

Catastrophies Across Time

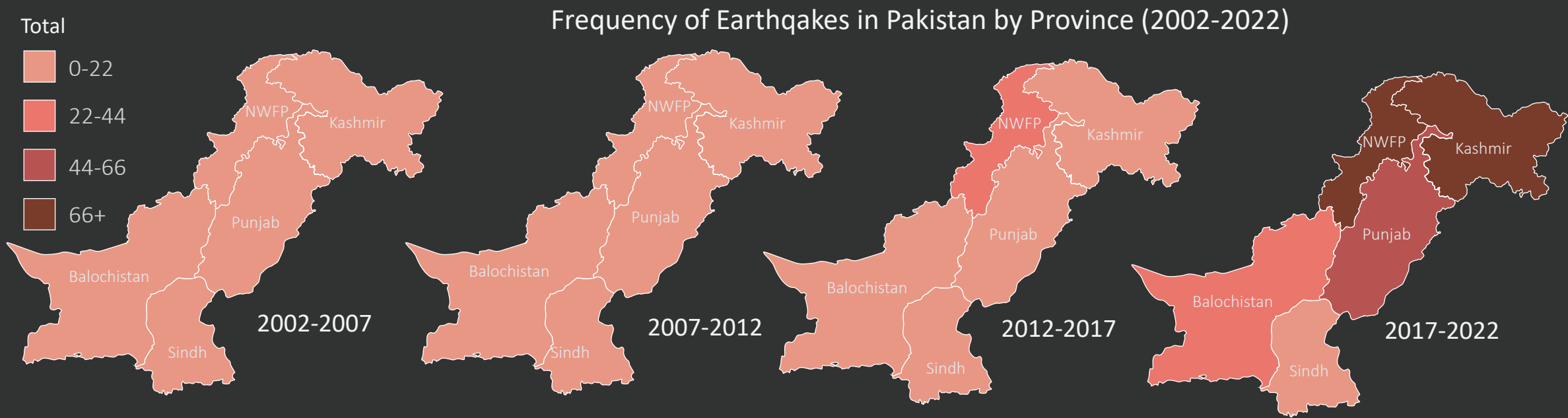
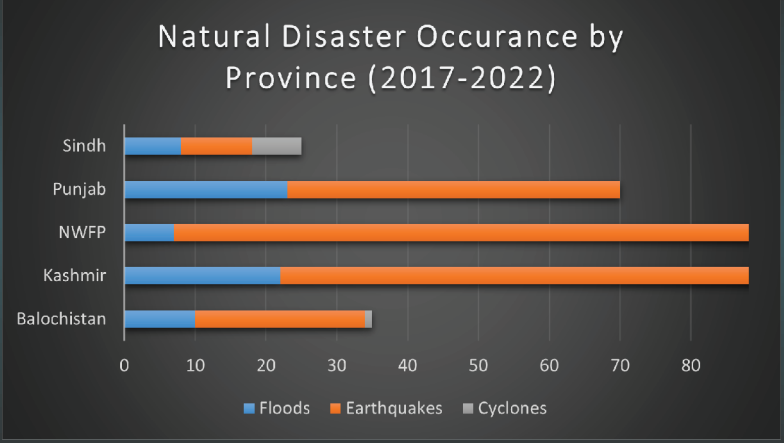
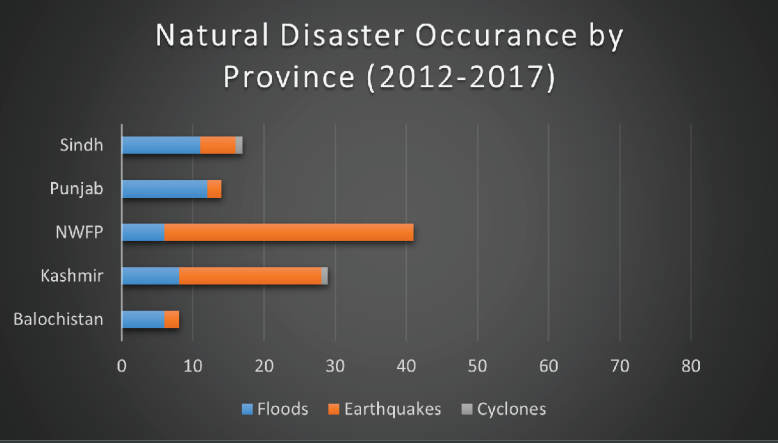
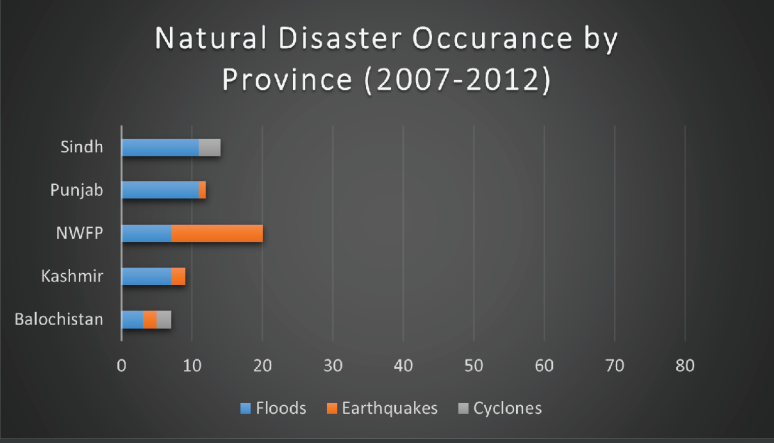
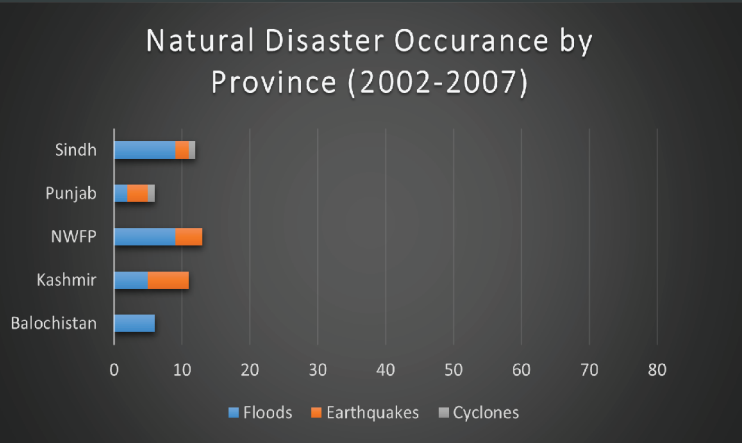
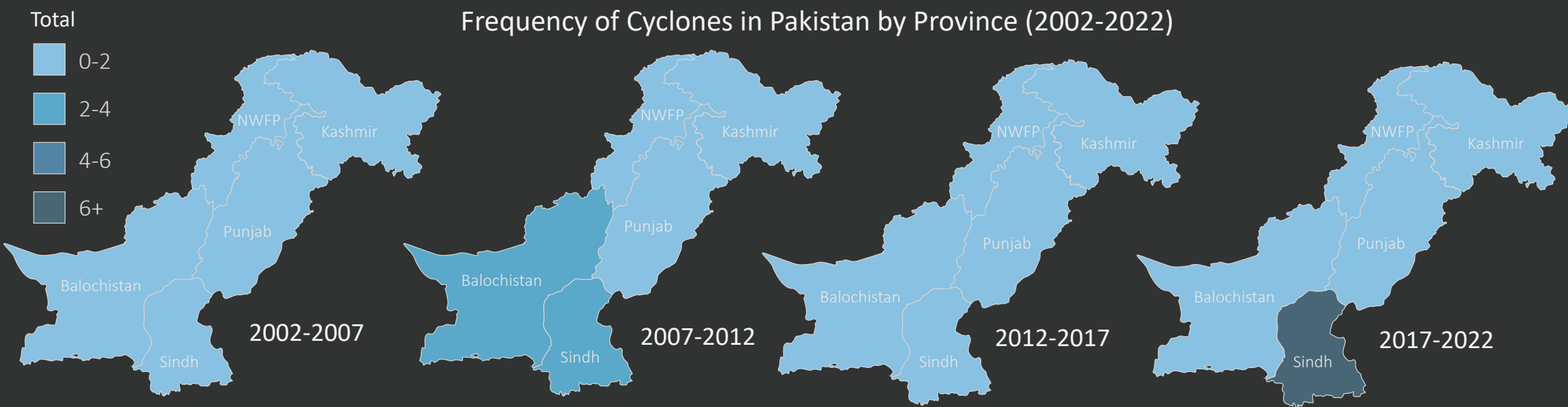
Observing Frequencies of Natural Disasters Over Time

Introduction

Year by year the grim implications of climate change grow larger and larger. What we, as citizens of a developed country, tend to forget is that what we experience first hand is just a small dose of what other countries must face.

Climate change is most widely exhibited within developing nations as their economies are heavily dependant on natural resources, thus a natural disaster can lead to large economic downfalls. Developing countries have limited facilites and resources when it comes to coping with extreme natural disasters, for this reason they face heavier implications of climate change.

Within this project an analysis will be done spanning across

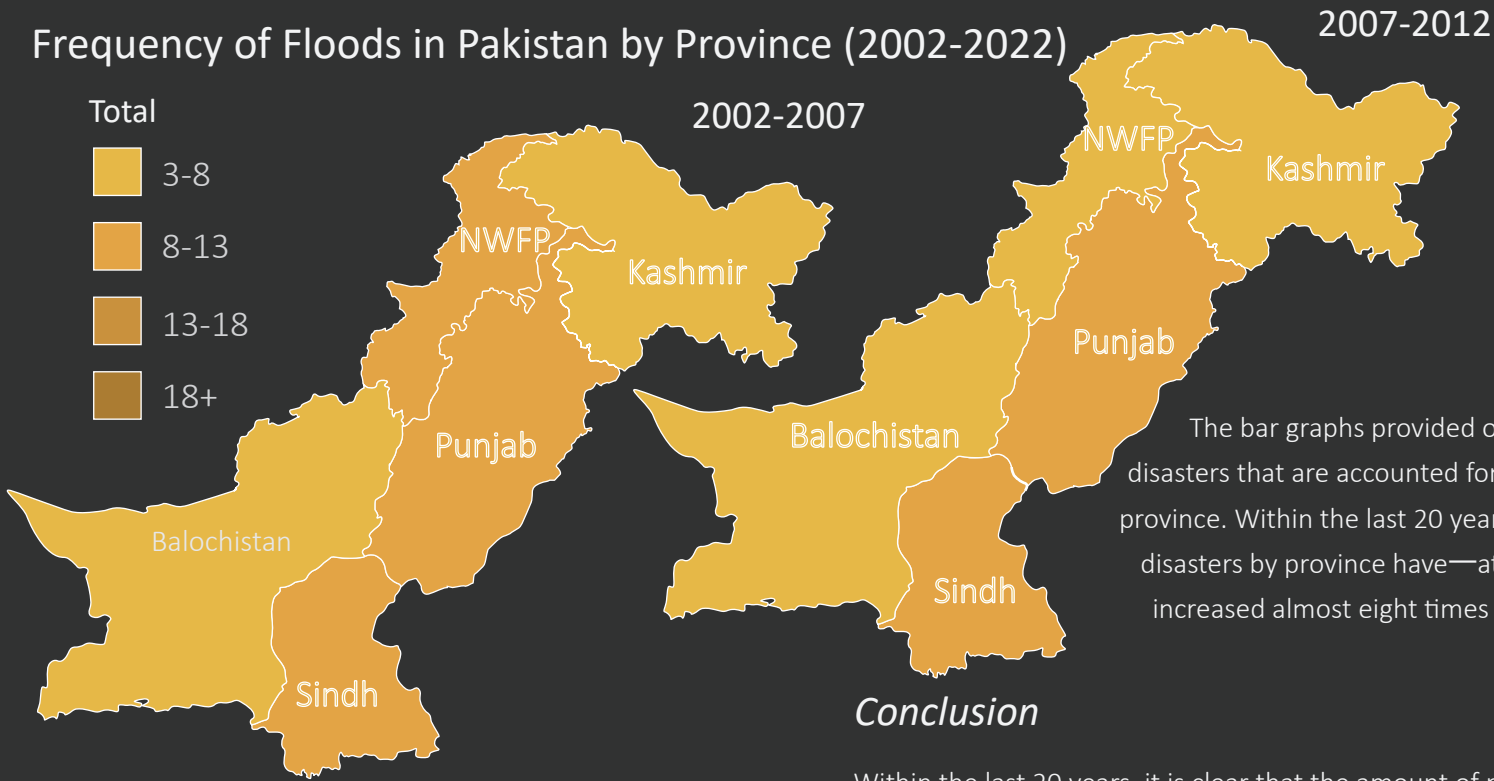


twenty years for Pakistan in relation to three different types of natural disasters: cyclones, earthquakes, and floods. Pakistan will be split up into its provinces. These provinces include Balochistan, Sindh, Punjab, North West Frontier Province (NWFP), and Kashmir. It's important to note that Kashmir is also included within this analysis as portions of it are Pakistani-administered regions.

Results

Based on the maps at the top of this page, it's clear that the provinces most affected by cyclones are to the South, Balochistan and Sindh, as they are nearest

Frequency of Floods in Pakistan by Province (2002-2022)



The bar graphs provided on the previous page sum up all natural disasters that are accounted for within the specific time frames for each province. Within the last 20 years, it is visible that the occurrence of natural disasters by province have—at minimum—doubled, and at maximum, increased almost eight times over.

Conclusion

Within the last 20 years, it is clear that the amount of natural disasters have increased by significant levels, and as the “World Bank Climate Change Knowledge Portal” points out, the country “faces some of the highest disaster risk levels in the world” because of it. These risks do not just consist of socioeconomic implications but also ones concerning health, as the chart to the right for number of people affected points out. This toll is to be even larger with the 1,700 dead, 13,000 injured, and 33 million people displaced by floods Pakistan experienced in 2022 alone.

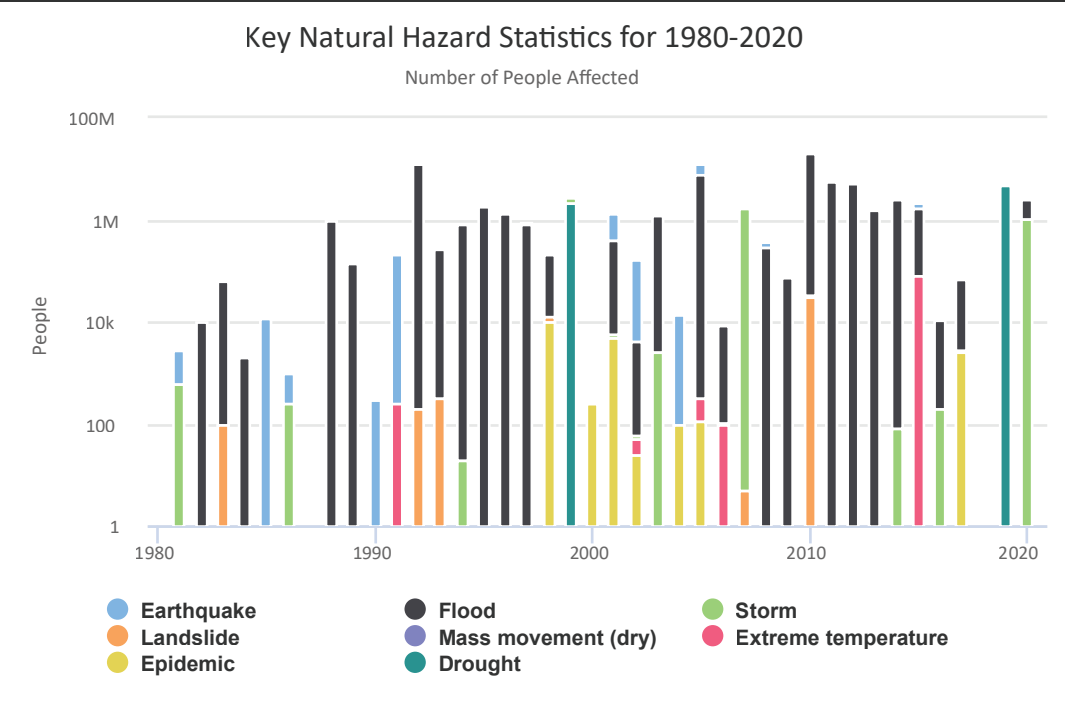
The “World Bank Climate Change Knowledge Portal” also points out how “...climate change is now recognized to have significant impact on disaster management.” As temperatures rise, so do low-pressure zones which cause monsoons. With these rising temperatures water can’t be absorbed into the ground and thus, flash floods are formed. As sea surface temperatures rise, so do the likelihood of cyclones forming and wreaking havoc across the southern provinces. And because, then, all these natural disasters lead to changes in the amount of stress occurring near fault lines and mountain ranges, earthquakes occur as well.

The rise in temperature, sea levels, and frequency of extreme natural events/disasters come hand in hand with climate change. And it’s apparent that frequencies of natural disasters are rising at speeds that are too difficult for countries to keep up with, this data analysis has proved such. Thus, it’s important for us as a society to take what the data shows, as well the implications of this data, to effectively change our behavior in relation to the environment so that we can curb the socioeconomic, physical, and environmental consequences that are coming to fruition, or have already, due to climate change.

to the coastline. With time, the overall frequency of cyclones has increased in Balochistan, specifically, and in Pakistan overall.

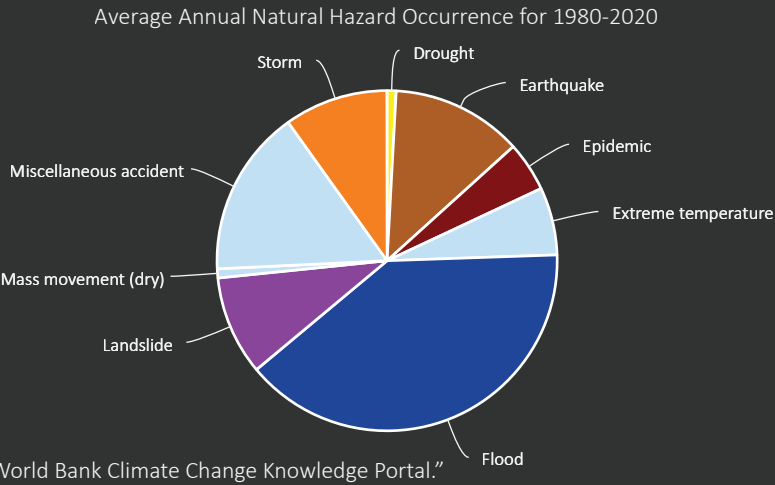
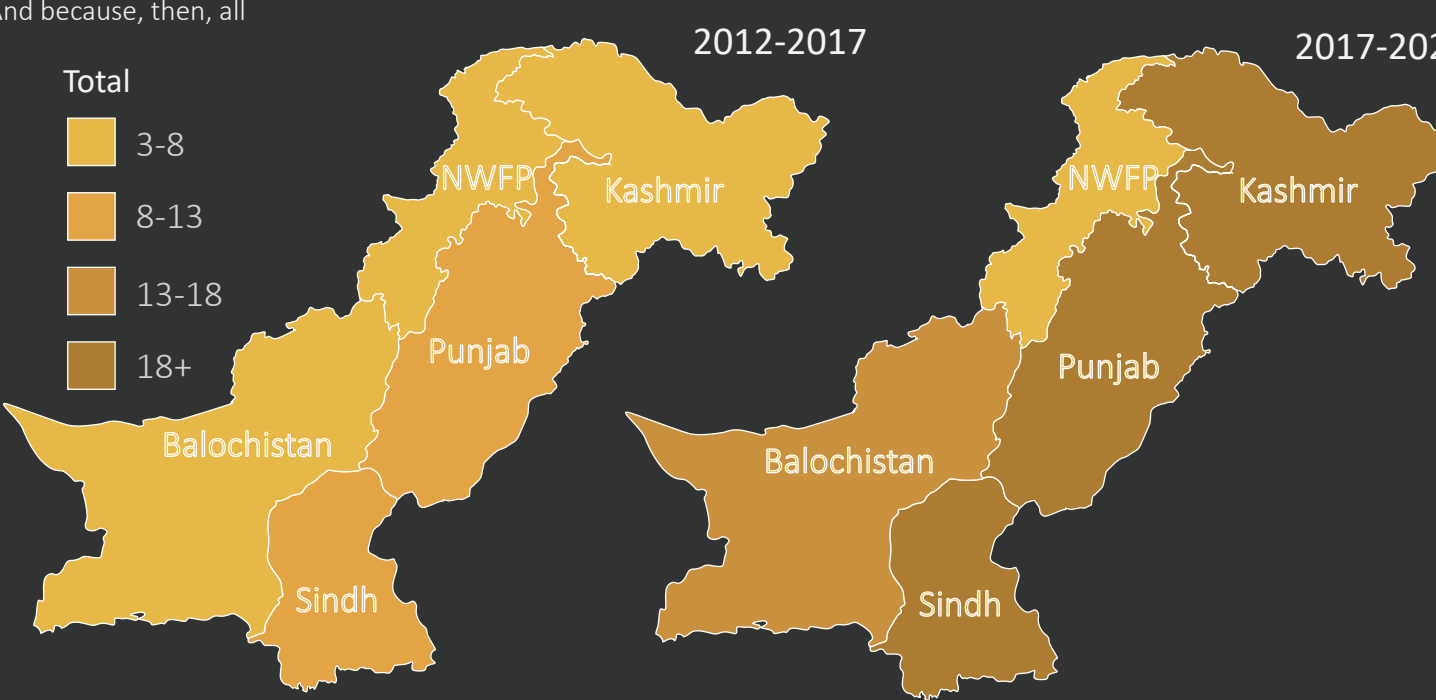
When looking at the maps to bottom of the previous page, it can be observed that the most common provinces for earthquakes are to the North. This is due to the fact that these provinces are closest to the Himalayan range which are situated atop fault lines and shifting tectonic plates. The frequency of earthquakes has increased over time for all regions, but especially so for Kashmir and NWFP.

The final natural disaster to be analyzed is, as the pie chart below points out, the most prevalent concern for Pakistan—floods. Initially, the Eastern provinces underwent the most flooding as they were situated nearest to bodies of water and faced the thermal lows that led to monsoons. With time, however, flooding is something to be experienced almost across all provinces besides NWFP. The frequency of flooding has also increased by four times what it faced 15 years prior in certain provinces.



“World Bank Climate Change Knowledge Portal.”

Frequency of Floods in Pakistan by Province (2002-2022)



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