

NOTABLE NOVEMBER- GEOGRAPHICAL BEHAVIOUR OF 2015 AND 2021 FLOODING IN TAMIL NADU (INDIA)

Prof. (Dr.) Priyanka Puri*

*Professor,

Dept. of Geography,

Miranda House, University of Delhi,

Delhi, INDIA

Email id: priyanka.puri@mirandahouse.ac.in

DOI: 10.5958/2249-7137.2024.00027.X

ABSTRACT

The unprecedented monsoonal rainfall of 2021 and subsequent flooding in Tamil Nadu has initiated a reminiscence of a similar abnormal event of 2015. The month of November observed the maximum input of rainfall during both years. The unprecedented rainfall and flooding have sparked debates ranging from climate change to urbanization. The current study is a spatial examination of rainfall in the state for November of 2015 and 2021. It also tends to observe this rainfall behavior in the backdrop of existing and altering land uses. It has been observed that this unprecedented rainfall exhibited a correlation with urbanization with a geographical concentration of the phenomena in the coastal, northeastern part of the state in both years. Such a regional level analysis can help identify vulnerability in the light of climate change and extreme event concerns.

KEYWORDS: Tamil Nadu, Monsoon, Rainfall, Land Use, CHIRPS, Urban.

REFERENCES-

1. Aiyappan, A. Retrieved 2021, from <https://www.britannica.com:https://www.britannica.com/place/Tamil-Nadu>.
 2. Boyaj, A., Prasad, D. H., Hoteit, I., & Karumuri, A. 2020, May 18. Increasing Heavy Rainfall Events in South India due to Changing Land Use Land over. *Quarterly Journal of the Royal Meteorological Society*, DOI: 10.1002/qj.3826.
 3. Bureau, T. N. 2015, December 02. Retrieved 2021, from <https://www.thehindu.com:https://www.thehindu.com/news/national/tamil-nadu/north-tn-bears-the-brunt-of-unrelenting-rain/article7938269.ece>.
 4. Centre, Regional Meteorological. Chennai. 2021, November. Retrieved 2021, from <http://www.imdchennai.gov.in: http://www.imdchennai.gov.in/swweb.pdf>.
 5. Chandrababu, D. 2021, November 29. Retrieved 2021, from <https://www.hindustantimes.com:https://www.hindustantimes.com/indianews/chennai-logs-wettest-november-with-record-rainfall-of-882-4-mm101638124461735>. Html.
 6. Davies, R. 2021, November 10. Retrieved 2021, from <https://floodlist.com/asia/india-floods-tamil-nadu-chennai-november-2021>.
-

7. Desk, I. T. 2021, November 8. a. Retrieved December 2021, from <https://www.indiatoday.in:https://www.indiatoday.in/science/story/chennai-rains-imd-weather-arabian-sea-northeast-monsoon-1874258-2021-11-08>.
8. Desk, T. H. 2017, December 02. Retrieved 2021, from <https://www.thehindu.com:https://www.thehindu.com/news/cities/chennai/revisiting-the-2015-floods-in-chennai-images-from-the-hindu/article21248895.ece>.
9. Desk, T. H. 2021, November 26. b. Retrieved 2021, from <https://www.thehindu.com:https://www.thehindu.com/news/national/tamil-nadu/tamil-nadu-rains-live-updates-november-26-2021/article37695950>.
10. DHNS. 2015, November 28. Retrieved 2021, from <https://www.deccanherald.com:https://www.deccanherald.com/content/514405/rain-threat-tn-due-fresh.html>.
11. Engine, C. Retrieved 2021, from <https://app.climateengine.com:https://app.climateengine.com/climateEngine>.
12. Engine, G. E. (n.d.) Retrieved 2021, from https://code.earthengine.google.com/:https://code.earthengine.google.com/?scriptPath=Examples%3ADatasets%2FESA_WorldCover_v100.
13. Engine, G. E. (n.d.) Retrieved 2021, from https://code.earthengine.google.com/:https://code.earthengine.google.com/?scriptPath=Examples:Datasets/ESA_WorldCover_v100.
14. Express, I. 2016, March 31. Retrieved 2021, from <https://www.newindianexpress.com:https://www.newindianexpress.com/business/2016/mar/31/Chennai-Floods-in-November-Washed-Away-Over-Rs-14000-crore-918382.html>.
15. Express, W. D. 2015, December 08. <https://indianexpress.com/article/india/india-news-india/live-chennai-hit-by-heaviest-rains-in-a-century-normal-life-thrown-out-of-gear/>. Retrieved 2021, from <https://indianexpress.com>.
16. Gandhi, U. (2020, October). Retrieved 2021, from <https://spatialthoughts.com:https://spatialthoughts.com/2020/10/28/rainfall-data-gee/>.
17. Gautham, K. 2021, November 18. Retrieved 2021, from <https://timesofindia.indiatimes.com:https://timesofindia.indiatimes.com/city/chennai/chennai-53-localities-are-flood-prone-but-little-is-done/articleshow/87771144.cms>.
18. Gocic, M., & Trajkovic, S. 2013). Analysis of changes in meteorological variables using Mann-Kendall and Sen's slope estimator statistical tests in Serbia. *Global and Planetary Change*, 100, 172–182.
19. Government. Retrieved 2021, from <https://www.tn.gov.in/>.
20. Halpert, M. S., & Bell, G. D. (1996). https://www.cpc.ncep.noaa.gov/products/assessments/assess_96/india.html#:~:text=The%20Indian%20summer%20monsoon%20typically,of%20their%20total%20annual%20rainfall. Retrieved 2021.

21. Janardhan, A. 2015, December 10. <https://indianexpress.com/article/india/india-news-india/now-chennai-struggles-to-lay-its-dead-to-rest/>. Retrieved 2021, from <https://indianexpress.com>.
22. Janardhan, A. 2016, December 19. Retrieved 2021, from <https://indianexpress.com/article/india/wardah-cyclone-tamil-nadu-chennai-how-chennai-took-on-wardah-4434202/>.
23. Koushik, J., & Sriram, V. 2021, November 12. Retrieved 2021, from <https://indianexpress.com/article/cities/chennai/chennai-heavy-rains-waterlogging-in-pattalam-7617627/>.
24. Krishna, N. 2021, November 20. <https://www.newindianexpress.com/opinions/columns/2021/nov/20/drowning-in-chennai-tamil-nadus-yearly-water-crisis-2385733.html>. Retrieved 2021, from <https://www.newindianexpress.com>.
25. Krishnamurti, T. N. (2015). <https://www.britannica.com/science/Indian-monsoon>. Retrieved 2021.
26. Kuchi, L. V. 2021, November 10. <https://www.firstpost.com/india/action-replay-of-2015-floods-no-lessons-learnt-as-chennai-submerges-again-10124561.html>. Retrieved 2021, from <https://www.firstpost.com>.
27. Lakshmi, K. 2015, November 10. <https://www.thehindu.com/todays-paper/tp-national/tp-tamilnadu/rain-wreaks-havoc-in-coastal-districts/article7863341.ece>. Retrieved 2021, from <https://www.thehindu.com>.
28. Nath, A. 2021, November 28. <https://www.indiatoday.in/india/story/tamil-nadu-flood-like-situation-incessant-rainfall-chennai-ground-report-1881654-2021-11-28>. Retrieved 2021, from <https://www.indiatoday.in>.
29. NDMA. (n.d.). <http://ndma.gov.in/sites/default/files/PDF/Reports/TAMIL-NADU-FLOODS-english.pdf>. Retrieved 2021, from <http://ndma.gov.in>.
30. Network, Times-News. 2021, November 29. Retrieved 2021, from <https://timesofindia.indiatimes.com/city/chennai/rain-floods-tamil-nadu-roads-schools-shut-in-districts/articleshow/87970283.cms>.
31. Now, M. 2021, November 10. Retrieved 2021, from <https://economictimes.indiatimes.com/news/india/chennai-rain-red-alert-in-tamil-nadu-puducherry-schools-shut-in-9-districts/videoshow/87619163.cms>.
32. Pielke, R., Przekurat, A. B., Hiemstra, C. A., Lin, J., Nair, U. S., Niyogi,., & Nobis, T. Eke 2007. An overview of regional land-use and land-cover impacts on rainfall. *Tellus B Chemical and Physical Meteorology*, 59(B), 587-601.
33. PTI. 2015 a., December 05. Retrieved 2021, from <https://www.thehindu.com/news/national/puducherry-over-8900-hectare-area-under-paddy-lost-in-rain/article7951890.ece>.

34. PTI.2015 b., December 10. Retrieved 2021, from <https://www.thehindu.com:https://www.thehindu.com/news/national/tamil-nadu/347-dead-in-rainrelated-incidents-since-oct-1-in-tn/article7969839.ece>.
35. PTI.2018, January 19. Retrieved 2021, from <https://www.thehindubusinessline.com:https://www.thehindubusinessline.com/news/national/northeast-monsoon-claimed-470-lives-in-tamil-nadu-jayalalithaa/article8064661.ece>.
36. Pune, Indian Meteorological Department. 2020, January. Retrieved 2021, from https://imdpune.gov.in:https://imdpune.gov.in/hydrology/rainfall%20variability%20page/tamil_final.pdf.
37. Roy, & Chakravarty, N.2021, March. Retrieved 2021, from https://assets.researchsquare.com/files/rs-265913/v1_covered.pdf?c=1631860184.
38. Sahu, S. N. (2021, December 12) Retrieved 2021, from <https://www.telegraphindia.com:https://www.telegraphindia.com/opinion/gandhi-and-the-anthropocene/cid/1843026>.
39. Sathyanarayana, R. (2015, November 29) Retrieved 2021, from <https://www.deccanherald.com:https://www.deccanherald.com/content/514696/tamil-nadus-deadly-rains-hit.html>.
40. USGS,<https://eros.usgs.gov/>. (n.d.) Retrieved 2021, from <https://eros.usgs.gov/westafrika/mapping-land-use-land-cover>.
41. Vishu, C. R., & Sridharan, R.2016, August. A case study on the impact of Chennai floods: supply chain perspective. *IIIE Industrial Engineering Journal*, IX(8), NA from www.researchgate.net.