

Linking perception and data: Unveiling the rising climate risks for pastoralists in the Koh-e-Suleiman range

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Introduction

- Climate change has significant local impacts. In Pakistan's Koh-e-Suleiman range, Baloch pastoralists traditionally managed their environment based on knowledge passed down since generations (Fig. 1).
- Recent climate shifts are disrupting this system.

This study examines climate trends, how pastoralists perceive climate change, and how they react to its threats.



Fig. 1: A pastoralist and his herd in Koh-e-Suleiman range

Material & Methods

Location: Koh-e-Suleiman range, a central mountainous region of Pakistan (Fig. 2).

199 pastoralists of three tribes chosen randomly across 6 sites in the study area and interviewed face-to-face.

Metrological data of 4 sites compiled from NASA Power data (1983-2022). The poster depicts that data for the study site *Zain*.

Research period: Oct. 2023 to Jan. 2024

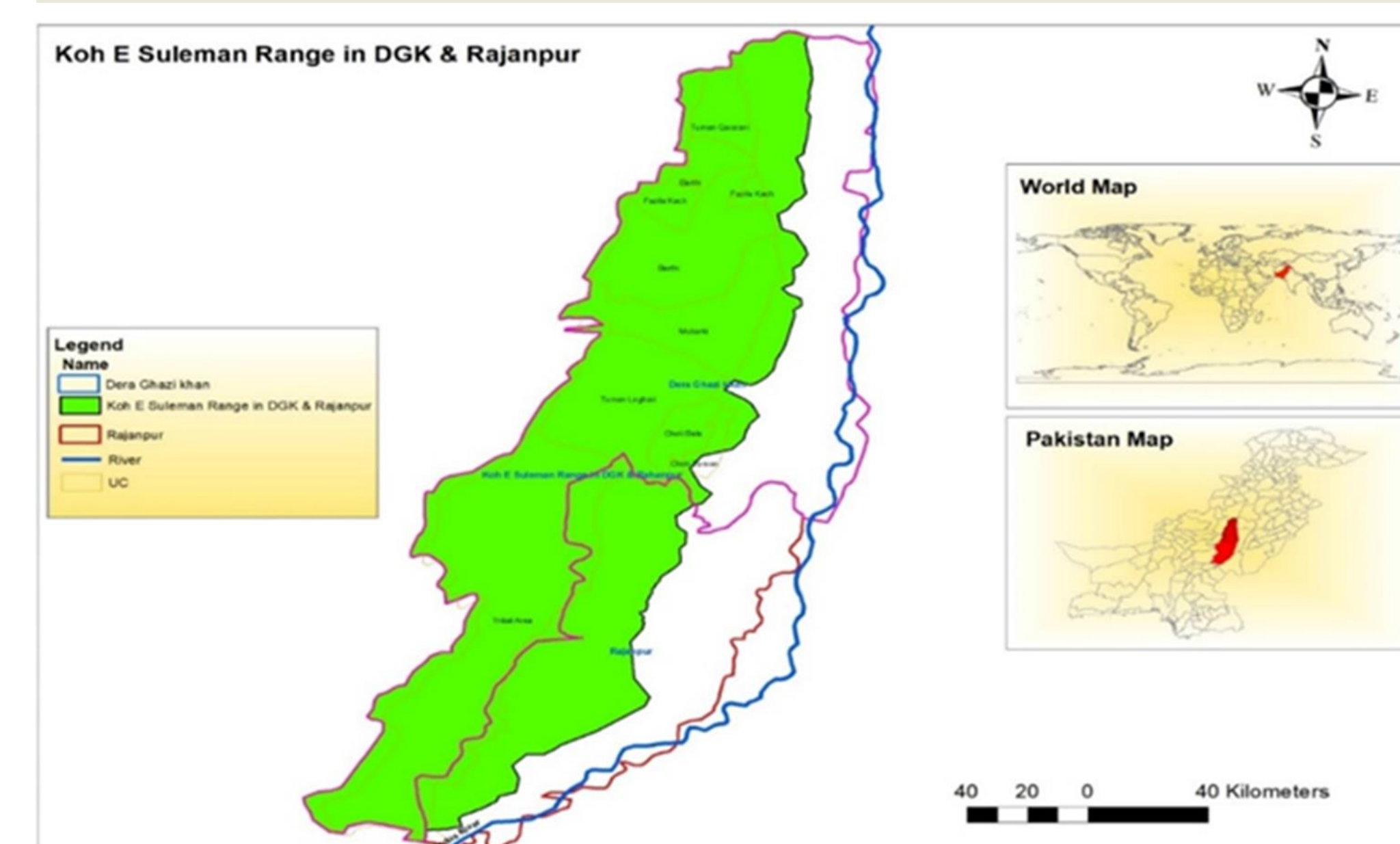


Fig. 2: Koh-e-Suleiman range (left) and its location at larger scale (right)

Results

- Pastoralists' perceptions of climate change phenomena (Fig. 3) align closely with meteorological information on general changes in average temperature (Fig. 4 & 5) and rainfall (Fig. 6 & 7).
- Monthly mean temperature shifts (Fig. 5) are altering rainfall patterns and intensities (Fig. 7), leading to more frequent extreme floods and prolonged droughts in the Koh-e-Suleiman range (Fig. 8).

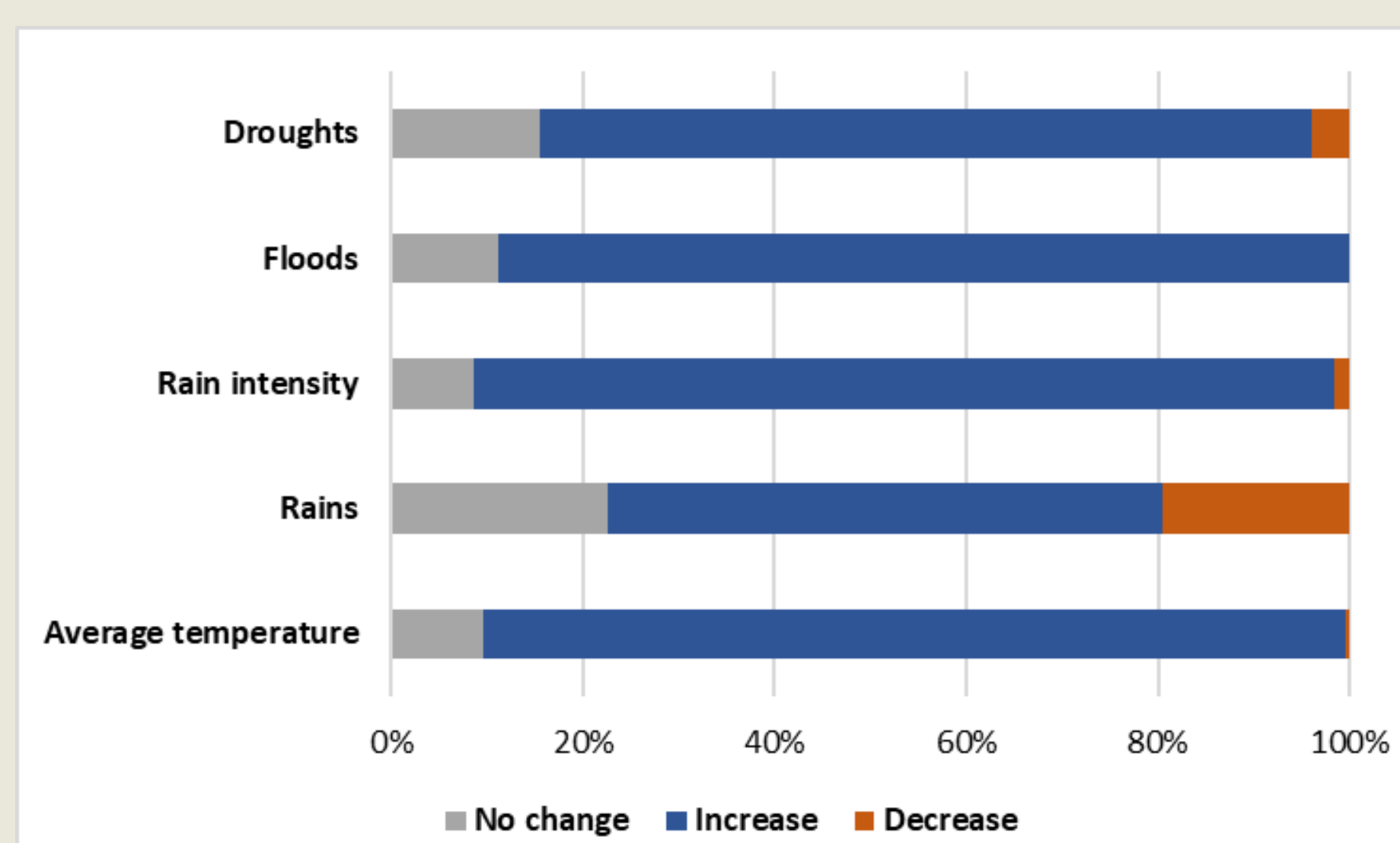


Fig. 3: Pastoralists (n=199) perceptions of climatic changes

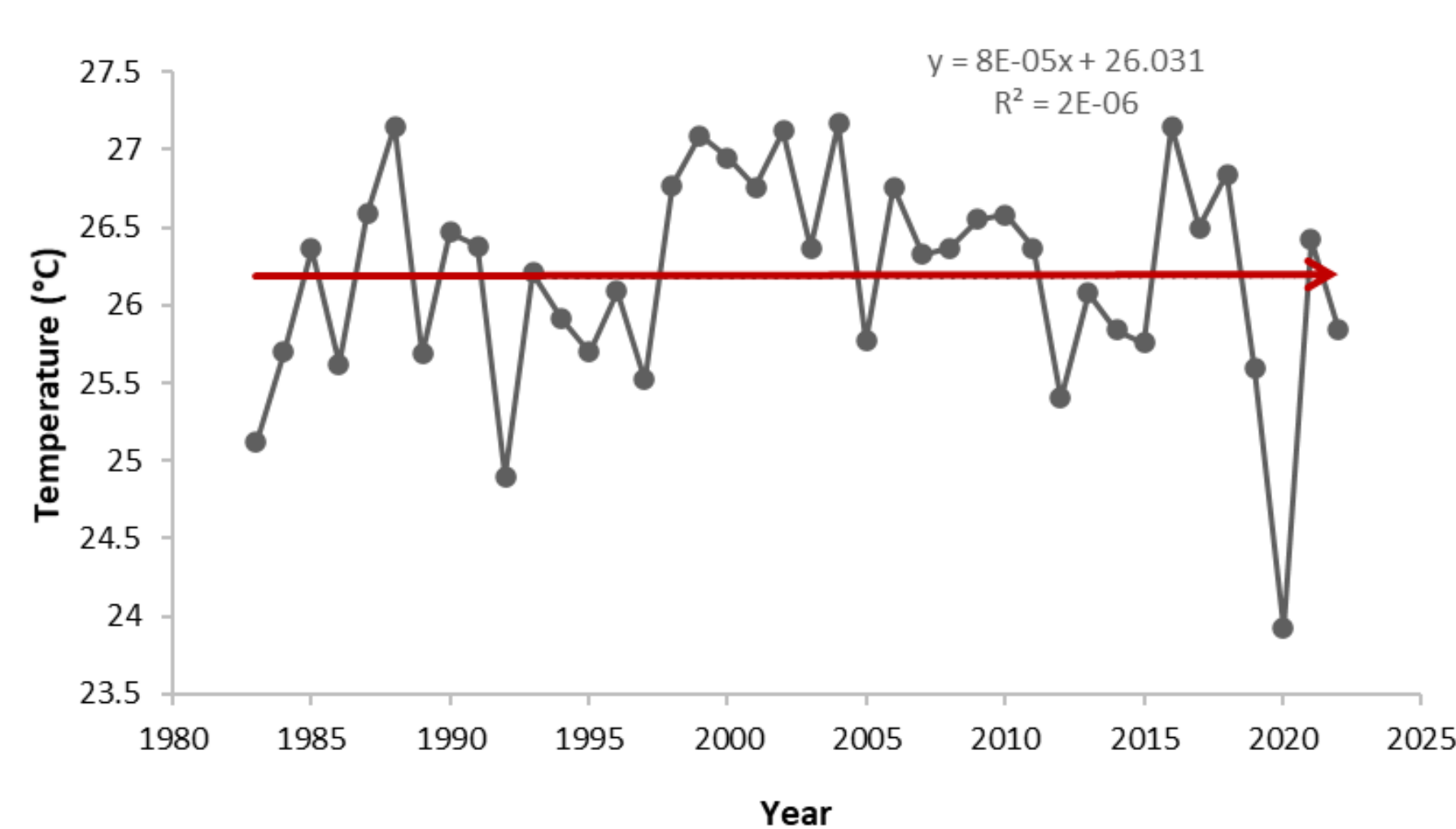


Fig. 4: Mean annual temperature trend 1983-2022

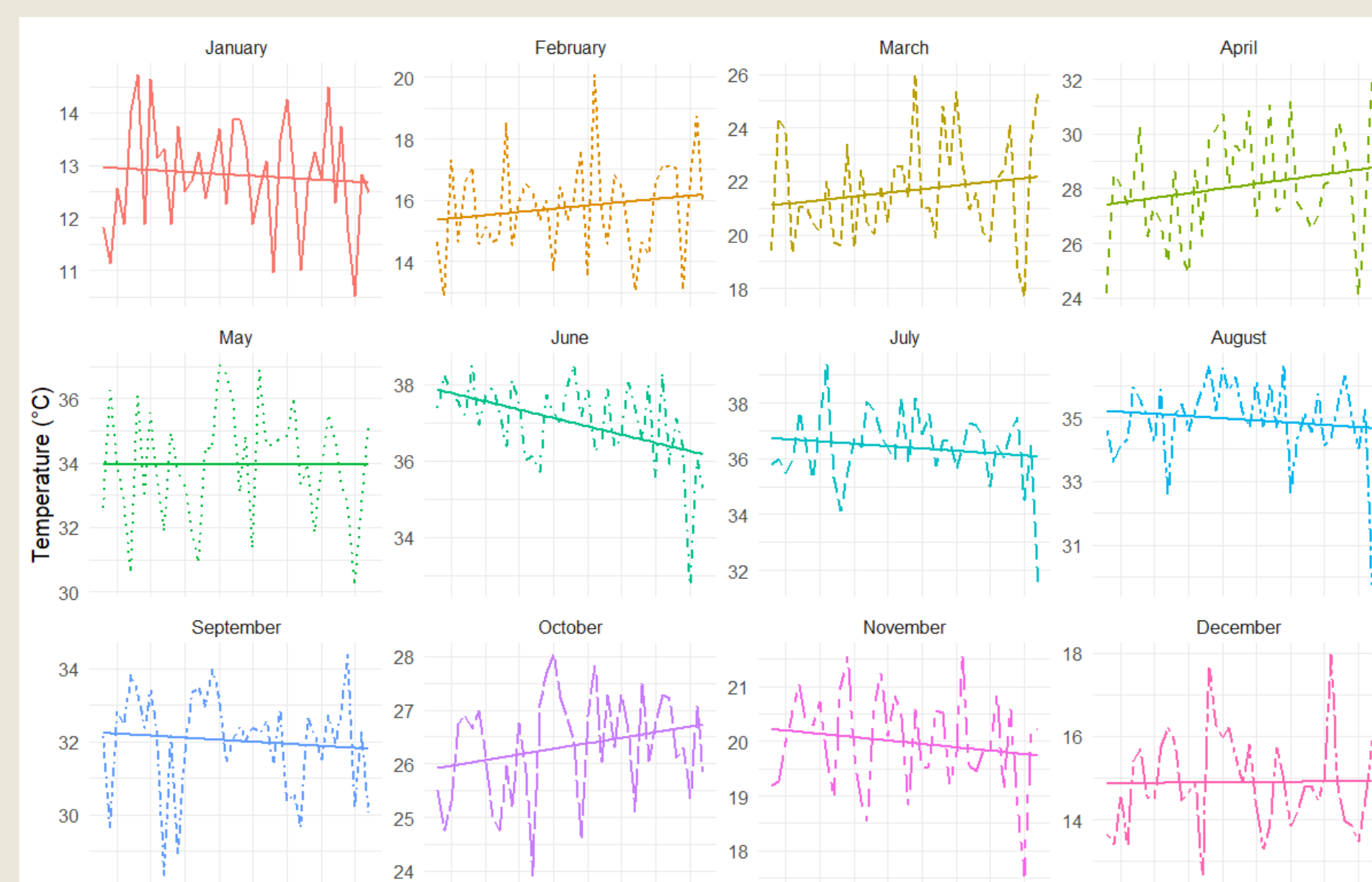


Fig. 5: Monthly mean temperature trend 1983-2022

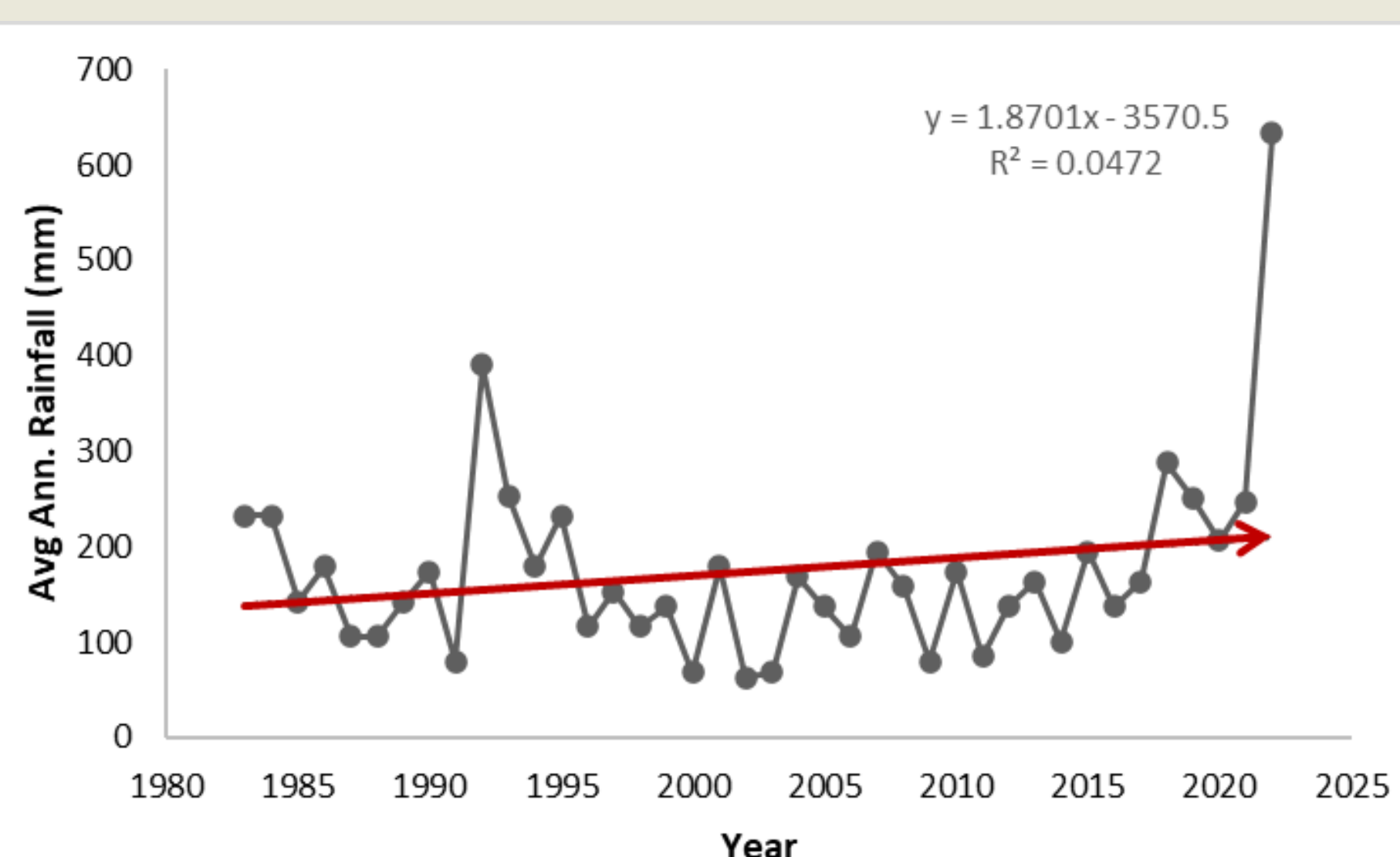


Fig. 6: Annual rainfall trend 1983-2022



Fig. 7: Monthly rainfall trend 1983-2022

Highlights

- Extreme winter droughts and extreme wet monsoon seasons severely impact livestock health by increasing disease prevalence and mortality rates.
- Herd migration, rainwater harvesting and fodder purchase are adaptation strategies in winter.
- Pastoralists request drought tolerant fodder varieties, veterinary services and flood early warning systems to better cope with climate extremes.

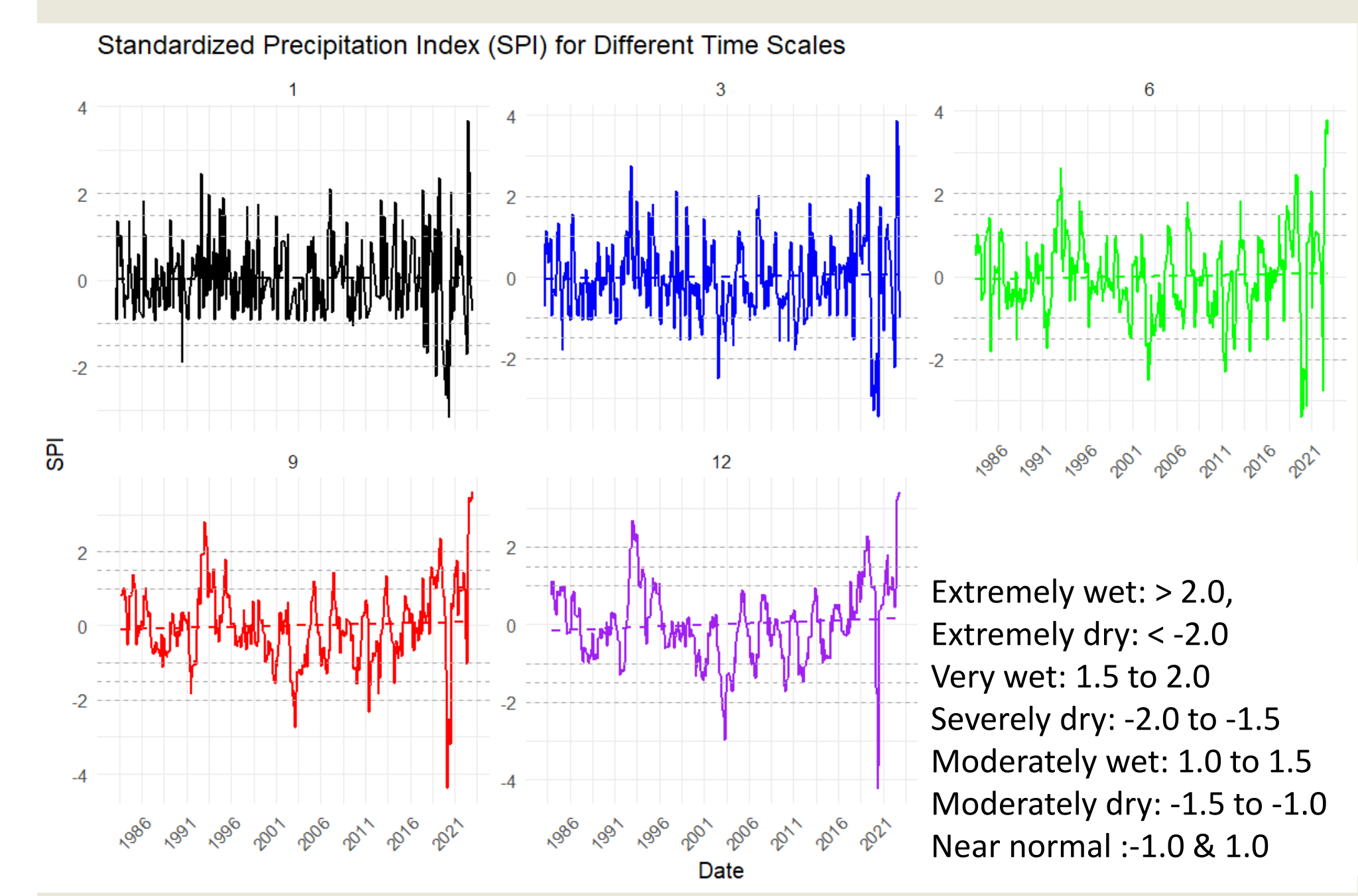


Fig. 8: Precipitation trends 1983-2022 based on 1, 3, 6, 9 and 12-month standardized precipitation index (SPI) to highlight increasing floods (>2) and droughts (<-1.5)

