**Proposal Topic: Data Based Outlook to Reduce Flood to Property Damage**

**Exploratory Data Analysis: Flood Damage to Property Reduction**

BAT-404 Analytics Techniques and Tools

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**Introduction**

Flooding is a natural worldwide disaster in both industrialized and low-middle income nations, accounting for roughly 40% of all environmental disasters. Flooding has a significant impact on human health before, during, even after the flood. Southeast Asia is fantastically prone to common and extreme environmental disasters. The most recent floods in Southeast Asia were caused by a combination of events, including typhoons, heavy rainfall, and tropical storms. Four tropical cyclones, in addition to robust and prolonged monsoon rains, induced huge harm in Thailand, Cambodia, the Philippines, Vietnam, and Indonesia. On a big scale, those extraordinary monsoon rains, typhoons, and tropical storms are the final results of weather alternate, a complicated gadget marked through dynamic relationships among land, our bodies of water, and inhabitants. Southeast Asia is vulnerable to the negative effects of climate change due to its rapidly rising population, the majority of whom are destitute, insufficient food security, and diminishing natural resources. Narrow mitigation efforts have been attempted by institutions throughout Southeast Asia. These initiatives, however, are often unsustainable because of a loss of network connection and engagement. As a result, it induced extraordinary and big harm throughout Southeast Asia areas livelihood and economy. The purpose of this evaluation is to assemble an Exploratory Data Analysis of floods from the 12 months 2001-2020 in an effort to calculate the entire damages to each country recorded with inside the statistics sets. Furthermore, it will likely be ranked up from every country primarily based totally at the numbers of floods recorded and it'll display the distinction among the maximum damaged countries primarily based totally on the entire harm to the least damaged countries. These statistics will display particular and intact records of statistics which could assist and save you the harm resulting from flood to each united states in Southeast Asia.

**Problem Statement**

Floods are disastrous natural hazards accused of human live losses. As a flood-prone area, Southeast Asia (SEA) has often been hit by floods, resulting in the highest fatality in the world. Despite the destructive flood impacts, how has flood occurrence changed over the past decades, and to what extent did floods affect the SEA are not yet clear. Using the data, we gather; we aim to assess the trend of flood damages to properties in the SEA in 2000–2022.

As low flood protection standards in Cambodia and Myanmar are considered a reason for high flood-induced mortalities, building higher flood protection standards should be taken as a priority for mitigating potential flood impacts. With quantifying flood occurrence and impacts, this study offers scientific understandings for better flood risk management.

**Significance of the proposed topic**

The key findings of this study will be useful to the following entities and solve related issues in relation to food waste.

**Community.** The zero-food waste reduces local pollution because the more emission we produce, the more we generate trash that could lead to health issues for humans.

**Animals.** Instead of dumping the excess foods into landfills which affect our greenhouse, it’s cheaper and safer to feed it to starving animals. Through this, it will reduce dying animals because of hunger.

**Reduce Hunger.** Foods that can still be eaten and not spoiled can be donated. This will support one’s community by providing donated untouched food to those who might not have a steady food supply that would have otherwise gone to waste and landfills.

**Reduce methane that food waste emits.**  Composting practices minimize anaerobic conditions and maximize aerobic conditions will be the most effective at reducing greenhouse gas emissions. Cutting methane emissions is the opportunity that our world has to slow the rate of global warming.

**Fight climate change and pollution.** Zero waste conserves resource and minimizes pollution. It also conserves natural resources and reduces pollution from extraction, manufacturing and disposal.

**Methods**

This study mainly aims to produce an exploratory data analysis regarding flood damage caused to the countries in South-East Asia, with that knowledge the proponents want to produce a compelling analysis on the dataset used that will push the countries to see what other countries that has significantly lower flood damage inflicted that they don’t have. A collaboration where participating countries will share their knowledge in creating a more flood resilient country in the future.

**Expected Output**

This research aims to bring about an exploratory data analysis of floods from the year 2001 to 2020 from the countries within the South Eastern region of Asia that resulted in the highest damage to property as well as their respective local governments that experienced the least amount of damage to property. The worldwide flood datasets derived from the Centre for Research on the Epidemiology of Disasters' Emergency Events Database (EM-DAT) will be used to rank up the number of damages to property to each country from the highest to lowest and then determine what location in the South Eastern Asia had the best countermeasures for flood damage. This data will be utilized to be able to develop a flood countermeasure strategy that can potentially help the countries most affected by floods be more capable of saving as much as they can. By collaborating with other countries in developing new strategies, next time floods arrived not much would be carried away.

**Sustainable Development Goals (SDGs) of the Project**

The SDGs that this project aims to achieve are Sustainable Cities and Communities and Climate Action. These SDGs are further described as follows;

1. **Goal 11: Sustainable Cities and Communities** - This SDG aims to make cities and human settlements inclusive, safe, resilient and sustainable.
2. **Goal 13: Climate Action** - This goal strives to take urgent action to combat climate change and its impacts.

These SDGs are in line with the Proposal Topic: Data Based Outlook to Reduce Flood to Property Damage EDA: Flood Damage to Property Reduction as it will provide a mitigation and quick response plan based from multiple frameworks from different countries within the South Eastern region of Asia that are tried and tested. These frameworks will help the governments of the countries that are take more damage caused by flood by assimilating the said frameworks from other countries and applying it to their own allowing them to mitigate damage to property caused by floods.

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