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CLIMATE VARIABILITY AND SURFACE WATER DEPARTURE AT THE CATCHMENT OF THE RIVER ZOU IN BENIN (WEST AFRICA)

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ABSTRACT

The effects of climate on water resources can lead to one of the serious crises that humanity will face in the coming decades if the trend is not reversed in terms of current climate parameters. This study examines the effects of current climate conditions on the hydrological functioning of the river zou catchment in Benin. The rainfall, hydrological and thermometric data collected at the meteo-Benin agency and at the hydrology department of the General Directorate of Water over the period (1965-2015) made it possible not only to analyze the current rainfall trends, but also to appreciate the hydrological behavior of this watershed. In order to establish a link between the nature of the geological substratum and the availability of surface water in the study area, the temporal evolution of the recession coefficients and the dry period of the water course were estimated at from the law of Maillet.

The analysis of the results shows that the catchment area of the Zou River is characterized by a significant fluctuation of its climatic parameters in recent years. The latter is illustrated by the observed negative rainfall anomalies of the 1970s, 1980s and a thermometric warming trend in the catchment. Between 1965 and 2010, mean annual temperatures increased by approximately 3.77 ° C and 1.71 ° C (Tmax and Tmin to Savè) and 2.04 ° C and 1.19 ° C respectively. (Tmax and Tmin to Bohicon). The aforementioned factors associated with the nature of geological formations have a differential influence on the availability of surface water in the basin. Indeed, the dry-off coefficient is on average 0.019 d-1, duration of about 112 days at Domè (more spread over time) which is on sedimentary formations, while it is 0.046 d-1 45 days to Atcherigbe (faster) which is on the (plinth).

***KEYWORDS**: Zou River Catchment (BVRZ), Climate Variability, Coefficients Recession, Surface Water Resources*

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