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Drought Impacts on Water Resources in Iran Abolfazl Mosaedi 1*, Mohammad Ghabaei Sough2

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Abstract

Iran is located in an arid and semi-arid region of the world. About 70% of the total areas of the country are arid or semi-arid with an annual precipitation of less than 250 mm. Over the previous decades, country has experienced extensive and severe water deficit with a return frequency of every 5–7 years in some local zones. Its vulnerability to drought is increasing because of reduced per capita water availability, resulting from population increase, climate change and overexploitation as well as quality degradation of the available water resources. The available fresh water per capita in Iran was $\frac{1}{2}$ of the world average in the early years of 1960, but it was reduced to $\frac{1}{3}$ (one third) of the world's related average in 2000. It is expected it will be around $\frac{1}{4}$ of the world's related average in next 20 years. This paper describes the conditions of Iran water resources with insight on precipitation, temperature, observed runoff, renewable water resources and their variations in long-term and present short-term average. In addition, it investigates the impacts of drought occurrence, climate change and human intervention on change of component of water cycle, spatially, for observed runoff at downstream of main river basins. In spite of frequent occurrence of droughts and their severe impacts on water resources, crop yields, environment, social and economy, the lack of strategy and action plan for drought management in the country can be observed.

