Ensuring the creation of proper disaster risk management in response to climate change

ASEAN+

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Forum: Association of Southeast Asian Nations

Issue: Ensuring the protection of proper disaster risk management in response to climate change

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Introduction

Hurricanes, heavy precipitation, floods, 'sinking' countries and wildfires are all examples of disasters caused by climate change. The amount of disasters related to or caused by climate change is drastically increased. The disasters are already affecting hundreds of millions of people in Southeast Asia, and three-quarters of the cities will be affected. If risk management is not proper, then the deaths, wounded and affected people due to climate change disasters will only further increase.

This research report will give insights into the issue at hand, including the history, consequences it has had and will have, and possible solutions for the issue. It is meant as a rough guide used alongside independent research so delegates may be prepared for the conference and be able to write resolutions as necessary.

Definition of Key Terms

El Niño and La Niña

El Niño and La Niña are opposites. El Niño is a difference in temperature in the Pacific Ocean, the temperature increases. This causes the rain area that is normally above southeast Asia to move to the Pacific Ocean. This causes a dry season in southeast Asia. It typically lasts 6-12 months. La Niña is also a difference in temperature in the Pacific Ocean, but only with La Niña does the temperature decrease. This causes precipitation to increase, and it can last up to 3 years. These events occur every two to seven years, but it is not a regular cycle. Due to climate change, El Niño and La Niña will likely occur more frequently and also become much stronger.

Monsoons

According to National Geographic, a monsoon is "a seasonal change in the direction of the prevailing, or strongest, winds of a region. Monsoons cause wet and dry seasons throughout much

of the tropics.” Many Southeast Asian countries rely on the monsoon’s yearly source of rain for agriculture, but when the monsoons are extremely heavy, they can cause floods, leading to a lot of damage of cities or towns.

Ring of Fire

The Ring of Fire is a strip along the coasts of the Pacific Ocean. In this area, many volcanic eruptions and earthquakes occur. 75% of Earth's volcanoes are placed on this ring, and 90% of all earthquakes occur here. Any country placed on the Ring of Fire is therefore very susceptible to natural disasters, and requires a lot of management of these risks.

Integrated Disaster Risk Management (IDRM) Fund

This fund, a collaboration between the Asian Development Bank and the Government of Canada, was focused on supporting the development of measures to combat natural disasters and ensuring a basis between neighboring countries in the area. The fund was established in 2013 and closed in 2020.

General Overview

Climate change and the disasters caused by it have enormous effects on the economy, politics and health. The disasters caused by climate have increased by a factor of 3 in the past 30 years, with especially coastal countries like Indonesia and the Philippines being affected by these disasters. However, far more people have been affected by disasters in the Southeast region, as well as all over the world. 750 million people have been affected by natural disasters in Asia, and 75% of southeast Asian cities will or have suffered from natural disasters due to climate change.

Climate Change’s Impact on Natural Disasters

As our world’s global temperatures increase, because of vast CO_2 emissions from pollutants and fossil fuels, the potential for more droughts to occur is increased, as well as the intensity of storms. These storms are formed from the rise of moisture and unstable air, and with phenomena such as El Niño and El Niña, these become a lot more dangerous as the global temperatures rise.

A warmer atmosphere and surface of the ocean can also increase wind speeds, creating massive tropical storms, which could have extremely detrimental effects on coastal nations. The warmer global temperature also causes glaciers to melt. This water enters the oceans and causes the sea levels to rise. This causes nations at sea level to have to deal with flooding and its consequences, as

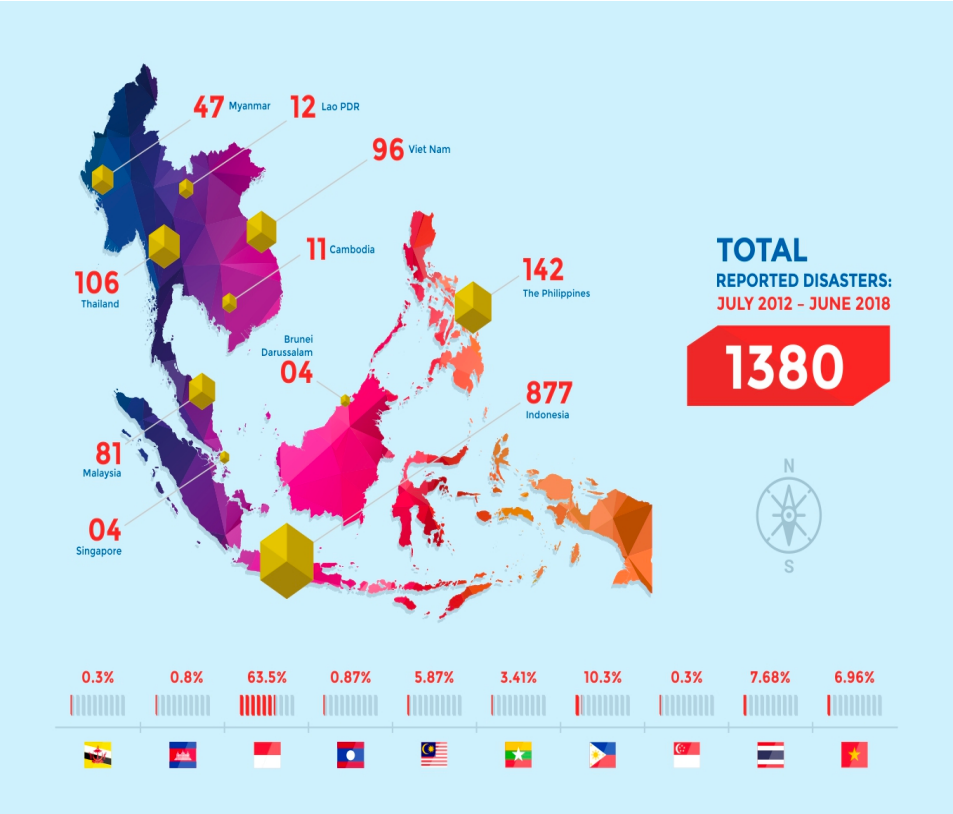
well as having other, higher altitude locations susceptible to erosion and other threats from the water.

Common Disasters Caused by Climate Change

Most coastal countries are affected by rising sea levels due to climate change, however, landlocked countries can also suffer from this. Rivers that run through countries may also have a higher water level than normal and can also flood. If these rivers or oceans rise and flood the countries, the consequences can be extremely dangerous and detrimental to the citizens in the country, as well as nature. Some countries are also 'sinking', which means the country is slowly disappearing into the sea/ocean. If the current state of the climate does not change, many citizens will lose their homes and their land, leaving people displaced and in dangerous situations.

Due to higher air temperature and a higher evaporation rate there is more water vapor in the air. This results in heavier storms and precipitation, which can be extremely dangerous in large amounts. An effect of this is also that "dry seasons" in countries are prolonged, which can lead to droughts and other dangerous situations for populations. This means that throughout the entire year, countries can be susceptible to two completely different types of natural disasters, and can be ill-equipped to deal with these, resulting in a high death toll and a lot of damage that needs to be repaired. Especially in the monsoon areas like Vietnam, Thailand, Laos, and Cambodia, this is a huge problem. This also makes agriculture very difficult, resulting in hunger or even famine amongst the population.

Wildfires are common disasters caused by climate change as well. They burn down entire forests and are very hard to extinguish. They are unpredictable and create large amounts of smoke, which is very harmful to the bodies of any citizen or population in the area. Wildfires are especially common in mainland Southeast Asia (Lower Mekong Basin). The organization Wildland Fire Special Research Unit (WFSRU) was established by ASEAN in 2017, to research and combat these fires. The Regional Fire Management Resource Center – South East Asia (RFMRC-SEA) is another organization that manages the wildfires in the Lower Mekong Basin. Below is an overview of natural disasters that have occurred in the region of Southeast Asia.



Infographic of Natural Disasters in ASEAN region

Four Steps to Disaster Risk Management

Currently, there are four steps to disaster risk management. The first one is *mitigation*. This is preventing or reducing the impact and consequences of the disaster. The second step is *preparedness*, preparing for the disaster. You could think of this as educating citizens and making sure to have supplies stocked up. The third one is a *response*, which is immediately after the disaster. This includes search and rescue missions and providing resources to citizens. Finally, after the response, you need a *recovery*. This means rebuilding houses/buildings, providing financial aid to people in need, and mostly just trying to recover the country to the state it was before the disaster.

A lot of countries that deal with many natural disasters a year have these disaster risk management policies and projects in place. However, these may be underdeveloped or ineffective, and without the proper management of these disasters, the number of deaths and injuries can increase significantly, as well as the amount of infrastructure and damage done to an area. Without proper disaster risk management, countries can take a very long time to recover from disasters that are

almost impossible to prevent, or potentially never recover at all, which is very detrimental to its citizens and to the development of the nation.

Timeline of Key Events

Date	Event
14th of December 1971	Creation of the United Nations Disaster Relief Office (UNDRO)
1990-1999	International Decade for Natural Disaster Reduction
23-27th of May 1994	1st United Nations World Conference on Disaster Risk Reduction. Adopted the: Yokohama Strategy and Plan of Action for a Safer World
22th of December 1999	Creation UN Office for Disaster Risk Reduction (UNDRR)
18-22th of January 2005	2nd United Nations World Conference on Disaster Risk Reduction. Adopted the: Hyogo Framework for Action 2005-2015
14-18th of March 2015	3rd United Nations World Conference on Disaster Risk Reduction. Adopted the: Sendai Framework for Disaster Risk Reduction 2015-2030

Major Parties Involved

Indonesia

Indonesia sits on the Ring of Fire, meaning it is extremely susceptible to natural disasters, such as volcanic eruptions, earthquakes, tsunamis, floods, landslides, drought, and forest fires. Indonesia's disaster management is still not as advanced or as established as they would like, and despite the budget increasing heavily over the recent years for this management, the death toll from these disasters continues to rise yearly. Indonesia would therefore benefit extremely from having its disaster management policies updated and protected through this committee.

Thailand

Thailand is another extremely vulnerable state when it comes to natural disasters, and is especially prone to flooding. In 2023, on December 22, extremely heavy rainfall caused southern

parts of Thailand to flood, impacting over 70,000 people and killing dozens. As of 2020, Thailand's disaster risk management was deemed solid and comprehensive by the UNDRR, but as these disasters continue to happen, it is extremely important for Thailand to maintain these policies.

The Philippines

The Philippines is very highly prone to natural disasters, with over 50% of its land and over 70% of its people left exposed to disasters like floods, droughts, cyclones, tsunamis, landslides, and earthquakes. According to the Climate Change Knowledge Portal, the Philippines has "gone through 565 natural disasters since 1990, killing 70,000 people and costing $23 billion in damages." Because of its vulnerability to these disasters, it is in the Philippines' best interests to find a proper way to manage these disasters.

UNDRR (United Nations Office for Disaster Risk Reduction)

Established in 1990, the UNDRR is dedicated to ensuring that countries and companies know how to reduce the risk of disasters in their areas. Their main goal is to transition away from managing disasters, and towards managing the risks. The UNDRR focuses on stopping disasters before they happen, or at least minimizing the impacts of them, and therefore plays an important role in the issue at hand.

Possible Solutions

As many countries that are affected by natural disasters that have been caused by climate change already have disaster risk management policies in place, some possible solutions to ensuring the protection of these are explained below.

One possible solution is to make sure that countries (in the Southeast Asian region, and all over the world) are able to communicate with one another about policies and solutions they have found to their own problems in their countries. This would ensure global cooperation, and could potentially help Less Economically Developed Countries deal with disasters and their risks, through the help of more developed countries' means and ideas. This has been seen to have worked through the Integrated Disaster Risk Management (IDRM) fund in 2013.

Another possible solution is to make sure that all policies and documents regarding natural disasters, risks, and measures that need to be taken are readily available and are of easy access to the citizens of the countries, ensuring transparency and collaboration between governments and

citizens. Governments could also call upon university students or other educators to help with brainstorming and managing these risks, focusing on reducing the impact of the disasters on the population and ensuring safety for everyone during these times. It is also important that emergency responders are trained and know how to deal with the effects of natural disasters, to minimize the casualties as much as possible.

Further Reading

This link from the UNDRR leads to a paper, which, among others also uploaded by UNDRR, gives important insight on how to go about disaster risk management in the Southeast Asian region, and could be interesting to delegates for their independent research.
https://www.undrr.org/publication/disaster-risk-reduction-asean-region-understanding-and-assessing-systematic-risks

Bibliography

"ASEAN vision 2025 on Disaster Risk Management." *Asean*, https://asean.org/wp-content/uploads/2021/01/fa-220416_DM2025_email.pdf. Accessed 28 December 2023.

Blair, James P. "Monsoon." *National Geographic Education*, https://education.nationalgeographic.org/resource/monsoon/. Accessed 28 December 2023.

"Climate Change in South-East Asia: Where Are We and What Are We Bound For? - Our World." *Our World*, https://ourworld.unu.edu/en/climate-change-in-south-east-asia-where-are-we-and-what-are-we-bound-for# Accessed 28 December 2023.

"Contact us." *Asian Disaster Preparedness Center*, https://www.adpc.net/igo/contents/adpcpage.asp?pid=2. Accessed 28 December 2023.

"Disaster Risk Reduction in Thailand." *UNDRR*, https://www.undrr.org/media/48642/download?startDownload=true. Accessed 28 December 2023.

Emergency Management in the United States. “04 Unit 4.” *FEMA Training*, https://training.fema.gov/emiweb/downloads/is111_unit%204.pdf. Accessed 28 December 2023.

Gong, Lina. “Climate-induced Disasters as an Evolving Threat to Southeast Asia's Maritime Security | Asia Maritime Transparency Initiative.” *Asia Maritime Transparency Initiative*, 22 November 2022, https://amti.csis.org/climate-induced-disasters-as-an-evolving-threat-to-southeast-asias-maritime-security/. Accessed 28 December 2023.

“Indonesia: natural disasters risk index by type 2023.” *Statista*, 15 September 2023, https://www.statista.com/statistics/920857/indonesia-risk-index-for-natural-disasters/. Accessed 28 December 2023.

“The Integrated Disaster Risk Management Fund.” *Asian Development Bank*, https://www.adb.org/documents/integrated-disaster-risk-management-fund. Accessed 28 December 2023.

Kurniawan, Shintya, and William Shea. “Vol 40-Total Reported Natural Disaster in Southeast Asia.” *AHA Centre - The Column*, 3 August 2018, https://thecolumn.ahacentre.org/posts/insight-posts/vol-40-total-reported-natural-disaster-in-shouteast-asia/. Accessed 28 December 2023.

Livingston, Ian. “Wildfire.” *Wikipedia*, https://en.wikipedia.org/wiki/Wildfire#Impacts_on_the_natural_environment. Accessed 28 December 2023.

“Our work.” *UNDRR*, https://www.undrr.org/our-work. Accessed 28 December 2023.

“Philippines - Vulnerability | Climate Change Knowledge Portal.” *Climate Change Knowledge Portal*, https://climateknowledgeportal.worldbank.org/country/philippines/vulnerability. Accessed 28 December 2023.

PRAKASH, AMIT. “The Impact of Climate Change in Southeast Asia – IMF Finance & Development Magazine | September 2018.” *International Monetary Fund*, 2018,

https://www.imf.org/en/Publications/fandd/issues/2018/09/southeast-asia-climate-change-and-greenhouse-gas-emissions-prakash#. Accessed 28 December 2023.

"Ring of Fire." *National Geographic Society*, 19 October 2023, https://education.nationalgeographic.org/resource/ring-fire/. Accessed 28 December 2023.

"Six ways Southeast Asia strengthened disaster risk management." *Asian Development Bank*, 4 May 2021, https://www.adb.org/news/features/six-ways-southeast-asia-strengthened-disaster-risk-management. Accessed 28 December 2023.

"Thailand - floods in southern provices (DG ECHO, media) (ECHO Daily Flash of 26 December 2023) - Thailand." *ReliefWeb*, 26 December 2023, https://reliefweb.int/report/thailand/thailand-floods-southern-provices-dg-echo-media-echo-daily-flash-26-december-2023. Accessed 28 December 2023.

"Thailand - Vulnerability | Climate Change Knowledge Portal." *Climate Change Knowledge Portal*, https://climateknowledgeportal.worldbank.org/country/thailand/vulnerability. Accessed 28 December 2023.

Torti, Jacqueline. "Floods in Southeast Asia: A health priority." *NCBI*, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3529313/. Accessed 28 December 2023.

U.S. Geological Survey. "How can climate change affect natural disasters? | U.S. Geological Survey." *USGS.gov*, https://www.usgs.gov/faqs/how-can-climate-change-affect-natural-disasters. Accessed 28 December 2023.

"What are El Nino and La Nina?" *National Ocean Service*, 24 August 2023, https://oceanservice.noaa.gov/facts/ninonina.html. Accessed 28 December 2023.

"World Conference on Disaster Risk Reduction." *Wikipedia*, https://en.wikipedia.org/wiki/World_Conference_on_Disaster_Risk_Reduction. Accessed 28 December 2023.