Data Visualization Project

Climate Disasters

Andriani Kakoulli, number: 20230484

Burcu Yesilyurt, number: 20230763

Carolina Jacobson, number: 20230594

Eugénia Rosário, number: 20220598

Raquel Mendes, number: 20230596

April, 2024

URL for the Dashboard

https://public.tableau.com/app/profile/carolina.marcos/viz/GroupABCER/DashboardFinal?publish=yes

Introduction

The purpose of this dashboard is to provide insights into natural disasters, including climatological, geophysical, hydrological, and meteorological events. It is designed to serve a dual purpose: to raise awareness among the general public about the impact of these disasters and to equip decision-makers with valuable information for proactive measures. By analyzing data on the number of people affected or deceased in each country over specific decades, this dashboard aims to foster informed decision-making and facilitate the formulation of effective disaster response strategies.

Natural disasters have a profound impact on communities worldwide. These unpredictable occurrences demand effective planning and response strategies to mitigate their effects. Our group project focuses on developing an interactive dashboard that consolidates and visualizes data about natural disasters encompassing occurrence patterns, affected populations, and greenhouse emissions. Through this dashboard, we aim to provide a holistic understanding of environmental challenges, allowing for informed decision-making and proactive measures towards disaster resilience and sustainability.

Data Sources

The data utilized in this dashboard was sourced from the United Nations Statistics Division, provided to us by our professor. This ensures the reliability of the information presented in our dashboard.

Features of the Dashboard

Our dashboard offers a user-friendly interface with intuitive features. Upon hovering over the icons, users receive guidance on how to interact with the dashboard, such as accessing information by hovering over maps or adjusting filters to generate different graphs.

The dashboard includes various filters allowing users to customize their analysis by selecting the type of natural disaster, decade, information they are interested in (deaths, affected people, or occurrences), and the number of countries to be displayed in the graphs. Graphical representations include three horizontal bar charts illustrating the top countries with the highest total occurrences, people affected, and deaths for the selected disaster type. Additionally, a pie chart named "Greenhouse Gas Emissions" displays the proportion of CO2, N2O, and CH4 emissions for the chosen decade. Integration of this information with natural disaster data presents an opportunity for holistic analysis, although further exploration is required to determine the optimal approach for merging these datasets effectively.

The top section of the dashboard features an interactive map, color-coded to represent absolute quantities based on the selected disaster type, decade, and information parameters defined by the user.

Design Considerations

In designing our dashboard, we have adhered to key principles learned in class, ensuring clarity, accessibility, and user-friendliness. We have paid special attention to potential design pitfalls such as misleading labels, inadequate contrast, and considerations for color blindness to enhance the dashboard's effectiveness.
Our design assures that the dashboard is intuitive and easy for the intended audience to understand.

Audience and Needs

Our target audience includes policymakers, emergency response teams, researchers, and the general public seeking reliable information on natural disasters. By catering to their diverse needs for data-driven insights, we aim to empower them with the information necessary to make informed decisions and take proactive measures in disaster management.

Navigation Tips/ Examples

The dashboard's navigation is intuitive and user-friendly. Hovering over data points provides detailed information, and applying filters dynamically updates the dashboard to reflect the selected parameters.

Use Cases/Questions

The dashboard facilitates exploration of pertinent questions related to natural disasters and their implications. Examples of questions include:

- ♥ How many people have been affected by each type of natural disaster?
- ♥ What countries are more prone to each type of natural disaster?
- ♥ Are there any areas where improvements in disaster preparedness are needed?
- ♥ How have renewable energy sources made a difference through the years?

While these questions serve as guiding points, the true value of the dashboard lies in its ability to empower users to gain insights tailored to their specific needs.

For instance, analyzing the evolution of disaster data over decades can inform conclusions about the efficacy of disaster preparedness efforts, highlighting areas requiring attention. Additionally,

exploring the relationship between greenhouse gas emissions and natural disasters could shed light on the role of renewable energy sources in mitigating environmental risks.

One can visualize emergency response teams, such as national disaster management agencies, using the dashboard to assess countries vulnerable to specific types of disasters and allocate resources accordingly. Similarly, policymakers and government can make use of the information provided by the dashboard to identify regions requiring enhanced disaster awareness measures, thereby improving overall resilience on a national scale.

Conclusion

Through this project, we aspire to contribute to the collective understanding of natural disasters and their impacts. By leveraging data visualization techniques and interactive features, our dashboard seeks to serve as a valuable tool for enhancing disaster resilience and response capabilities in the face of these formidable challenges.