Trend analysis, frequency of Sudanese system's entry to Iran (Case study: south and southwest catchments of the country)

ShapourGhazipour[۱]
Hassan Lashkari[۲*]
ManuchehrFarajzadeh[۳]

۱. Ph.D. Student of Geography, Science and Research Branch, Islamic Azad University, Tehran, Iran.
۲. Associate Professor, Department of Geography, Shahid Beheshti University, Tehran, Iran.
۳. Professor, Department of Geography, Tarbiat Modares University, Tehran, Iran.

***Corresponding author:**
dr_lashkari٦١@yahoo.com

Received date: ۲۰۲۰,۰۳,۰۸
Reception date: ۲۰۲۰,۰٦,۲٥

Abstract

The Sudanese system is the most important system for supplying rainfall and water accumulation in the southern catchments. In the years when suitable synoptic conditions are provided for strengthening and expanding this system on Iran, not only the southern part of the country but also most parts of the country are associated with good rainfall. Therefore, increasing or decreasing the number of Sudanese systems entering the region is very important and vital in theEco-biological structure of wetlandsand water balance of the most water-rich basins in the south and southwest of the country. In the present study, the aim is to study the historical trend of the entry of this system (۱۹۹٥-۲۰۱۷) into this part of the country. Therefore, after validating the daily precipitation data from ۱۹۹٥ to ۲۰۱۷ of selected stations, precipitation systems of independent Sudanese origin based on selected criteria from the three main routes of Hormozgan, Bushehr and Khuzestan (by year, month and duration) are identified and used. From the statistical indicators of the best fit line, Mann-Kendall and Sen's slope estimator, their time changes at the confidence level of ۰,۹٥ were examined and analyzed. The results showed;Despite the trend and slope of decreasing changes in the frequency of entry of Sudanese systems, but due to the lack of significant trends, the frequency of entry of Sudanese systems in all three routes is stable, and lacks a trend that can be attributed to climate change.However, the period of continuous rainfall of Sudanese systems in all three routes is short and generally in the form of ۱ to ۳ day systems and rarely their period of activity is ٥ days or more.Therefore, the scarcity and nature of the showers and short-term precipitation of the Sudanese systems should still be accepted as a principle and in the future we should expect the occurrence of droughts and heavy and torrential rains from the Sudanese system.As a result, the sustainability of aquatic ecosystems, wetlands and water basins in the south and southwest of the country will be fragile in the future.

Keywords: Trend, Sudanese system, Catchment area, South and southwest of Iran.

[Downloaded from jweb.ahvaz.iau.ir on 2026-11-26]