AGU FALL MEETING
San Francisco | 14 – 18 December 2015

H43E-1546: Anthropogenic impacts on hydrology of Karkheh River Basin

Thursday, 17 December 2015
13:40 - 18:00
Moscone South - Poster Hall

- ePoster - Samaneh-AGU.pdf

The Karkheh River Basin (KRB) in southwest Iran is a key region for agriculture and energy production. KRB has high human-induced water demand and suffers from low water productivity. The future of the KRB and its growth clearly relies on sustainable water resources and hence, requires a holistic, basin-wide management and monitoring of natural resources (water, soil, vegetation, livestock, etc.). The KRB has dry regions in which water scarcity is a major challenge. In this study, we investigate changes in the hydrology of the basin during the past three decades including human-induced alterations of the system. We evaluate climatic variability, agricultural water use, land cover change and agriculture production. In this reaserch, we have developed a simple indicator for quantifying human influence on the hydrologic cycle. The results show that KRB's hydrology is significantly dominated by human activities. The anthropogenic water demand has increased substantially caused by growth in agriculture industry. In fact, the main reason for water scarcity in the region appears to be due to the increased anthropogenic water demand resulting from substantial socio-economic growth in the past three decades. Our results show that continued growth in the region is not sustainable without considering major changes in water use efficiency, land cover management and water productivity.

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