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المستودع الرقمي للمدرسة العليا للري



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The Impact of Human Activities on Flood Trends in the Semi-Arid Climate of Cheliff Basin, Algeria

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**Abstract:**

Algeria shares similarities with other countries of the world facing destructive floods. The need to understand changes in the intensity, frequency and severity of floods is critical for reducing significant social, economic, and environmental implications. In this study, flood indicators derived from annual maximum series and peak over threshold series were analyzed using Mann–Kendall trend analysis and linear regression analysis. Several studies in northern Algeria found decreasing trends of annual precipitation. However, precipitation could not explain most flood indicator trends found in our study. A general decreasing annual and seasonal trends of flood indicators were detected in the wadi Cheliff Basin. This result is partly due to decreasing precipitation and partly due to the construction of dams which have significantly altered flood processes. Increasing trends were found in the Mina Basin, which could be explained as the result of increases in urban area and decrease in soil moisture content before the occurrence of floods. Conversely, there was no dependency demonstrated between significant changes and spatial scales for these flood indicators. That is to say, human impacts and climate variability likely constitute the main factors causing increasing or decreasing flood trends.

**Key words:** Flood indicators ; Trend analysis ; Cheliff Basin ; Human impacts

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2-[https://www.researchgate.net/profile/G-Thomas-Lavanchy/publication/341570501\\_The\\_Impact\\_of\\_Human\\_Activities\\_on\\_Flood\\_Trends\\_in\\_the\\_Semi-](https://www.researchgate.net/profile/G-Thomas-Lavanchy/publication/341570501_The_Impact_of_Human_Activities_on_Flood_Trends_in_the_Semi-Arid_Climate_of_Cheliff_Basin_Algeria/links/5f03de1d458515505091a5ca/The-Impact-of-Human-Activities-on-Flood-Trends-in-the-Semi-Arid-Climate-of-Cheliff-Basin-Algeria.pdf)

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