



Research Report Global Mayors Forum

The question of limiting damage and
casualties during natural disasters

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Introduction

Humankind has always had to cope with natural disasters. However, the number of reported natural disasters, such as hurricanes, floods, and tornadoes, has increased significantly; the number of reported natural disasters between 2000 and 2009 is for instance three times number of natural disasters that occurred between 1980 and 1989. Some natural disasters cause little damage due to, for example, measures taken in case of extreme weather events. Other disasters can, however, cause tremendous material and non-material damage. Therefore, it is crucial to make sure that any casualties or damage caused by natural disasters are reduced to the minimum.

The Global Mayors Forum

The Global Mayors Forum (GMF) is one of the newest committees at MUNA. The committee is based on the Global Parliament of Mayors (GPM), which first met in Bristol and London in 2015. About 100 mayors from all over the world gathered to discuss global challenges that every city faces and that can best be solved together. The GPM is an initiative of Professor Benjamin Barber, who is the author of the book 'If Mayors Ruled the World'. In his book, Barber states that mayors of the biggest cities of the world are better equipped to deal with the global problems of the 21st century than sovereign nation states themselves.

At MUNA, we put this idea to the test. Delegates in the GMF do not represent nations or states, which is the case in all the other committees, but mayors of the biggest cities in the world. Together, all the mayors will discuss and try to solve intricate and pressing urban issues of the 21st century.

In the GMF, delegates do not have to prepare resolutions beforehand, as the resolutions will be created during the debates. This is called an ad-hoc committee. Therefore, it is *crucial* to do thorough research on all the topics, for instance through writing policy statements. Good knowledge is essential, as you will be representing the political perspective of your city during these debates. Due to the fact that the GMF is an ad-hoc committee, lobbying time before the debates will be shorter and there will be more time to focus on the resolutions themselves.

Keywords

Natural disasters:

Natural events that kill or injure a lot of people and cause a lot of damage

Material / tangible damage:

Harm or injury to concrete objects, such as houses, cars, and infrastructure that is easily expressed in money

Non-material / intangible damage:

Harm or injury that is not directly linked to property and not easily expressed in money, such as grief or loss of face.

Factors of production:

Factors that people use to produce good and services. They are the building blocks of an economy. They can be divided into:

- Capital: possessions such as buildings, money and infrastructure
- Land: natural resources used in production

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- Labour: physical work
- Entrepreneurship starting your own business with your own resources

Infectious diseases:

Diseases that are caused by pathogenic microorganisms

Population displacement:

Forced movement of people from their locality or environment to a new place

Typhoon:

Tropical storm that is formed over the Northwest Pacific Ocean

Hurricane:

Tropical storm that forms over the North Atlantic Ocean and Northeast Pacific

Cyclone:

Tropical storm that is formed over the South Pacific and Indian Ocean

Hydrological disasters

Disasters that originate from the currence, movement, and distribution of water, such as hurricanes

Climatological disasters

Disasters that are caused by extreme weather conditions, such as wildfires and drought

Geophysical disasters

Disasters that originate from solid earth such as volcano eruptions and earthquakes

Biological disasters

Disasters that are caused by organic vectors such as insect plagues

Overview

Natural disasters are defined as natural events, which include floods, hurricanes, droughts, limnic eruptions, avalanches, landslides, blizzards, extreme heat waves, tornadoes, volcanic eruptions, earthquakes, or tsunamis, which kill or injure a lot of people and cause a lot of damage. They can be divided into four categories:

- Hydrological disasters
- Climatological disasters
- Geophysical disasters
- Biological disasters

It is crucial to clarify that most natural disasters are not *directly* caused by human activity. Man-made wildfires are, for instance, not regarded as natural disasters.

According to a study of the United Nations Food and Agriculture Organisation (FAO), natural disasters have caused a total of 1.5 trillion dollars in damages worldwide between 2003 and 2013. During that same period, more than two billion people (2.023 billion) have been affected by natural disasters, while over 1,15 million people have been killed as a result of natural disasters.

A large part of these damages can be interpreted as damage to the factors of production. Capital assets such as housing, schools, factories and equipment, roads, dams and bridges are often lost or damaged as a consequence of natural disasters. Import and export of products may also come to a halt due to natural disasters. In this, poorer countries are more likely to be affected, as they possess fewer effective

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resources to prepare for natural disasters.

The overall health of a population is also impacted by natural disasters. The displacement of people as a consequence of natural disaster creates the biggest health risk, not the extreme event itself. People namely often flee to safe places. Those places are often crowded and therefore vulnerable to the spread of infectious diseases. Diseases that are mostly affiliated with natural disasters are diarrheal diseases, acute respiratory infections, malaria, leptospirosis, measles, dengue fever, viral hepatitis, typhoid fever, meningitis, as well as tetanus and cutaneous mucormycosis.

To limit the damage done by natural disasters, many different solutions have been proposed. A few examples are:

- Constructing buildings that are natural disaster resistant. They are especially designed to withstand extreme events such as hurricanes and tornadoes;
- Constructions such as dams have been built to regulate water;
- Informing people about natural disasters has also been frequently done; In Japan, for instance, an annual exercise is held at schools all over the country that instructs what to do in the situation of a natural disaster;
- Vaccination against diseases that often occur after natural disasters

Even though many of these measures have proven to work, natural disasters still cause many casualties and a lot of damage. Some countries do, for instance, not have enough manpower to manage all the tasks. In addition to that, since natural disasters can vary greatly in nature, there is no universal blueprint that can be used everywhere around the world. Therefore, in addition to the existing ideas, new solutions need to be proposed to make sure that natural disasters cause less damage and casualties to an area.

Timeline of Events

This is a timeline of the most deadly natural disasters in modern history (=post 1900).

1920: Earthquake in China, 273,400 deaths
1923: Earthquake in Japan, 143,000 deaths
1931: Floods in China, 1,000,000 – 4,000,000 deaths
1935: Floods in China, 145,000 deaths
1970: Cyclone in Bangladesh, approx. 500,000 deaths
1975: Typhoon in China, 229,000 deaths
1976: Earthquake in China, 242,769–655,000 deaths
1991: Cyclone in Bangladesh, 138,866 deaths
2004: Earthquake and tsunami in the Indian Ocean, 227,898 deaths
2010: Earthquake in Haiti, 160,000 deaths

Resolution

During the debate, you should construct resolutions that represent the view of your city. Despite the fact that you should always keep the needs in mind of your own city, it is possible to make concessions when merging resolutions with other cities. Please note that proper/thorough research should be done to allow appropriate implementation of arguments, clauses and ultimately resolutions during the debate.

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Links and sources

The following links may be helpful during your preparations:

- <https://www.sciencedirect.com/science/article/pii/S2212094715300347>
- <https://ourworldindata.org/natural-catastrophes>
- See page 64 for a general overview
<http://weltrisikobericht.de/wp-content/uploads/2016/08/WorldRiskReport2016.pdf>
- <http://www.fao.org/3/a-i5128e.pdf>
- <https://www.thebalance.com/cost-of-natural-disasters-3306214>
- https://eciu.net/assets/Reports/ECIU_Climate_Attribution-report-Dec-2017.pdf
- <https://www.stlouisfed.org/education/economic-lowdown-podcast-series/episode-2-factors-of-production>
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2725828/>
- <https://www.tandfonline.com/doi/full/10.1586/eri.11.155>
- <https://unchronicle.un.org/article/economic-recovery-after-natural-disasters>
- <http://www.nilim.go.jp/english/annual/annual2012/114.pdf>
- <https://borgenproject.org/are-natural-disasters-getting-worse/>
- <https://www.statista.com/statistics/510959/number-of-natural-disasters-events-globally/>
- <https://www.unicef.org/drought/drought-countries.htm>
- <https://www.ifrc.org/en/what-we-do/disaster-management/about-disasters/definition-of-hazard/>