

Forum:	Environment Committee
Issue:	Creating Measures to Curb the Damage Caused by Extreme Weather Events
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Introduction

The effects of environmental damages should be a concern for every country around the world. The issues that are now the questions of the environmental committee are not the ones that could be blamed on a specific party, but to all off humankind, living on this world, choosing to be a spectator, instead of being an initiator. At first glance, damages caused by extreme weather events may not seem an issue that can be created by humans, however as much as they are natural disasters, they are also the consequences of climate change due to global warming.

Extreme weather events are different in the sense that they are usually unpredictable, unseasonal and cause extreme damage to the area that is under their radius of influence. The aftermath of these events are disastrous; people are left homeless, children lose access to schools; food supplies become scarce, and humanitarian aid arrives later than when it is needed. On top of consequences as such, these extreme weather events create damages that cost millions of dollars to redeem. These extreme weather events include storms, hurricanes and floods and the efforts to solve the damages created by these events mainly focus on restoring and reestablishing people's living conditions and the state of the environment.

Recent events that relate to this issue are the ones that you are already familiar about. The hurricanes that hit the coasts of United States of America and some parts of South America annually, are the most famous ones you should be informed about. Hurricane Sandy hit the coasts of New York City and New Jersey in 2012, causing a \$70 billion loss (Rate). Hurricane Matthew hit Haiti and caused over 600 deaths on October 2016 (A View). The latest of these hurricanes were rated 4 and 5 on the Saffir-Simpson category which is used to demonstrate the power of the hurricanes, category 1 showing the lowest and category 5 showing the highest sustained wind and degree of possible damage. These hurricanes were Harvey and Irma which hit Texas and Florida in August and September of 2017 respectively. Hurricane

Irma caused at least \$100 billion damage(Hurricane Irma) while Hurricane Harvey caused a \$125 billion loss(Hurricane Harvey). The increase in the consistency and the degree of damage of these hurricanes should give you a clue on the importance of the subject.

Definition of Key Terms

Extreme weather events: The natural disasters that are induced by weather conditions or human activity which include heat waves, drought, heavy downpours, floods and hurricanes.

Disaster Risk Reduction: According to United Nations Office for Risk Reduction (UNISDR), Disaster risk reduction “is the concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters. Reducing exposure to hazards, lessening vulnerability of people and property, wise management of land and the environment, and improving preparedness and early warning for adverse events are all examples of disaster risk reduction” (Disaster).

Storm: The fluctuations that a strong wind can cause in the sea and on desert sands. Storms carry a possibility of turning into hurricanes if the speed of the wind passes 120 km per hour.

Drought: Shortage of water due to prolonged periods of low or even no amount of rainfall over an area.

General Overview

The path to understanding the subject and moving on to finding the solutions lies in knowing the root of the problems. Humans can't prevent hurricanes or tsunamis, but there are ways to prevent people from losing their lives because they didn't have the necessary equipment or knowledge and decreasing the costs that are billions of dollars which many countries can't afford in the first place. “According to the Germanwatch Global Climate Risk Index Honduras, Myanmar and Haiti were the countries most affected by extreme weather events between 1996 and 2015. Altogether, more than 528 000 people died as a direct result of nearly 11 000 extreme weather events; and losses between 1996 and 2015 amounted to around 3.08 trillion US\$. Of the ten most affected countries (1996–2015), nine were developing countries in the low income or lower-middle income country group, while only one was classified as an

upper-middle income country” (Kreft). This shows that undeveloped countries seek more attention and assistance from developed countries and organisations in resolving the problem.

The major problems of undeveloped nations are the lack of knowledge in the area of risk prevention and the lack of money to cover for the measures that should be taken to prevent the extreme weather events. Risk reduction activities are usually multiple step programs that include building hazard-resistant structures, developing hazard buffers, developing culture of prevention and resilience, improving warning and response system and building development policies through feedback from already existing measures. This multistep program covers the general topics on the issue but can't be applied by undeveloped nations because of its cost and unawareness. Many developed countries already have elaborate risk reduction plans or measures to acquire financial aid to restore the damage. One example is the Caribbean Catastrophe Risk Insurance Facility (CCRIF). “CCRIF provides Caribbean governments with insurance coverage against monetary losses from hurricanes and earthquakes. It makes countries more independent of international aid, which normally takes months to arrive in the affected region and; second, it ensures that countries hit by catastrophic events are able to maintain stability and pay their employees, so that recovery as well as reconstruction efforts can be put in place more quickly”(Un University). In order to aid undeveloped countries, one should find a solution to bring together the countries that is willing to make financial aid or assistance and the countries that seek aid. Another example is Turkish Catastrophe Insurance Pool. Public sector is responsible for raising awareness and creating the framework of action while private sector is responsible for the financial stability, reinsurance and research on extreme weather events and disasters(Un University). A healthy relationship and an action plan between public and private sectors is a solution that is proven to be one of the most beneficial for a country. The agreed outcome of The Third United Nations World Conference on Disaster Risk Reduction was that “open data and information sharing, and more effective implementation of regulation and voluntary standards” as well as “building of trust between the private sector and government bodies throughout development planning and disaster management cycles at national and local levels” (THIRD) should be the number one priority in risk management . In addition to this statement, Disaster Risk Reduction Private Sector Partnership (DRR-PSP) confirmed that “the 96 members of this existing partnership are committed to making available their risk management expertise to local and national governments to support the implementation of the post 2015 framework for disaster risk reduction” (THIRD).

The issues that are relevant for both developed and undeveloped nations include a wide range of factors such as lack of insurance, managing environmental conservation, preventing floods and increasing awareness. Both developed and undeveloped nations suffer from financial problems because of their **lack of insurance**, however undeveloped nations are more affected because this problem is combined with

high amounts of debt and limited financial assistance and as a result, many of them cannot raise enough money to restore the damage.”In the richest countries about 30% of losses in the period 1980-2004 (totalling about 3.7% of Gross National Product — GNP) were insured. Alternatively, in low-income countries, only about 1% of losses (amounting to 12.9% of GNP) were insured” (Un University).

Deforestation and unstable soils is one of the most important causes of damage created by these events. Forests regulate rainfall and keep the soil intact, as well as absorbing CO₂, reducing the gas that is related to global warming. Mocoa, Colombia experienced a landslide mainly caused by deforestation and unstable soil. Heavy rainfall (129 mm of rainfall in a 24 hour period) in March caused the landslide that resulted in the death of 300 people and destruction of hospitals and infrastructure(Weather). **Floods** are also a great concern, as a UNISDR report issued in 23 November 2015 shows that “over the last 20 years, 90 percent of major disasters have been caused by 6,457 recorded floods, storms, heat waves, droughts and other weather-related events”(UN Report). Floods can be more damaging than expected, but they are also preventable. In areas prone to flooding, construction of new buildings according to flooding levels is extremely important. Presence of wetlands and wooded areas are also important factors in slowing down waters. Thacka Beck established a flood alleviation scheme after a severe flooding in 2009. With the flood alleviation scheme, Thacka Beck replaced culverts underneath the streets with a 76.000 m³ reservoir and while the scheme cost \$5.6 million, it resulted the risk of flooding by 20%(Grant). Others important factors include improvement of **flood warning systems**, and **temporary barriers**. Two important and recent examples are from UK and USA. The Environment Agency established in UK uses “a range of temporary or “demountable” defences in at-risk areas. These can be removed completely when waters recede”(Grant). Texas Medical Center “invested \$50 million in floodgates, prompted by \$2 billion in flood damages it suffered from Tropical Storm Allison in 2001. The floodgates proved themselves during Hurricane Harvey, and the hospital complex remained dry and operable”(Lawson). **Increasing awareness** is the most ignored but one of the most effective solutions to this issue. Preventing disasters and implementing risk reduction plans requires immense amounts of research and analysis that are exclusive to every different area. “Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment”(Sendai). While this is a more wide-range example, people should be informed about the structure of the buildings that they reside in and become familiar with their community’s warning systems.

Extreme weather events are natural disasters but acknowledging the human factor is very important since the increase in these weather events are the results of climate change. Heat waves, droughts and hurricanes are the weather events that recently became more and more damaging. National Climate Assessment states that “the recent heat waves and droughts in Texas (2011) and the Midwest (2012) set records for highest monthly average temperatures.” The Texas 2011 Drought set this record for more

than 100 days over 38 degrees Celsius. The heat and drought depleted water resources and contributed to more than \$10 billion in direct losses to agriculture alone(Rate).The most recent and significant step in fighting the threat of climate change was taken in the Paris Agreement. This agreement targeted to keep the global temperature rise between 1.5-2 degrees Celcius for the century. “Implementation of the Paris Agreement is essential for the achievement of the Sustainable Development Goals, and provides a roadmap for climate actions that will reduce emissions and build climate resilience(UN and Climate).” The increase in damages and force of Atlantic hurricanes since 1980s are the outcomes of rises in the temperature. Due to rising sea surface temperatures in the regions that Atlantic hurricanes move through, storm surges reach farther inland as they ride on top of sea levels that are higher due to warming.

Major Parties Involved and Their Views

USA

In 2016, USA spent over \$30 billion to foreign humanitarian aid(Myers). However with the Trump presidency, they are left as the only country that hasn't signed the Paris Agreement to tackle climate change.(Nace)

Germany

In 2016, Germany spent over \$20 billion to foreign humanitarian aid, making it the second country on the list of countries that spent the most for foreign aid.(Myers)

Japan

Due to its geographical location, Japan has witnessed but successfully recovered from a variety of natural disasters. These disasters range from earthquakes to tsunamis and floods. The reason for their successful recovery is their detailed and thought-out disaster prevention system that they give the utmost importance to. On September 1st they hold the Disaster Prevention Day which includes evacuation drills. Their tsunami warning system was set up in 1952 which continued to improve and now consists of 300 sensors including 80 aquatic ones. City planning is made accordingly and emergency drills are organized by public and private organizations as well. The east coast also have shelters and floodgates that are also important factors in prevention and aid.(Rauhala)

East Africa

According to a UN report issued in 2015, drought affects Africa more than any other continent. There are 136 events that have occurred between 1995 and 2015 which 77 of them alone are droughts that affected East Africa. (UN Report)

Chile

Chile withstands abnormal amounts of rainfall more than once a year. The disaster that is created by the unmanageable amount of rainfall affects crops, economy, education and transport greatly. According to a case study made in Chile, lack of disaster prevention mechanism is the most significant problem and the country needs improvement at the local level and reinforcement of agencies associated with disaster management. These solutions would ensure cooperation and aid management in society and increasing prevention systems. (Aldunce)

Timeline of Events

15 September-18 September 2004	Hurricane Ivan
2005	Hyogo Framework for Action 2005-2015
24 August 2005	Hurricane Katrina
2010	Floods in Pakistan
2011	Floods in Thailand
22 October-2 November 2012	Hurricane Sandy
18 March 2015	Sendai Framework 2015-2030

2015	The Third United Nations World Conference on Disaster Risk Reduction
December 2015	Paris Agreement
28 September- 10 October 2016	Hurricane Matthew
31 August-11 September 2017	Hurricane Harvey
30 August-6 September 2017	Hurricane Irma
16 September-3 October 2017	Hurricane Maria
6 November-17 November 2017	UNFCCC COP23 in Bonn (UN Framework Convention on Climate Change, Conference of the Parties)

UN Involvement

UNISDR(United Nations Office for Disaster Risk Reduction): “UNISDR’s mandate has been defined by a number of United Nations General Assembly Resolutions, the most notable of which is “to serve as the focal point in the United Nations system for the coordination of disaster reduction and to ensure synergies among the disaster reduction activities of the United Nations system and regional organizations and activities in socio-economic and humanitarian fields.”(Our Mandate)

UNFCCC(United Nations Framework Convention on Climate Change-Conference): UNFCCC is a climate change conference. The negotiating process on climate change revolves around the sessions of the Conference of the Parties to the UNFCCC (COP), which meets every year to review the implementation of the Convention. The COP adopts decisions and resolutions, published in reports of the COP. Decisions taken by the COP make up a detailed set of rules for practical and effective implementation of the Convention.

Relevant UN Documents

Hyogo Framework for Action 2005-2015

Natural Disasters and Vulnerability (22 February 2005,59/233)

Natural Disasters and Vulnerability (22 February 2005,63/217)

Sendai Framework for Disaster Risk Reduction 2015-2030, 18 March 2015

United Nations Plan of Action on Disaster Risk Reduction for Resilience, January 2017

Treaties and Events

Yokohama Strategy and Plan of Action for a Safer World

This plan of action was the output of the World Conference on Natural Disaster Reduction, held in Yokohama, Japan, from 23 May to 27 May 1994 (Yokohama). It provides guidelines for natural disaster prevention, preparedness and mitigation. It was an important first step in implementing solutions for disaster reduction since it was negotiated in the first world conference on natural disaster reduction.

Kyoto Protocol

Kyoto Protocol is an international agreement to solve the question of global warming and aims at reducing carbon emission. The protocol was presented by UNFCCC and while it was adopted in Kyoto, Japan on 11 December 1997, it entered force on 16 February 2005. The protocol said to be placing "a heavier burden on developed nations under the principle of "common but differentiated responsibilities". Later it Doha Amendment to the Kyoto Protocol was adopted in Qatar on 8 December 2012(UN Framework). Kyoto Protocol was seen as an important first step towards global emission reduction since it gave responsibilities to developed nations.

Sendai Framework for Risk Reduction

The framework is the second implementation of a risk reduction plan, the first being the Hyogo Framework that was implemented between the years 2005 and 2015. Sendai Framework is now the

longest running risk resolution plan which is aimed to be implemented from 2015 to 2030. Stating that the nation “has the primary role to reduce disaster risk but that responsibility should be shared with other stakeholders including local government, the private sector and other stakeholders”(Sendai) it focuses on developing risk management and increasing partnership and participation of private and governmental institutions to humanitarian aid.

Evaluation of Previous Attempts to Resolve the Issue

Copenhagen Climate Change Conference

The climate summit was held in Denmark and hosted 45,000 people in 2009. It was one of the biggest conventions that gathered to eliminate climate change and relating issues. However the conference was a disappointment since the parties couldn't manage to settle on an agreement. This was due to many reasons such as US not being able to take action without the support of the congress, the weather in the host country and EU's political relations with US (Why).

The Third United Nations World Conference on Disaster Risk Reduction

The Third UN World Conference was organized by UNISDR and took place in Sendai, Japan on 14-18 March 2015. 6,500 people participated in the event. It proved useful since it started the negotiations and led to the implementation of Sendai Framework 2015-2030.

UNFCCC COP23

As mentioned above, UNFCCC is a climate change conference and COP23 is the most recent of the annually held conferences. Held on October 2017, COP23 focused on the implementation of Paris Agreement and how these actions will include “transparency, adaptation, emission reductions, provision of finance, capacity-building and technology”(Negotiation). An important statement was made when Syria took an action to sign the Paris Agreement while US firmly wanted to withdraw. US's harder stance on the climate issues gave way to China to take on responsibility. A collaboration between EU, Canada and China and China's promise of lending more support to international climate processes was one of the most important outcomes of the conference (Timperley).

Possible Solutions

General overview of the report mainly outlines the issues to be tackled on the path of creating a concrete and useful resolution. However there are some points that are left out that could also prove beneficial in composing a resolution. To increase awareness in the community and to ensure their safety, there are few factors that should be predetermined by the government and made accessible to society. These include forecasts, emergency radio channels, early warning systems, drills, shelters that meets the requirements of the National Storm Shelter Association(NSSA), disaster safety plans that is implemented by public and private buildings like hospitals, schools and workplaces and the local disaster preparedness plan. The lack of any of these basic necessities calls for resilience plans and risk management plans to be implemented and if they already exist, they should be improved.

Cluster system is a current international humanitarian coordination system and they are groups of humanitarian organizations that have clear responsibilities for coordination on areas damaged by natural disasters (What). While it is a useful step in coordinating the organizations, there are a few points in the system that could be improved. While undeveloped nations rely on these humanitarian organizations, the country should also be able to sustain itself to a certain capacity and the local organizations should be coordinated within the country. A solution could be establishing a disaster prevention organization within the country that would take the main responsibility of organizing conferences, finding private sector partners, establishing framework of actions that should be taken to improve facilities, building plans, emergency plans and international relations on risk management and humanitarian aid.

The key to achieving a beneficial relationship between public and private investors is to construct a framework that would define the responsibilities of both of these sectors. Risk management plans and insurance policies should be implemented as well as encouraging regional buy-ins and having professional consultation, research and field area teams to cover any problems that would emerge before, during and after an extreme weather event.

Countries should implement hazard mitigation programs to eliminate any structural or constructional problems. These mitigations projects can range from fixing drainage problems to reinforcement of buildings, construction of shelters, constructing temporary flood barriers and improving infrastructure.

Researches in undeveloped countries should be more consistent and addressed more thoroughly in order to become more informed about the geographical conditions of the area. The actions that could be taken are increasing transparency in these researches, developed countries making the costs of natural

disasters available to any country, decreasing land use and urbanization in areas that are prone to disasters, like coastal regions, and using advanced satellite imagery.

Notes from the Chair

The issue of creating measures to curb the damage caused by extreme weather events is one that has a lot of material and potential but also one that has solutions that are easier said than done. The main reason that we still have to find a solution to this issue is that while the powerful nations are able to recover from these disasters, undeveloped nations are not able to do so. This creates a dilemma since resolving these issues depend on getting financial aid, which rely on the will and generosity of powerful nations. This is why you need to consider the importance of the relations between nations and creating mutual advantages for all countries involved. This being said, there are plenty of areas that need improvement, revision and implementation on this subject. Don't forget the fact that these extreme weather events are a problem to many nations and affect millions of people around the world and their frequency increases day by day. For effective debating lobbying groups can divide into different subjects such as: providing funding and financial aid for undeveloped nations, solutions for deforestation and environmental damage, implementation of risk management and raising awareness.

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