvement and irrigation management techniques that are suitable for the conditions of every farm and; therefore, move towards decreasing water use and promoting its productivity in the agriculture domain, which is the main consumer.

This study was conducted in the farm scale to help with the revival of Lake Urmia in the lands of the lake's basin as the 5th phase of the sustainable agriculture project in the cities of Urmia, Naquadeh, Miandoab, and Mahabad, all located in West Azerbaijan, besides Bonab and Malekan cities, located in East Azerbaijan and to decrease agricultural water use during the 2018-2019 crop year. To this end, the study employed diverse crop improvement and management techniques such as conservation agriculture, modern irrigation systems, the modification of surface-irrigation systems, real-time irrigation, proper cultivars, optimal cultivation date, deficit irrigation, the management of surface and under-pressure irrigation, optimization of the dimensions of irrigation strips and plots, leveling operations, etc., that are suitable for the conditions of every farm. The main purpose of this study is to determine the effectiveness rate of different technologies and optimal management on the lands of the mentioned project to minimize irrigation water consumption, delineate water balance in the lands, monitor the performance of engineering and technology firms, and implement training courses needed in the region. The pilot farms were selected in such a way that they were recognized in terms of the physical and chemical properties of soil, cultivation kind, conventional management, and water-resource supply at plain the level.

