

## **Spatio - temporal changes in NDVI and rainfall over Western Rajasthan and Gujarat region of India**

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### **ABSTRACT**

This study examines the MODIS time series NDVI datasets to detect greenness regeneration over Western Rajasthan and the Gujarat region of India. Time series analysis was applied to 17-years (2000-2016). MODIS NDVI satellite data product. Rainfall data for the same period were also analyzed to understand its impact over vegetation. NDVI time series datasets of MODIS 16-day composite proved sufficient for deriving statistically significant trend values for identifying areas of change in vegetation cover. Areas showing positive changes in NDVI trend was clearly correlated with areas which were brought under irrigational network over these areas, indicating an increase in vegetation, due to availability of water supply. Trends in NDVI were also compared with the trends in rainfall over the selected locations from Gujarat and Western Rajasthan. NDVI was positively correlated with the rainfall in both the regions. The NDVI time series trend analysis successfully detected the changes in greenness regeneration areas in Gujarat and western Rajasthan.

**Keywords:** Time Series, greenness, regeneration, NDVI, MODIS