# Comparative study of low flows in the middle mountain catchments of Nepal

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## ABSTRACT:

In the middle mountain areas of the Hindu-Kush Himalyan region population growth is rapid. Agricultural intensification increasing and causing more water demand for more crop productions. Shortages of water, mainly for irrigation and secondarily for drinking found to be the major issues in the area. During the monsoon season there is a lot of rain and water everywhere but most of the remaining time is dry causing scarcity of water. The People and Resource Dynamics Project (PARDYP), a regional research for development watershed management project has been operating in five catchments across the Hindu-Kush Himalayas (HKH). Jhikhu Khola catchment (JKC) and Yarsha Khola catchment (YKC) are two PARDYP study catchments in Nepal's middle mountain area. The main aim of this study is to analyze and compare the low flow characteristics of the two catchments for better understanding and future water management. Different low flow parameters including rainfall, discharge, runoff, low flow frequencies, base flow index and low flow index were analyzed and compared. Rainfall is the main factor of water source in the middle mountain areas which plays a major role in the flow characteristics. The low flow characteristics were found good in YKC comparatively. Between two catchments YKC has good water potential than JKC. JKC has limited potential for developing and poses more challenge for managing water resources.

*Key words:* Low flow, middle mountains, Hindu-Kush Himalaya, Jhikhu Khola, Yarsha Khola