Sourcing open data

# Data Source

[World Disaster Risk Dataset](https://www.kaggle.com/datasets/tr1gg3rtrash/global-disaster-risk-index-time-series-dataset/data)

This dataset reports each country’s disaster risks annually. A disaster risk is a country more likely for “potential loss of life, injury or destroyed or damaged assets” due to “system, society or a community”.[[1]](#footnote-1) The world risk index is a geometric mean of exposure and vulnerability. Exposure is the exposure to natural disasters that a population faces such as drought, earthquakes, tsunamis, etc. Vulnerability is composed of susceptibility coping, and adaptation.

* Susceptibility are the conditions of a society such as: socio-economic development, deprivation, disparities, disease and epidemic exposure within a country. A large susceptibility increases the likelihood that populations will be harmed in a disaster event.
* Coping involves how a society can counteract disaster events.
* Adaptation is the long-term processes put in place to avoid significant impacts from a disaster event.[[2]](#footnote-2)

The aim is to look at a global level to determine where relief may be needed and to determine the types of risk management that would be effective to help people avoid potentially devastating impacts of disaster. Details about the columns as well as data consistency can be viewed within the jupyter notebook.

## Data Description

|  |  |  |
| --- | --- | --- |
| **Column Name** | **Description** | **Type** |
| Region | Country | object |
| WRI | world risk index; square root of the exposure \* the vulnerability | Float64 |
| Exposure | Occurrences of natural hazards risk | Float64 |
| Vulnerability | Exposure to risks such as susceptibility, lack of coping capacities, and lack of adaptive capacities | Float64 |
| Susceptibility | Exposure to structural characteristics and conditions of a society that will cause suffering from a disaster situation | Float64 |
| Lack of Coping Capabilities | Government preparedness, early warning, medical care and social and material security infrastructure | Float64 |
| Lack of Adaptive Capacities | Adaptability to natural events, climate change and other challenges | Float64 |
| Year | year | Int64 |
| Exposure Category | Categorical exposure score | Object |
| WRI Category | WRI categorical score | Object |
| Vulnerability Category | Vulnerability Categorical Score | Object |
| Susceptibility Category | Susceptibility Categorical Score | Object |

# Data Collection

The Kaggle dataset is a dataset collected and cleaned from the following source: [WeltRisikoBericht - WeltRisikoIndex](https://weltrisikobericht.de/worldriskreport/#downloads). This data is modeled from United Nations University Institute for Environment and Human Security using over 100 indicators.

# Why I Chose This Data

The world risk data set has important implications on the effects of climate disaster responses of various countries. This dataset encompasses worldwide variables that describe climate disasters, socioeconomic status of citizens, and infrastructure measures. This dynamic, interdisciplinary dataset allows me to explore a real-world problem.

I have also personally chosen this dataset because I am interested in dataset regarding health and global disparities. If I could choose any future position, it would be working for social issues or public health. This project seems to be the best of both worlds due to global risk having indicators for health.

## **Objective:** Determine which countries would be strongly impacted by disaster. This will highlight vulnerabilities where aid can be sent in the case of disaster and/or any preemptive support via policy changes, materials/supplies, education, charity organization or other forms of support.

# Questions

1. Do exposure and vulnerability tend to be correlated?
2. Which countries have the highest WRI?
   1. In countries with the highest WRI, does the low score typically come from the same source?
   2. What are the most common sources of high WRI?
   3. What are the least common sources of a high WRI?
   4. What kind of aid could potentially be used to help the most amount of countries?
3. Which year had the highest number of countries with a high WRI?
   1. Can this high WRI be attributed to any global event?
   2. Are the events typically only in a country?
4. Are there similar climates, or terrain types in countries with high exposure levels?

# Limitations & Ethical Considerations

This dataset is only current through 2021 so any risk index scores may be inaccurate to the country’s current state. This dataset should only be an indicator for possible future analyses of specific countries and methods to improve their risk score. Users should be sure to research each specific country rather than assuming they know the specific realms of aid needed with the scores given in this study. The scores supplied in this dataset provide a good overview but not answers for informed solutions on a country level.

# References

Bundnis Entwicklung Hilft. (2024). *The World Risk Report*. Retrieved from Bundnis Entwicklung Hilft: https://weltrisikobericht.de/worldriskreport/#

United Nations Office for Disaster Risk Reduction (UNDRR). (n.d.). *Definition: Disaster Risk*. Retrieved from undrr.org: https://www.undrr.org/terminology/disaster-risk

1. (United Nations Office for Disaster Risk Reduction (UNDRR), n.d.) [↑](#footnote-ref-1)
2. (Bundnis Entwicklung Hilft, 2024) [↑](#footnote-ref-2)