Literature Review - Group Peer Review

Authors: Group 2

Reviewers: Constance Vaughan, Giambi Cruz, Angelic Malarve-Henry

1. What topic is this group reviewing? Group 2 is reviewing the topic of natural disasters and their effects on humanity.

2. Does the Literature Review include the following? (Yes or No, or explain)

    a. Cover Page: Yes

    b. Abstract: Yes, but the abstract was not on its own page.

    c. Introduction: Yes

    d. Conclusion: No conclusion, but they have a discussion section at the end of the paper.

    e. References Page: Yes

    f. At least three sources per section (if not, list the topic/section where this is not the case):

3. Are there three or four sections with clear topics/ headers? List each focus here:

Each listed topic in group 2's paper has a sub-sub topic listed. It is unclear which header is its own topic.

    a. Hurricanes

    b. Floods

c. Drought

4. Describe the tone of the literature review.

The tone of group 2's literature review is very inconsistent. Some sections of the review read like it's not a unified review of different perspectives. The different voices and perspectives of each group member's sections show. Some sections sound conversational/informal while other sections are actually breaking down the topic incorporating the article supporting that topic.

5. Are the sources mostly peer-reviewed? Some topics may require non-peer reviewed sources. Does it seem like the group made the appropriate effort at finding peer-reviewed sources?

The group used peer-reviewed sources and authoritative materials to support their paper. They showed a mix of peer-reviewed journals, reputable books, and institutional reports.

6. In order of their appearance, describe each section and how it explains its respective texts. Do the articles connect to one another or are they merely summarized? Are the sources fairly summarized or is there an apparent bias or opinion?

- The articles are merely summarized within each section, there is not a visible flow into each issue/impact of their chosen natural disaster.

a. Abstract: **The paragraph provided is not a good abstract on natural disasters because it lacks clarity, organization, and specificity. It does not clearly outline the main points of the article or provide a concise summary of the information presented. In order to improve this abstract on natural disasters, it is important to provide a clear and concise summary of the main points of the article. This includes providing specific examples, data, and case studies to support the claims made in the paragraph. Additionally, the abstract should be well-organized and**

focus on a few key points to ensure that the reader can easily understand the information presented.

b. Introduction: **The paragraph contains awkward phrasing and repetitive language, which can detract from the overall effectiveness of the introduction. It is important to use clear and concise language to communicate ideas effectively. Furthermore, the paragraph teases the reader with the promise of an in-depth analysis that will utilize current research to shed further light on the catastrophic effects of natural disasters on humanity. By focusing on the growing potential for damages caused by hurricanes in the United States, the paragraph hints at the specific examples and data that will be presented in the subsequent paper.**

c. Hurricanes:

The hurricane section is divided into three parts: the economic impact of hurricane damage, mental health effects, and the relationship between hurricanes and pathogens. Each part connects logically to the overall theme of the paper. There is no apparent bias, as the discussion remains grounded in factual data and research findings.

d. Floods:

The flood section addresses the widespread nature of flooding and its impact on property and economic disparity. It explores how floods disproportionately affect individuals of lower socioeconomic status and exacerbate financial instability. This section ties into the more prominent theme of the paper by highlighting how natural disasters, specifically floods.

E. Drought

The drought section explores prolonged water shortages' environmental, agricultural, and health impacts. It covers how increasing temperatures exacerbate drought conditions and how these conditions can lead to secondary

problems like crop diseases and economic hardship. This section complements the discussions on hurricanes and floods by addressing another form of natural disaster with distinct but equally severe consequences.

F. Discussion

The discussion acts as a conclusion for this paper. It highlights the environmental, agricultural, and economic effects of the different natural disasters mentioned in their paper. The discussion is formatted more as an abstract more than a concluding section.

7. Is there too much repetitive information between the sections? How could the sections be more distinct from one another? Explain in a few sentences either way.

The sections on hurricanes, floods, and droughts overlap in addressing the broad impacts on infrastructure, mental health, and economic costs. To make the sections more distinct, separate economic and health impacts, highlight different solutions, and focus on unique aspects.

8. Does the order and organization of the sections make sense? Should they be reordered or refocused? Explain and/or make suggestions.

The order of the sections makes sense. Hurricanes briefly explain how hurricanes form and explore strategies like building codes and emergency responses. Explain different types of flooding and highlight flood management. Describe what leads to droughts and detail impacts on agriculture and health, including disease spread.

9. References Page

a. Are sources in APA format? **Yes**

b. Are sources in alphabetical order? **No**

c. Are sources formatted consistently? **Yes**

10. How does the document look aesthetically? Explain how it can be improved.

    a. Neat? **No! Does not demonstrate skill or efficiency. The sections are confusing and I felt like I was playing a guessing game. This literature review was not concluded.**

    b. Same font throughout? **Yes, APA Format**

    c. Clear section headers? **Yes; However, there seems to be confusion with the abstract and introduction. The abstract lacks in various ways.**

11. Describe the best features of this literature review in a few sentences.

The literature review attempts to synthesize a broad range of impacts from natural disasters. Each section aims to build logically on the previous ones, creating a narrative that underscores the consequences of natural disasters.

12. Describe how this literature needs to be improved in a few sentences.

- Certain sections of this review can be grouped together and shortened. Also, the sub-subtopics can be organized better so they have a better flow OR the sub-subtopics can be incorporated into the main header topic and discussed there.

EX. Topic: Hurricanes

Subtopic you listed: Hurricane Damage and Related Federal Spending

Instead you can do

Topic: Hurricanes

1st line of 1st paragraph: Hurricanes are known to cause damage to urban structures which can result in major economic damage to the region affected.

- **I would recommend the writing center.**
- **Some things are not cited properly and there are fragments.**

- **The quality of writing and editing could have been better to ensure that the literature is cohesive and well-crafted.**

Natural Disasters: The Cataclysm effects on Humanity

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ENGL 21003: Writing for the Sciences

Professor Anna Voisard

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Abstract

The article talks about the catastrophic damages natural disasters can bring onto society and the financial burden. Taking into account the statistics of how each country is affected differently and may take numerous protocols to help combat nature's wrath. The article illuminates how one's mental health may be affected and how they play a role in a country's GDP. It is also discussed how some disasters may be resolved to prevent lost of lives and finance in the coming future and highlights how the environment itself plays a major role between the natural disasters and humanity.

Introduction

Natural disasters are extreme sudden events attributable to environmental factors such as hurricanes, droughts, and floods. These disasters occur seasonally, increasing in severity and impact, often without any form of warning. Therefore, they pose a significant threat to the overall wellbeing of communities and critical infrastructures of a functioning society. It's crucial for governments to ensure that the necessary precautions are taken in order to minimize the

acceleration and duration of these periods of insecurity. The following paper will provide an in-depth analysis utilizing current research to bring further awareness to the catastrophes and effects these natural disasters hold towards humanity. This will be accomplished by highlighting the alarming growing potential of damages caused by hurricanes within the United States. Additionally, this paper will analyze the impact droughts have on certain communities, as well as interpreting the effects floods have on accelerating the widening of economic disparity present in our global economies. By exploring these overlooked aspects, we gain a better understanding of the multifaceted consequences of natural disasters. And the importance of actively implementing robust disaster preparedness and response procedures. By maintaining this proactive approach, society can ensure that the long term safety of vulnerable populations is secured.

Hurricanes

Hurricanes can be looked at as a natural disaster that affects everyone similarly regardless of your location of where it hits. The Caribbean and Western Hemisphere gets the brunt of it's rampage while the East would experience primarily Cyclones and Typhoons. Hurricanes form over the ocean, primarily close to the Equator, evaporating warm seawater into the low atmosphere; when the air rises, its cools and releases heat. They normally start as a thunderstorm, but add more warm ocean water, these thunderstorms will grow stronger until they reach a fully-realized violent hurricane. Hurricanes can be damage worth millions to repair, and the loss of lives can be unimaginable, whether from sheer windspeed and destruction, or it's connection to a daunting disease category known as a the pathogenic diseases (Pathogens are organisms that can cause disease).

Hurricane Damage and Related Federal Spending

The aftermath of a hurricane is one in which the governments of any country does not look forward to. It merely means that a miraculous amount of there budget and GDP has to go towards it. According to Terry Dinan (2016) study, found that:

> over time, the costs associated with hurricane damage will increase more rapidly than the economy will grow. Consequently, hurricane damage will rise as a share of gross domestic product (GDP), which provides a measure of the nation's ability to pay for that damage. According to the agency's estimates, expected annual damage currently amounts to 0.16 percent of GDP (or about $28 billion). (p. 002)

The data may reads a low percentage, but when converted to the actual dollar being 28 billion, it puts into the question if a hurricane didn't cause this much damage to the country, they finances can go towards something else. It is unfortunate those who are affected, with the government making tough calls put into the question of priority as well and how well it is handled.

Of course, spending varies between different hurricanes and storms, hence the categorical system helps. A category 1 Hurricane is light, almost as if it was a generic tropical storm: while a category 5 Hurricane is a full violent storm that brings heavy windspeeds, high volumes of rainfall which can cause flooding, and can also light the skies with lightning. For instance, according to this statistical chart from Terry Dinan (2016) study:

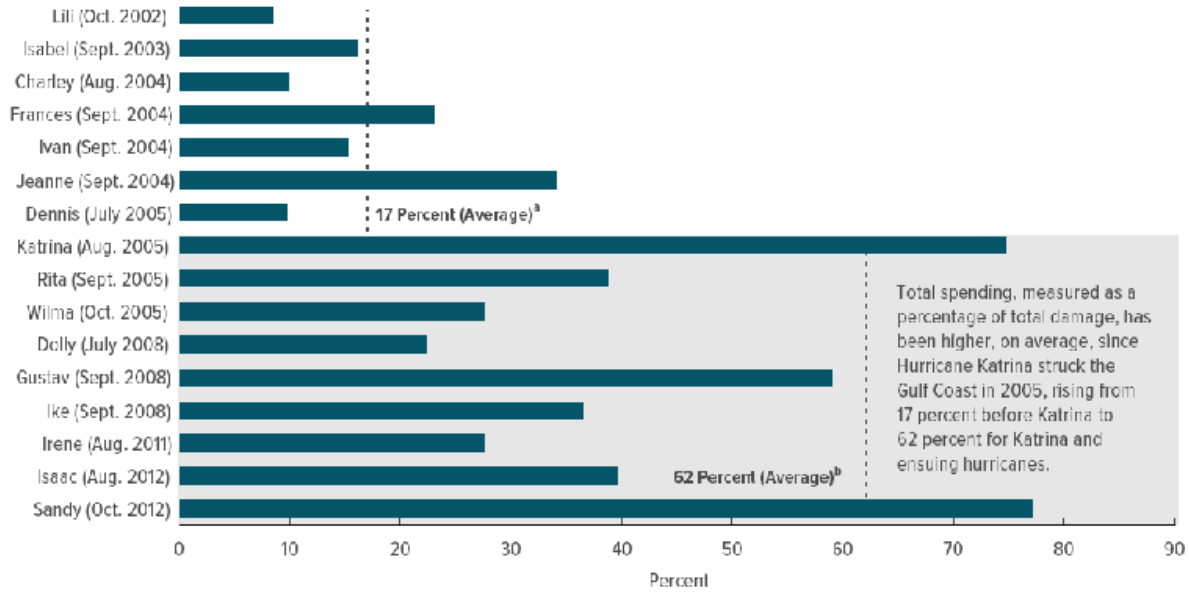

Table 1 (p.35)

Hurricane Lili from 2002 was not as destructive, thus it only amounts to costing 9% of federal spending; up to Hurricane Sandy of 2012 being so catastrophic, hitting the United States and causing the government to put nearly 80% into repairs and the aftermath. What can be observed is the relationship between the government and Hurricanes, is solely dependent on how destructive and strong the hurricane is. With the United States being the x-variable (independent) while the Hurricanes being the y-variable (dependent).

The Effects of Hurricanes on Mental Health

As human beings, mental health is a main priority: as it is needed for our survival and sanity. Humanity is driven with logic and ethics- and a key component to allow those drivers operate is to have good mental health. Natural disasters, i.e. hurricanes, depending on how serious it is can in fact pose great risks to human's health, i.e. their mental health. Yasin Civelek (2023) study noted the following:

> Goldmann and Galea (2014) point out that a large proportion of individuals living in disaster-affected counties are likely to suffer from various mental disorders, including post-traumatic stress disorder (PTSD), due to the loss of a loved one or economic resources following the disaster. Unlike acute physical health problems, poor mental health conditions associated with disasters may be persistent over time (Norris et al., 2002). (para 3)

Hurricanes are notorious for it's reputation of mass destruction and ability to take people's lives. Majority of the reasons why people has mental health problems which indubitably last a very long time, is due to the hurricane talking a loved one away from them, and being sunken into a financial hardship. These storms have the power to dismantle and rip away someone's house, and thus leaving the homeowner, homeless. The government will now have to use their funding and part of their GDP to help repair all the damages and house those who lost their home.

Effects of Hurricanes on Pathogens

To put simply, pathogens are organisms that can produce disease(s); it may also be referred to as an infectious agents. With some common causes being viruses, bacteria, fungi, including parasites. It lets one ask the question, how does a hurricane correlate to pathogens and these infectious diseases? Hurricanes are violent storms that bring destruction not just to humans homes/health and a country's economy; but also to the environment. Nature is home to many elements, some in which lives in animals, the ground/soil and other areas, thus when a hurricane comes, these elements can cause a reaction and thus have pathogens being formed. Lisa R. Maness (2019) study recorded the following:

> After Hurricane Sandy, farmlands became flooded and municipal waste treatment plants were under water, which affected the coastal regions of North Carolina in 1999. A variety

> of animal farms flooded, resulting in hogs, turkeys, and chickens drowning and having to be burned in order to prevent the spread of disease. Millions of gallons of manure were released into rivers, thereby contaminating water supplies. Over 300 private wells tested positive for coliform bacteria. One study indicated increases in illnesses from Toxoplasma gondii and adenovirus following Hurricane Sandy in severely affected areas of North Carolina (Setzer & Domino, 2004). Although T. gondii is carried primarily by cats, intermediate hosts include livestock, suggesting that this organism was spread to humans due to flooding of livestock farms. Studies that determine the presence of pathogens in environmental waters after hurricanes can indicate what potential risks there are to people cleaning up or working in the aftermath of hurricanes. (paras 2-4)

This incites that after a hurricane, flooding have began and due to this a large amount of manure (which is toxic and contains diseases and bacteria) was released into the river and contaminating the water supply. So because of this, many humans primarily got pathogenic diseases due to the flooding of farms and the pathogens in the water.

Hurricanes are a dangerous disaster, and one in which that can result into many others, i.e landslides or evening more notoriously, flooding. Flooding can also cause many damages to infrastructure, and can bring forth the lost of lives: While Hurricanes will bring the sheer windspeed and violent rainfall and lighting, it's aftermath flooding can pose more threats, one that is just as severe if not worst, than a hurricane.

Floods

Flooding is an overflowing of water onto land that is typically dry. Floods are the most common and widespread of all weather related natural disasters. They can occur within minutes and can last for several days or weeks typically occurring during heavy rainfalls or when ocean

waves come on shore (NSSL). Therefore it's crucial to take proper precautions considering most home and renters insurance policies don't cover flood damage. To put this into perspective just an inch of water can cause approximately 25 thousand dollars worth in damage to properties (fema gov). Considering these disasters are recurring the cost in damages, decrease in income and assets jeopardize one's financial stability. Generally individuals of lower socio economic status are more susceptible to these damages caused by floods and the rate in which they recover is significantly slower. As a direct result the acceleration of economic disparity is significantly widening.

A recent study by The University of Tokyo (Kawaski and Shimomura, 2024) highlighted an extreme case present within small and medium sized cities in Myanmar. A nation in which both the economy and financial system lack development, limiting job opportunities. This is especially the case during the rainy season in which floods occur more frequently, limiting the citizens' access and ability to work in these flood prone areas. Additionally local financial resources are scarce restricting urban development, infrastructure, administrative services, and education. Due to these extreme circumstances Myanmar citizens of poorer socioeconomic status will have to take on more financial debt. To be more precise the study mentioned that approximately 50 percent of these impoverished citizens possessed some form of financial debt (Kawasaki and Shimomura, 2024). Furthermore several surveys recorded in the city of Bago noted the devastating effects inflation holds on the cost of living for its impoverished citizens. This added pressure prohibits these citizens from accumulating and maintaining valuable assets that could potentially provide relief (Kawasaki and Shimomura, 2024). Implying that the next generation of individuals within this demographic will likely inherit this debt and continue this vicious cycle.

Earth’s rising air temperature and hydrological cycle correlation with flooding

The planet's rising surface air temperature yields an intensification of its hydrological cycle. This particular cycle relates to the continuous circulation of water present in the earth atmosphere system involving evaporation, transpiration, condensation, precipitation, and runoff (NOAA, 2024). Which is directly associated with the risk of river floods, which are projected to increase regionally over the next twenty years due to atmospheric warming (Willner et al, 2018). The economic losses due to these floods will affect regionally heterogeneous losses and gains through propagation within the global trade and supply network. If safety measures aren't implemented, the overall economic losses due to fluvial floods will go up globally by 17 percent within the global trade network (Willner et al, 2018). China will experience greater losses with a total increase of 82 percent, while the United States is primarily affected indirectly through trade relations. A model featured in a study by (Willner et al, 2018) implied that the losses due to fluvial floods will jump to a total of $597 billion U.S. dollars from 2016 to 2035.

Possible Solutions to flooding

The change in land use has a significant effect on floods considering humans have heavily modified natural landscapes across the world. For instance landscapes such as hillslopes have been modified for agricultural production. As a direct result a noticeable difference in flow paths and velocities, water storage, consequently flow connectivity, and concentration times (Rogger et al, 2017). The study also emphasizes the importance of extensively studying the effects of agricultural practices such as drainage, terracing, and forest management relating to floods. In addition to acknowledging how prior experiences or approaches in hydrology, soil and agricultural science, forestry, and geomorphology maximize findings while seeking to expand on current research (Rogger et al, 2017).

Drought

The total amount of Earth's water does not change and continually circulates from place to place inside. Therefore, if one area receives more than average rain and has flooded due to abnormal weather, the other area receives less than average rain and water shortages, or a drought. Human history has been with drought. Most of the events that killed hundreds of thousands of people were war and famine. A drought is one of the most notorious natural disasters caused by long-term water shortages. As history and technology have progressed, the development of irrigation systems could prevent drought damage, and food shortages caused by drought damage could be resolved under the logistic economy system. Drought can also occur when the amount of water required by an area is higher than the average amount of precipitation. This means that even in the desert, it may not be a drought or a drought even if it rains frequently. High atmospheric pressure always exists due to the influence of convection and ocean currents, but prolonged high-temperature and high-pressure weather due to global warming causes more and more droughts and affects crop yield production, spreading plague, and the physical and mental health of humans.

The role of temperature in Drought

Regular and severe droughts generated by global warming have been unpredictable because of their frequent and wide occurrence around the world. Prolonged droughts are affected much more than those associated with droughts of shorter timescale due to extended high-pressure weather and heat waves, especially in the low-latitude regions. Jeong, D. and his research team predict patterns of future droughts by using Regional Climate Model (RCM) simulations from the North American Regional Climate Change Assessment Program. They suggest that long-term and extreme drought events are affected more by future increases in

temperature and potential evaporation and transpiration than short-term and moderate drought events, particularly over the high drought-risk regions of North America (2014). Continuous droughts cause many other catastrophes as byproducts.

Drought and Plague

Water scarcity is linked to a lack of industrial water, which not only lowers production but also depletes crop damage, accompanied by plant viruses which are responsible for tremendous agronomic and socio-economic damages (Munster, M., 2017). In a study "Water Deficit Enhances the Transmission of Plant Viruses by Insect Vectors", a severe water deficit increases the efficiency of aphid transmission of the Cauliflower mosaic virus (CaMV) or the Turnip mosaic virus (TuMV). The rate of vector transmission is significantly increased from water-deprived source plants: CaMV transmission reproducibly increased by 34% and that of TuMV by 100% (Munster, M., 2017). Generally, people think water shortage may prevent the expansion of plagues. Crops do not grow in a water-deprived environment, however, this condition makes it appropriate to carry viruses that are fatal to agriculture, because some viruses need water, not others while crops always need water.

Impacts on our world

Severe droughts are slow-onset and long-duration disasters with far-reaching impacts on the community's economy and environment (Barreau, T., 2017). Drought brings economic losses, infrastructure changes, diminished access to services, environmental degradation, and social network disruptions, impacting California's regional economy directly. Drought-impacted households might perceive physical and mental health effects and might experience financial, or property impacts related to the drought. According to Tracy Barreau's assessment (2017), households reported not having running water (3%– 12%); impacts on finances (25%–39%),

property (39%–54%), health (10%–20%), and peace of mind (33%–61%); worsening of chronic disease (16%–46%); acute stress (8%– 26%); and considering moving (14%–34%). Impacts on finances or property were each associated with impacts on health, peace of mind, and acute stress during the most severe drought in California in 2015 (Barreau, 2017, p.786). The damage will be more severe in the area or countries affected by climate factors and global warming than in California, especially in areas with poor water resources.

Discussion

Climate change and global warming were raised a long time ago, and the consequences are becoming unpredictably frequent and inevitable. This paper highlights the environmental, agricultural, economic, and health trends in the most destructive natural disasters. As you can read, those three disasters are too subversive to bear as not only an individual but also a country. More and more of our taxes and salaries will be spent to survive and to restore lives destroyed by those calamities. The accompanied byproducts like landslides, the spread of plague, and mental disorders such as depression and post-traumatic stress disorder will continue to fill every sector of our lives. Impacts and irregular patterns make an individual think about how we should change our lifestyles and current perspectives on natural disasters.

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