



# VULNERABILITY DUE TO NATURAL DISASTERS IN INDIA

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## ABSTRACT

Natural Disasters are catastrophic events that result from any of the Earth's natural phenomena. These can range from floods and hurricanes to tsunamis and earthquakes. In this study we are analysing and calculating the vulnerability of Natural Disasters based on different region of india

## INTRODUCTION

Natural disasters are catastrophic events that occur as a result of natural processes and phenomena such as weather, geological events, and other natural forces. These events can cause serious property damage, loss of life and have significant economic impacts. Examples of natural disasters include earthquakes, hurricanes, tornadoes, floods, landslides, wildfires, droughts, and volcanic eruptions. Natural disasters can strike without warning and often have devastating consequences, especially in areas that are vulnerable or prone to such events. Natural disasters can have significant social, economic and environmental impacts, such as loss of livelihoods, increased poverty and degradation of natural resources. In this project we have calculated the vulnerability of Natural Disaster based on the impact of **Flood, Drought and Cyclone.**

## METHODOLOGY

The number of cyclonic storms and severe cyclonic storms and the total number of cyclones crossing different coastal districts of the India from 1891-2008 have been taken. A district has been considered as cyclone prone if at least one cyclone in the past had passed that district or its neighbouring districts one on its both sides during the time period 1891-2008. These two are not enough to determine the degree of proneness of cyclones, therefore following parameters have been considered too:  
(a) Total number of cyclones crossing the district  
(b) Total no. of severe cyclones crossing the district  
(c) Probable maximum winds (mps) over the district  
(d) Probable maximum storm surge over the district (m)  
Probable maximum precipitation (1 day) in cms over any station in the district

We have collected the flood data from year 2000-2016 of all the states of India based on the parameters:  
- Area affected  
- Population Affected  
- Damages To Crops  
- Damage To Houses  
- Cattle Lost  
- Human Life Lost  
- Damage to Public Utilities

From the values of each parameter of every state of each year we have standardized it from value 0 to 1 and add all the standardized values to get its vulnerability of the state. Then we have plotted the vulnerability graph of each year flood data based on the calculated index value.

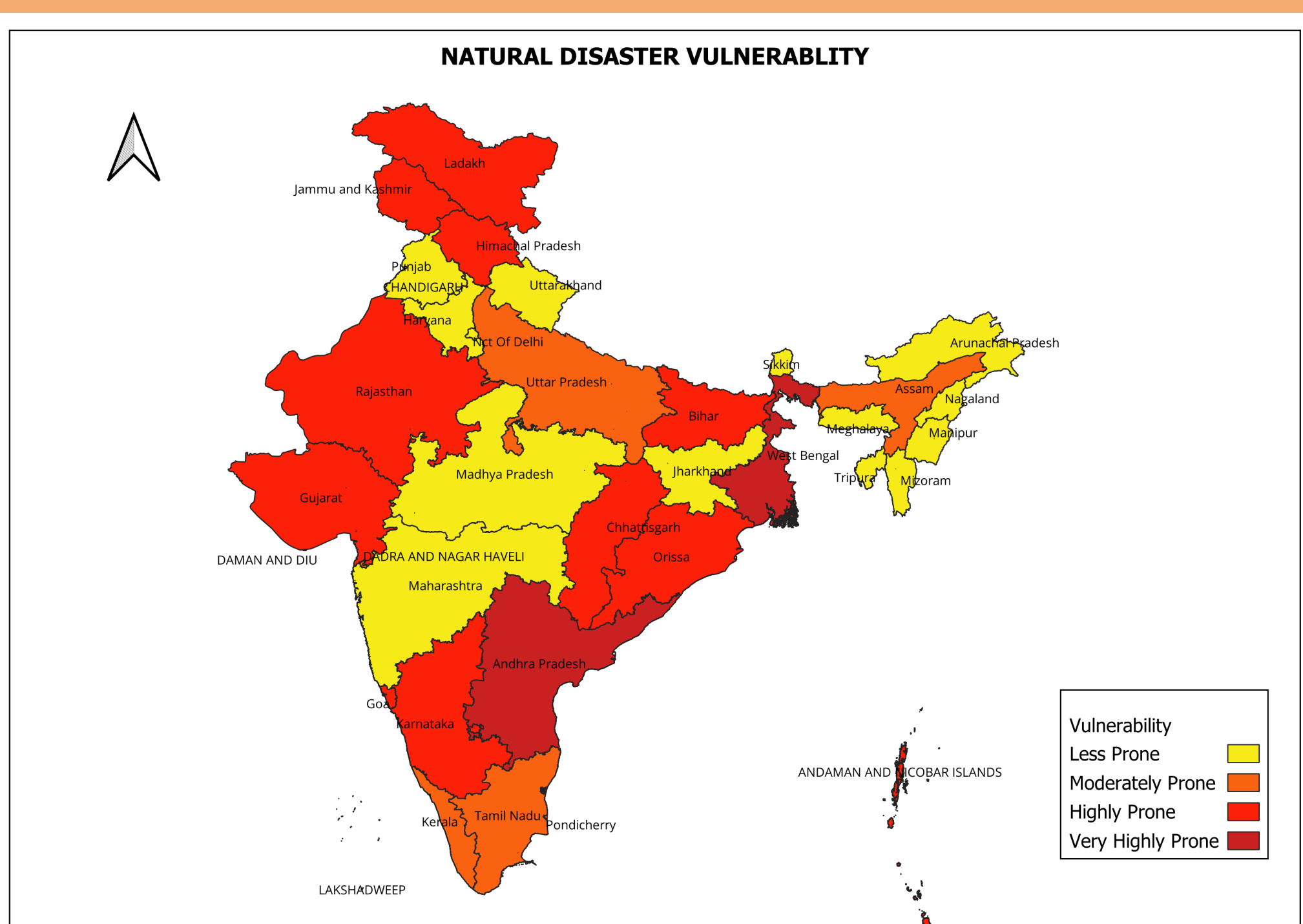
We have taken the drought data from the year 1877-2004 of India then we have calculated the frequency of drought based on consecutive occurrences in two years, three years and four years for each state. Then we have standardized the data and summed it to calculate drought proneness.

## OBJECTIVE

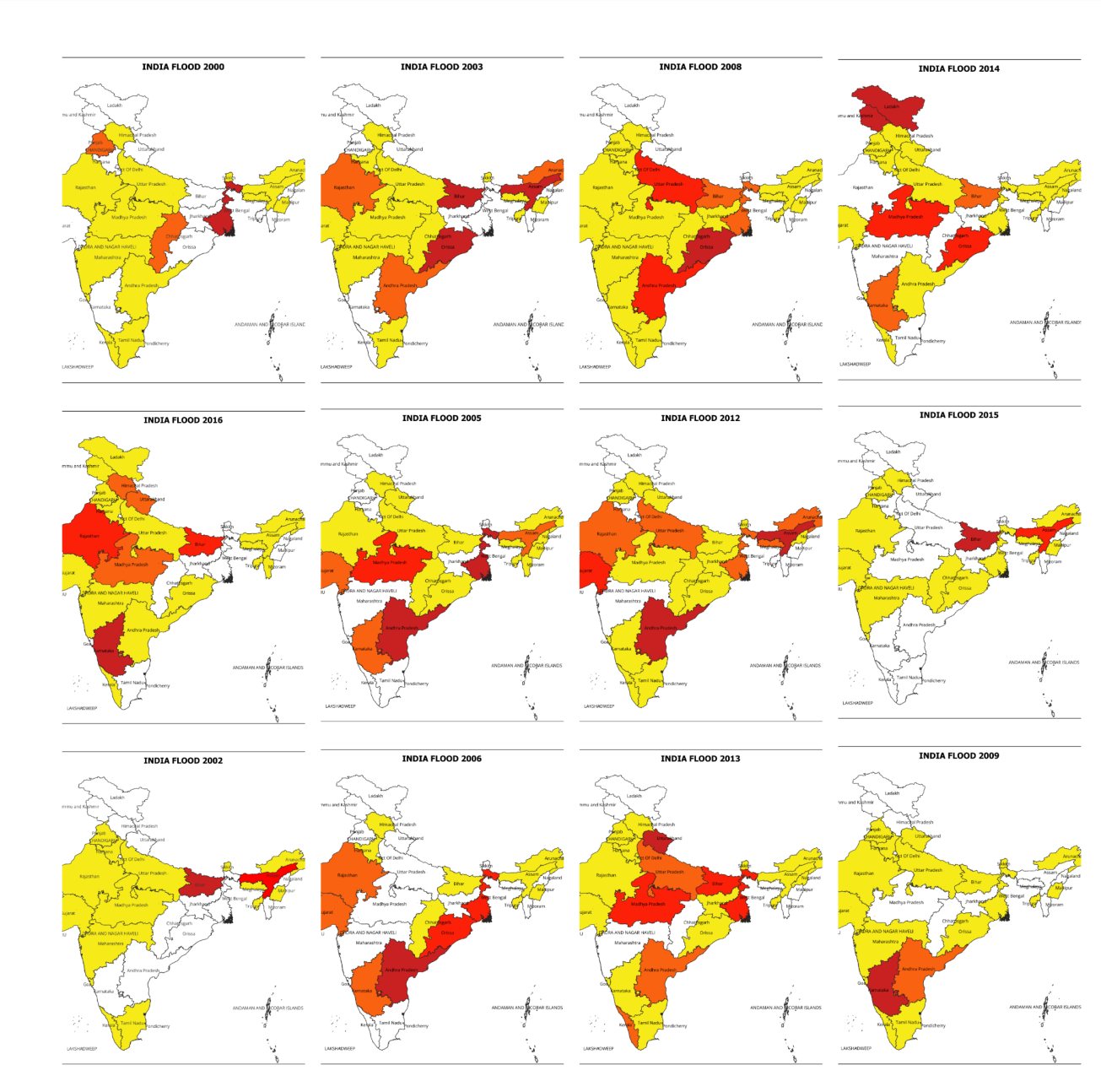
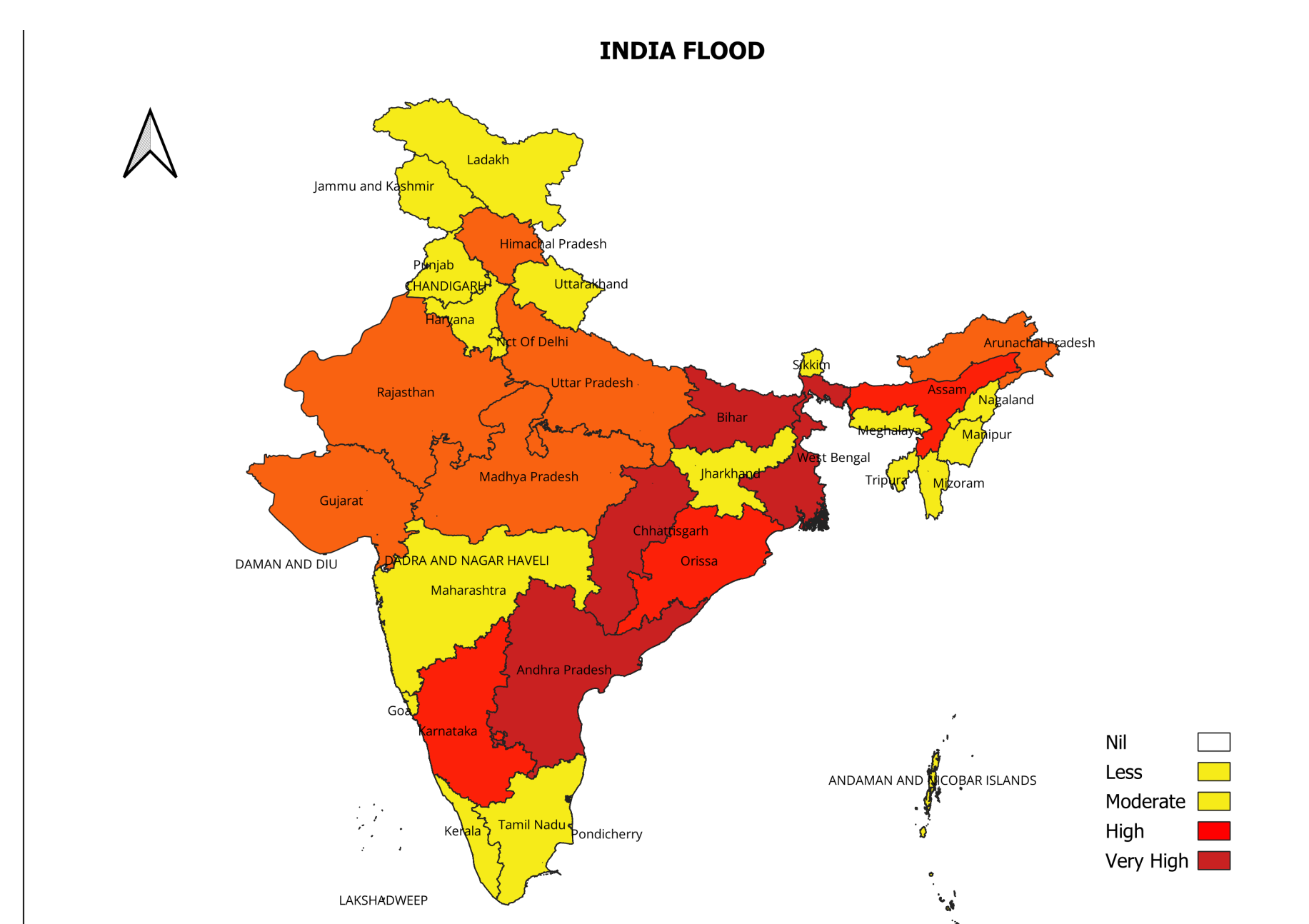
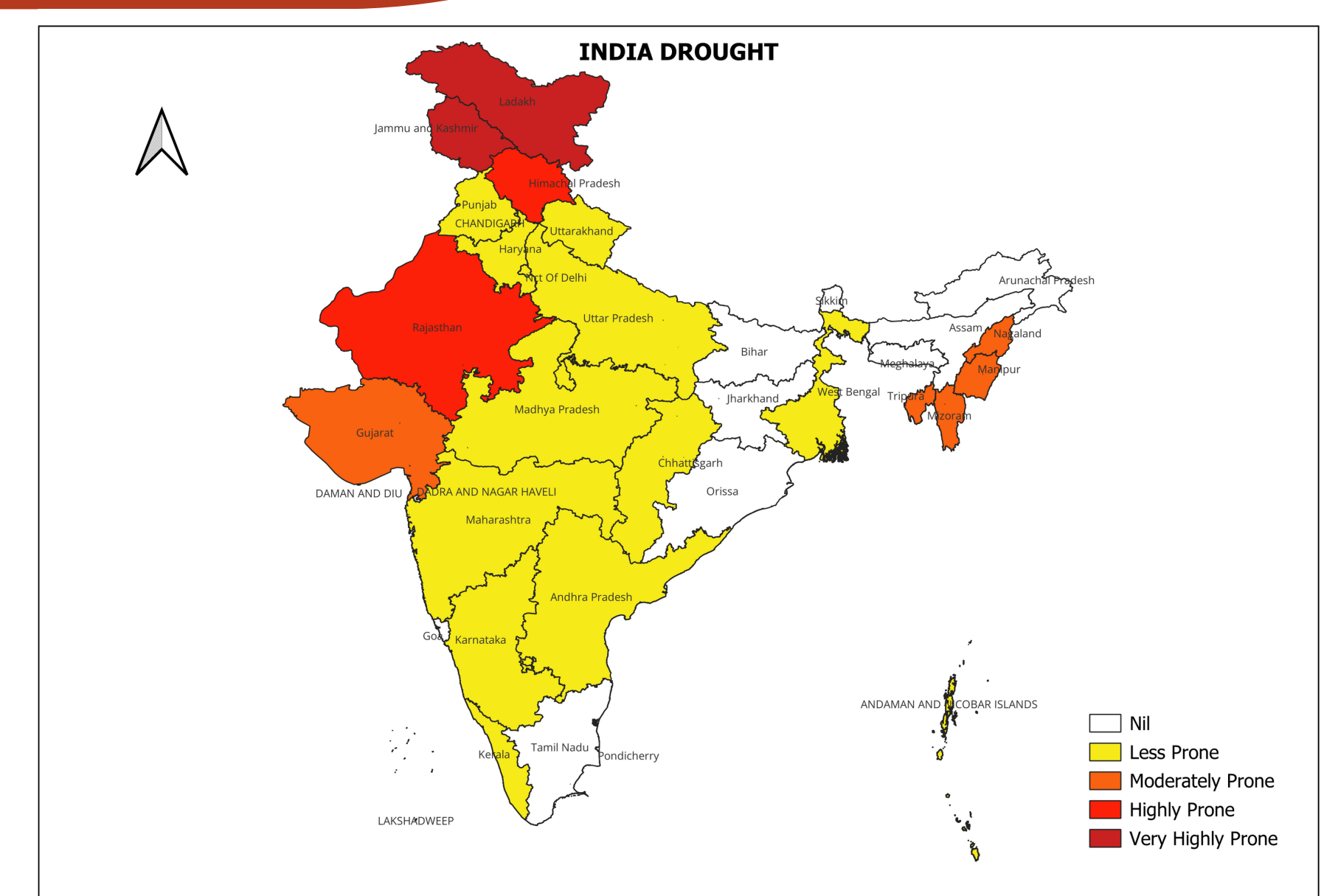
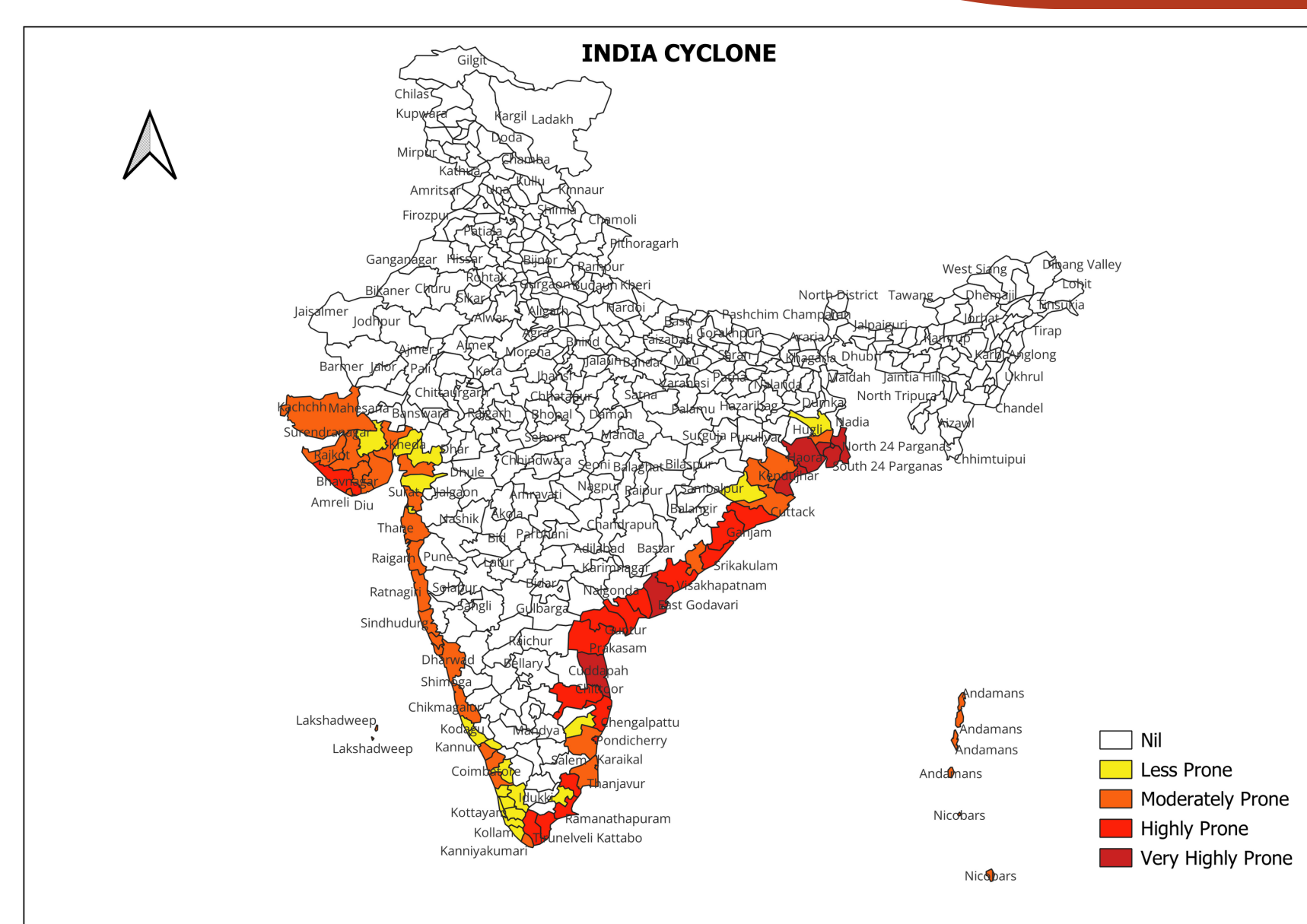
After analyzing the data of flood, drought and cyclone we are going to map its vulnerability for the different region of India

## CONCLUSION

From the study we came to the conclusion that very highly prone region to Natural Disaster are **West Bengal and Andhra Pradesh** which are shown in **Maroon** color. Lesser prone regions are colored in **Red, Orange and Yellow** in order.



## RESULT



### reference

- <https://ndma.gov.in>
- <https://state.bihar.gov.in/>
- <https://apsdma.ap.gov.in/>
- <https://usdma.uk.gov.in/>

### TOOLS USED

