



## **Study of Environmental Flows in Tungabhadra River in Southern India**

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Environmental water requirements, also referred as 'Environmental Flows', are a compromise between water resources development and the maintenance of a river in ecologically acceptable or agreed condition. Dams are often the most significant and direct modifiers of Natural River flows. They are therefore an important starting point to implement environmental flows. Downstream releases from dams are determined by pass water through, over or around the dam. The operating policies and rules determine the amount and timing of releases for environmental flows. Managing environmental water flow is a complex task, because the change of quantity of water occurs as the flow moves downstream. For instance, between a major storage and the places downstream where water is diverted, the quantity of water in a river may be greatly changed from the natural condition and also seasonal pattern of flow may be drastically altered. Further downstream, where a large proportion of the river's water has been removed for human uses is likely to be reduced by the overall flow levels. This paper attempts to present the existing conditions of the water flow from the Tungabhadra River, and water requirements for the better management of a downstream ecosystem, based on both the field investigations and desk study. A dam across the river Tungabhadra has reduced the natural flow in the main river. It has altered the socio economic condition of the downstream dependent population of the River. The downstream of the river for 100 km has shrunken in its river bed. The lively support has gradually comedown during last decade leading in shifting of the occupation and migration of the community has commonly registered during the study.

**Key Words:** Environmental flows, Ecosystem services, downstream ecosystem, Tungabhadra River, water for environment