

Development of urban river management plan based on sedimentological studies, with examples from Karun and Karkheh

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Abstract

River systems are very important in terms of environment and water supply. Proper use of river resources could play an important role in preserving these valuable resources. In Iran, due to the low average of annual rainfall and the locating of most parts of the country in arid and semi-arid climatic regions, many cities are built along rivers. Since the vital resources of drinking, agriculture, and industry water are provided by these rivers, the importance of preserving and protecting them in the health of society is undeniable. Over the past two decades, the rivers base level and consequently groundwater level have dropped significantly due to several consecutive years of drought and the construction of numerous dams. Due to the drop in rivers base levels, parts of the riverbeds and floodplains have been occupied by the urban constructions, and the government have sometimes been involved in this attack and have issued permissions for it. In this study, as example, Karun and Karkheh rivers and the changes made in the river systems have been studied. During the last 4 years, however, the trend of rainfall in the western and southwestern regions of the country has changed due to the climate changes of the planet Earth with rains above the long-term average and in the sizes and form of floods. The retrogradation of the ice sheets in the Arctic seems to have caused the rainy masses of the Atlantic to deviate by several degrees, and these rainy masses cross the African continent and the Saudi region and reach Iran. In the past, most of these rainy masses went to Pakistan and India, causing heavy rains and floods there. The collision of these Atlantic masses with the Mediterranean masses and frontogenesis has created large cloud masses swirls over the Zagros mountains and caused torrential rains in the west and southwest of the Iran. In this study, the effects of such rainfall on the conditions of Karun and Karkheh rivers in recent years have been investigated. In these considerations, it was found that the behavior of these rivers has changed in such a way that the strategies to deal with them should be changed, especially in urban areas. The main change in the strategy is to help withstand sediment load and river water volume during floods.

Keywords: *River, sedimentology, program development, environment.*