



## **Tigris flow regime and possible impact of Ilisu dam on the monthly flow regime**

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The Tigris river with a basin area of approximately 221,000 km<sup>2</sup> and 1,800 km of length is the second longest river in Western Asia. Tigris river's is a Transboundary rivers basin which spans over four riparian countries Iran 19%, Iraq 56.1%, Syria 0.4% and Turkey 24.5%. Tigris River have been regulated by several dams and diversion projects, mostly in Iraq and Turkey, to irrigate over 4.5 million ha of farmlands inside, and about 150,000 ha outside of the basin. Recently, the Turkish government has planned to construct the Ilisu Dam on the Tigris River in Southeastern Turkey causing concerns in downstream countries. The Ilisu dam will have a huge reservoir capacity (10.1 km<sup>3</sup>) and impounding with considerable impacts on the Tigris flow regime. This will displace upto 700 000 inhabitant, drown unique archaeological sites of the Hasankeyf period and destroy biodiversity. The presented work give a perspective of flow regime alteration in Tigris and it's major tributaries such as Greater Zab (basin area of 25,810 km<sup>2</sup>), Lesser Zab (21,475 km<sup>2</sup>), Al-Adhaim (13,000 km<sup>2</sup>) and Diyala (31,896 km<sup>2</sup>). Then the role of major constructed dams will be assessed. By considering the occurred impact on magnitude, variability and timing of monthly flow regime, the total flow regime impact of dams was quantified and classified into five groups as low, incipient, moderate, severe and drastic. The result shows, by considering the purposes of Ilisu dam, possible Tigris flow regime alteration at Cizre gauge (last Gauge on Tigris before interring to Iraq) will change from low impact in current situation to drastic impact after Ilisu dam construction by significant changes in magnitude, timing and variability of Tigris river flow.