

Impact of drought conditions on food security in the Sahelian region of West Africa

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Climatematch
Academy

Introduction

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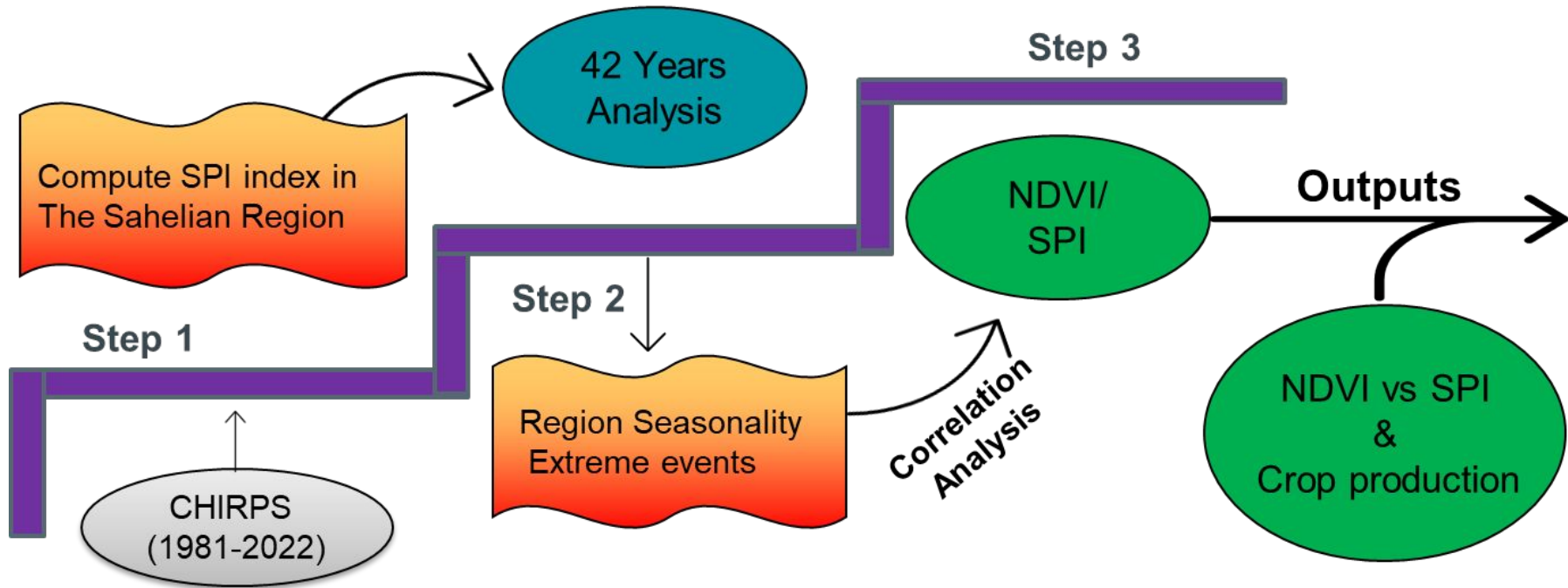
West African Sahelian Region

- High population growth/poverty
- Land degradations
- Dependence on rainfed agriculture
- highly vulnerable to climate risks.



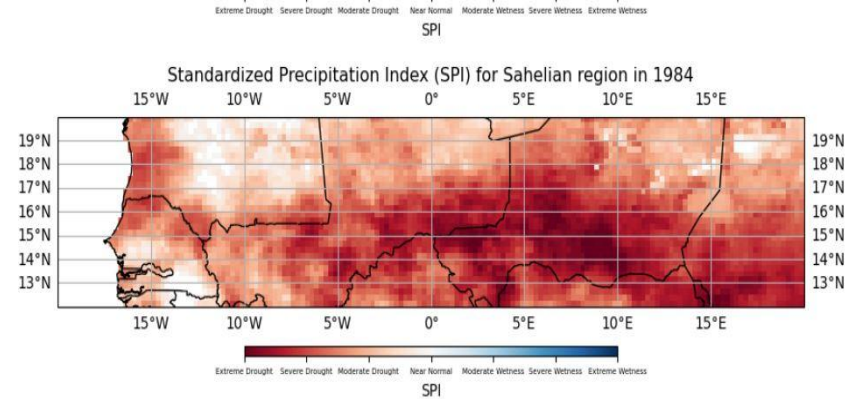
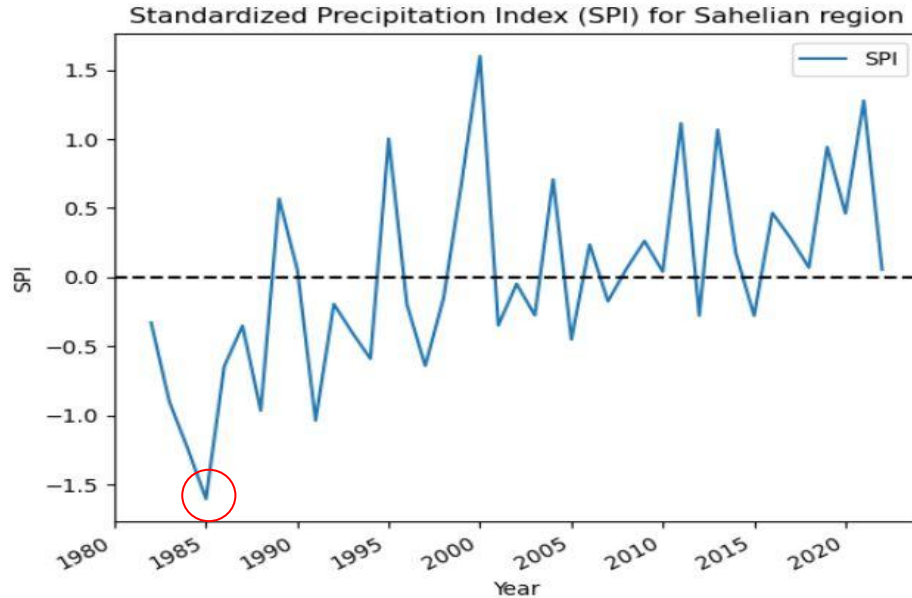
Credited to: [UNHCR, 2022](#)

Methodology: Our approach!



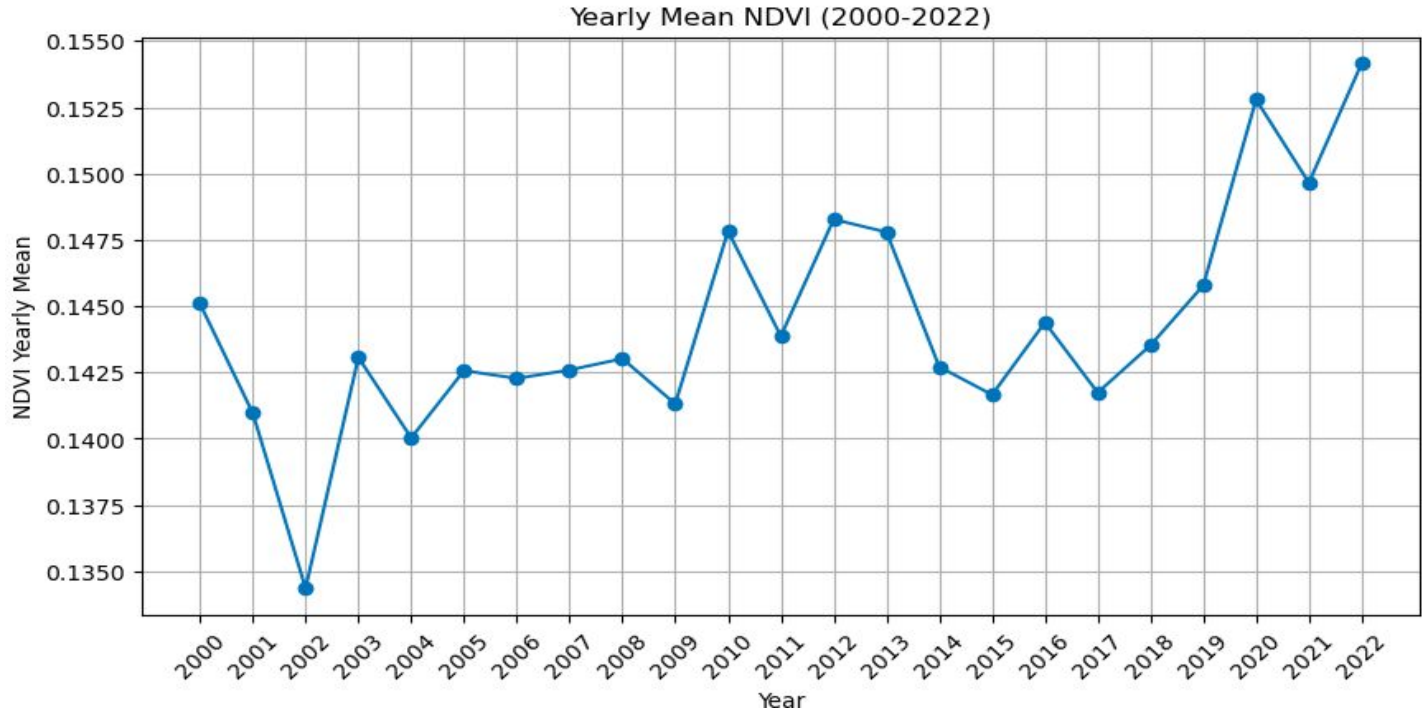
- Standardized Precipitation Index (SPI) from 1981-2022 over Sahelian region of West Africa

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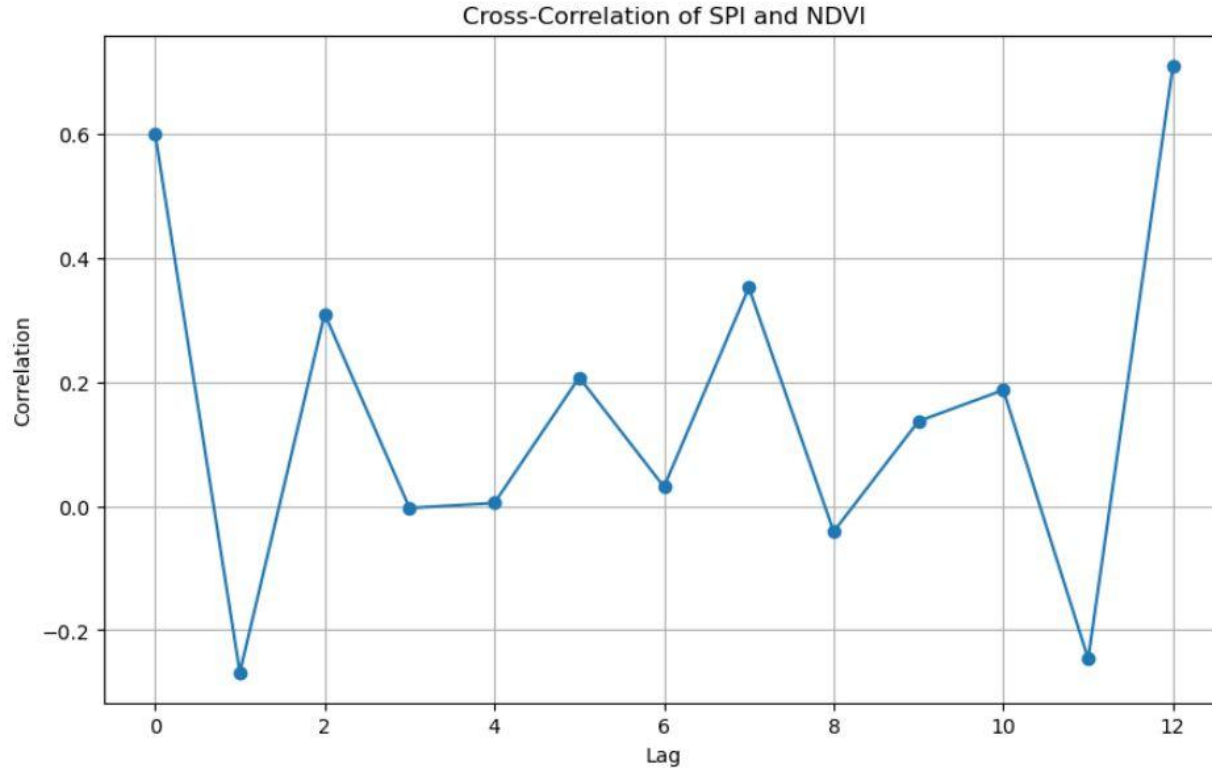
-Normalized Difference Vegetation Index (NDVI) from 2000-2022 over Sahelian region of West Africa

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- Cross-correlation between SPI and NDVI

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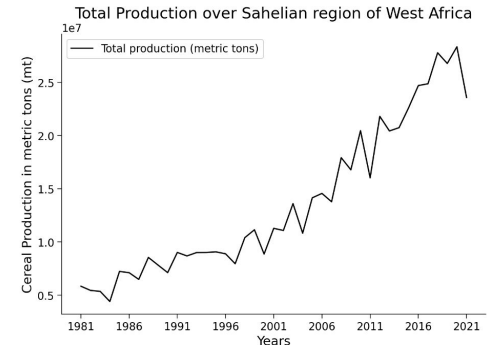


An increase in SPI is generally followed by an increase in NDVI after 12 periods



Conclusion & Future Outlook

- Extreme events varies spatially and temporally across the regions with a high vulnerability in the eastern part of region.
- SPI correlated positively with vegetation cover in the region (Trends with cereal production).
- Assessing the role of other parameters: ET, soil moisture, runoff, SST gradients and their relative contributions to hydrologic extremes.



References

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Chris, Funk., Pete, Peterson., Martin, Landsfeld., Diego, Pedreros., James, P., Verdin., Shraddhanand, Shukla., Gregory, Husak., James, Rowland., Laura, Harrison., Andrew, Hoell., Joel, Michaelsen. (2015). The climate hazards infrared precipitation with stations--a new environmental record for monitoring extremes.. Scientific Data, 2(1):150066-150066. doi: 10.1038/SDATA.2015.66

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THANK YOU FOR LISTENING

