



## Climate change and the challenges of managing the productivity of water resources and the development of aquaculture

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### Abstract:

The rising temperature will lead to an increase in demand for agricultural water due to the high evaporation rate. Increasing the temperature and amount of evapotranspiration, as well as reducing rainfall, increase the phenomenon of desertification and salinity of soil. Increasing the temperature and increasing the average winter temperature will reduce the temperature difference between winter and summer, including the consequences of reducing groundwater nutrition and reducing water resources. The presence of Iran in the dry and semi-arid region of the world, the drying of wetlands and the reduction of groundwater resources has caused Iran to face a major challenge called the depression crisis. Accordingly, the statistics in the water sector are very disturbing. The UN report in 2017 focuses on Iran's challenges to the economy and water security, while two thirds of the country's water resources are in the western and southwest provinces. In addition, in recent years, the average rainfall in the country has been reduced from 250 to 240 mm. The purpose of this paper is to discuss the two major challenges of the water crisis in the agricultural sector and the sub-sector (aquaculture) using the conceptual method and theoretical literature based on archival materials. The results of the studies show that climate change is one of the major issues that causes changes in water resources and the consequences that one of these consequences is droughts. Drought is a phenomenon that often occurs in dry and semiarid regions, and the increase in climate fluctuations increases the severity of this phenomenon. Climate change and drought are causing severe damage to water resources. Also, unsustainable use of water resources intensifies the water crisis more and more day by day. These challenges require appropriate measures to manage the complexity of climate issues and reduce harm to beneficial and stakeholder communities.

**Keywords:** Climate change, Water resource management, Aquaculture, Food security