A spatiotemporal assessment of the high-resolution CHIRPS rainfall dataset over the vegetation in Nepal and Sri Lanka Region

Climatematch Academy

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Content

- Scientific background
- Knowledge gap
- Hypothesis
- Analyses and the results
- The potential significance and societal impact of the work.

Scientific background

- **Extreme precipitation** significantly impact **ecosystem**
- The scarcity and unreliability of station data make it difficult to study extreme events
- CHIRPS data provide **potential alternative to station data**

The knowledge gap

Less is known about how extreme precipitation events affect vegetation patterns in Nepal and Sri Lanka

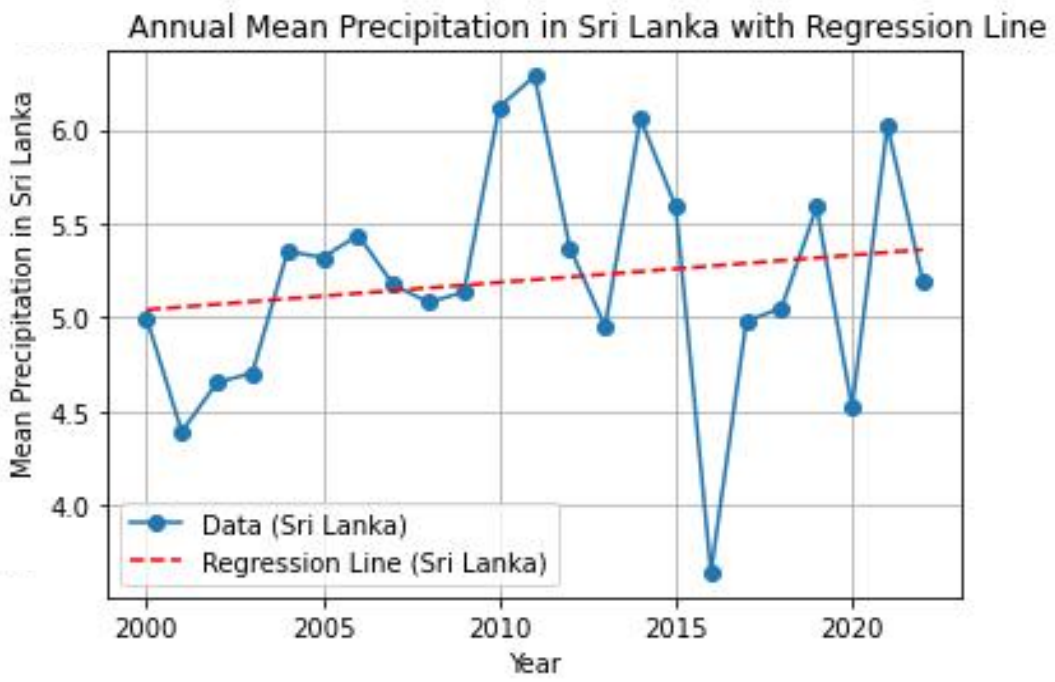
The hypothesis

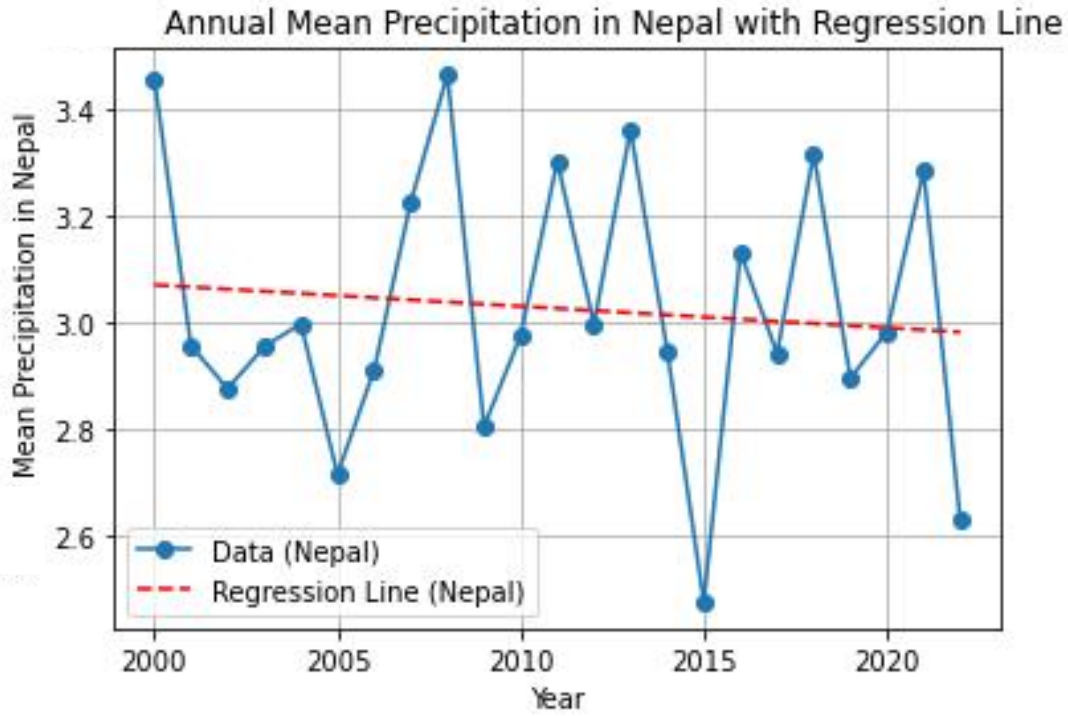
There is a spatio-temporal relationship between precipitation and vegetation patterns in Nepal and Sri Lanka.

Methods

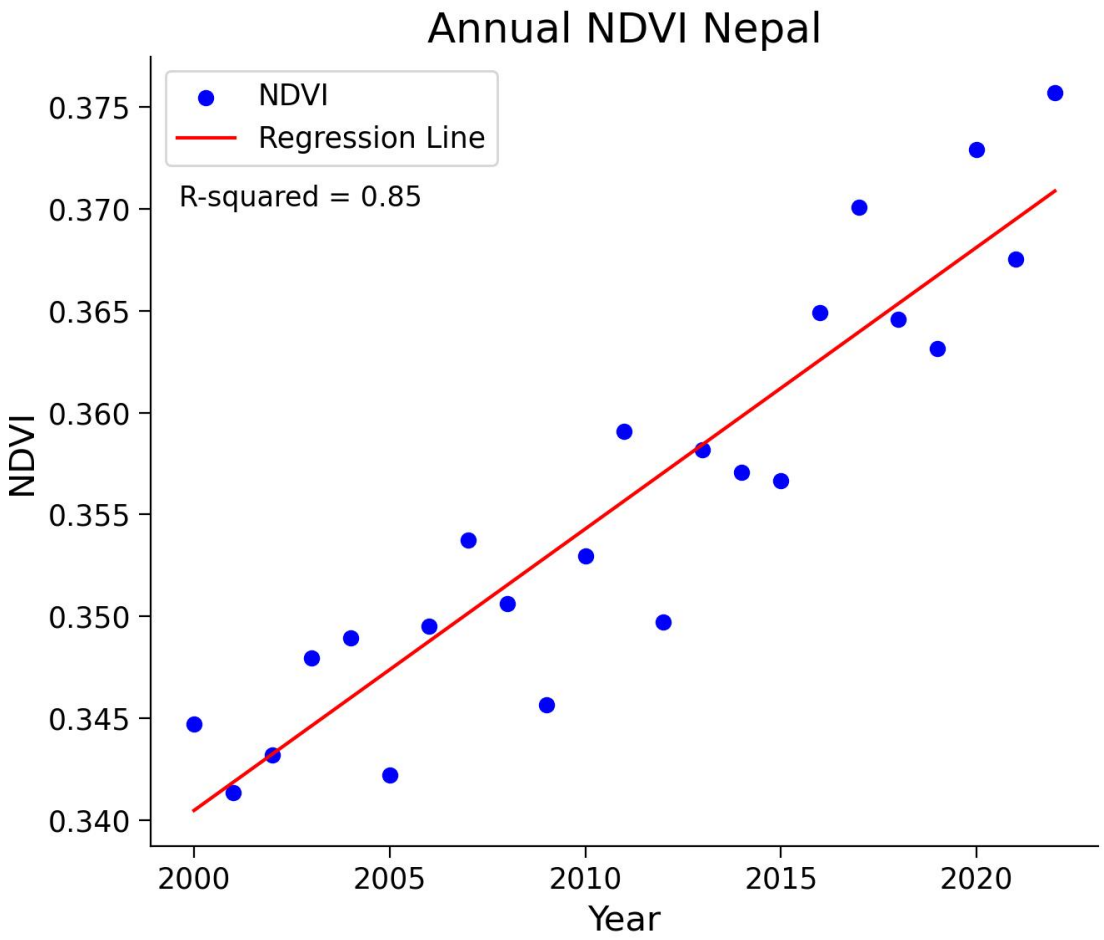
- Daily precipitation (CHIRPS, 0.25 degrees), vegetation Index (MODIS NDVI, 250 m)
- Statistical analyses e.g., measure of central tendencies (mean, SD), linear regression, were performed to study the relationship between precipitation and NDVI
- Precipitation indices i.e., CWD and CDD were used to describe the extreme events

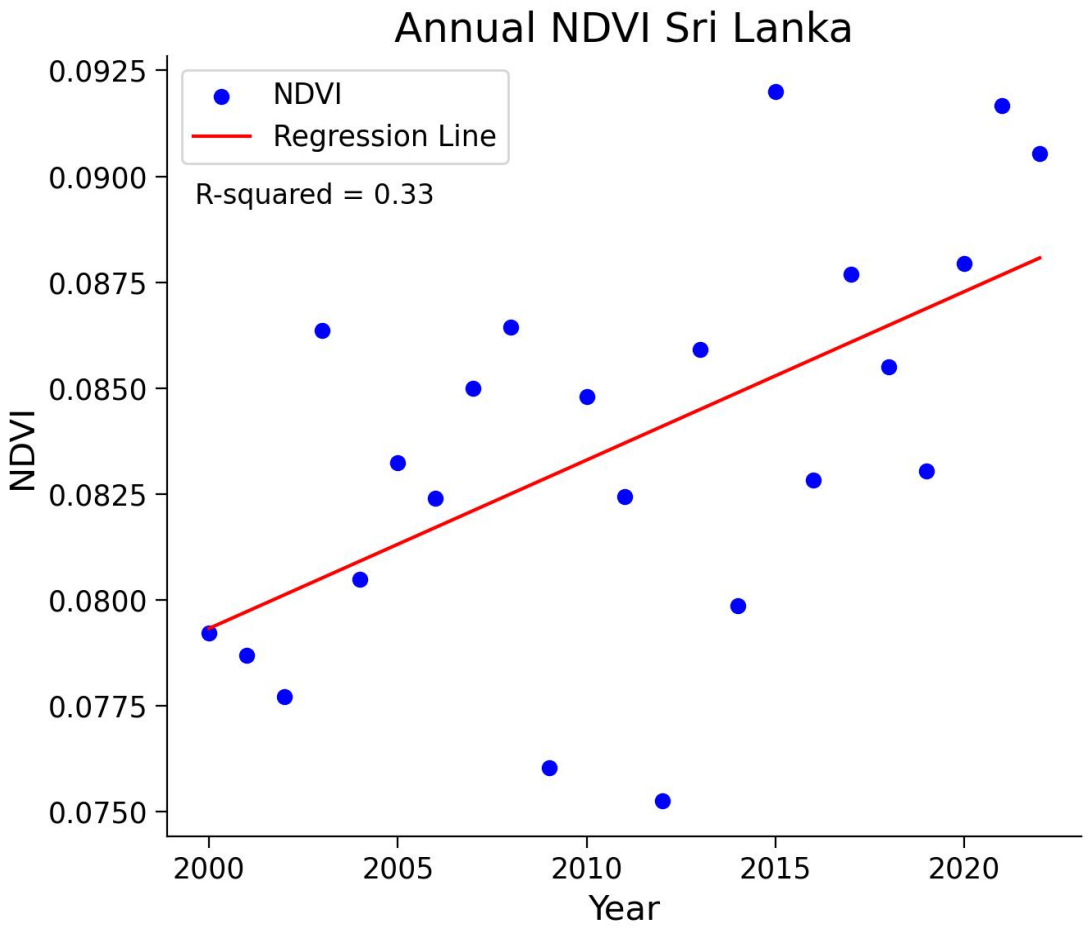
Annual Mean Precipitation





Vegetation index: NDVI





Potential significance and societal impact of the work

- Improvement in prediction of impact of EPE,
- Improvement in preparation for the EPE,
- Improvement in mitigation of impacts of EPE,
- Significant data for forestry, improvement in restoration of vegetation after EPE.

Take Home Message and Next Steps

Potential spatiotemporal relationship between precipitation and vegetation in Sri Lanka; no trends observed for Nepal

Next Steps:

- Conduct more statistical analyses e.g., correlation analysis between extreme precipitation events and NDVI
- Look for other potential determinants for vegetation patterns or distribution in the study areas