



## Committee: Environment

### Question of: Preventing Natural Disasters and Reducing their Effects

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#### Introduction:

Natural Disasters are a yearly cause for deaths, injuries, hospitalizations and grief to the people living on this earth. It is only understandable that the UN wants to improve the situation as much as possible, which is why the Environment Committees will be debating this issue. Natural disasters, such as hurricanes, floods or earthquakes, are occurring on a regular basis, calling for immediate action. The delegations are expected to present reasonable and manifold possible solutions. As every country has been affected by a natural disaster before, it should be our common goal to work against them.

#### The Issue:

What exactly are Natural Disasters? A Natural Disaster is defined as a sudden event resulting from natural processes that usually results in serious damage and deaths. Natural Disasters can be put into three categories, **Geological Disasters**, **Hydrological Disasters** and **Meteorological Disasters**. In this research report the most common ones of these will be explained.

#### Geological disasters

**Earthquakes:** The earth is made up of tectonic plates which are constantly moving, usually a few centimetres per year. This results in the plates either colliding with each other, sliding past one another or moving away from each other. That movement is responsible for earthquakes as it causes the earth's surface to shake. The most active zone is the „Pacific Rim“, which includes New Zealand, Indonesia, Japan, the Alaskan peninsula, and the west coasts of North and South America, as these countries lie along the pacific plate. Earthquakes rarely occur in the middle of a tectonic plate.

**Volcanic Eruptions:** That happens when Lava and gas are discharged from a volcanic vent. This often results in people having to flee the moving lava flow. Requirement for this to happen are active Volcanoes, the countries most at risk include Indonesia, the Philippines and Japan.

## Hydrological disasters

**Floods:** Defined by the EU Floods Directive as „A temporary covering of land with water, which is usually not covered by water. “Flooding can occur due to rivers, lakes or an ocean having a way higher water level than usual so that the water can overcome its boundaries, or due to heavy rainfall. Defences as detention, levees, bunds, reservoirs, and weirs are used to prevent overflowing from waterways.

**Tsunamis:** Giant waves starting off in an ocean that are caused by earthquakes or volcanic eruptions under the sea. Tsunamis have a much longer wavelength than normal waves and can be seen as a rapidly rising tide. Tsunamis consist of a series of waves with periods lasting from minutes till hours. They can gain a height of tens of metres, crushing the coast. One common example of what effects this can have is the Tsunami which occurred 2011 in Fukushima, Japan.

## Meteorological disasters

**Tornadoes:** Vertical funnels of rapidly spinning air which can gain a speed of 16-32 km/h and travel around ten kilometres far. They form from a thunderstorm with a specific combination of warm and cold winds. The air in a thunderstorm is starting to spin when it is blown by winds into different directions at a different speed. Most injuries are caused by objects e.g. cars or building parts which are flying around due to the heavy winds.

**Droughts:** An unusual dryness of the soil, due to unexpected and unusual low levels of precipitation. Factors that may also contribute to a drought are hot, dry winds, high temperatures and evaporation. That condition can last for months or years. This has effects on the ecosystem as well as the agriculture and results in crop failure and water shortages.

**Wildfires:** Caused by lightning or droughts, a large destructive fire that spreads quickly. One common prevention is the intentional burning of smaller areas to reduce the flammable material. A common area experiencing wildfires on a regular basis is California, US.

### Causes of Natural Disasters- Climate Change

Natural Disasters are occurring as the name suggests naturally and they have been since millions of years. However, it would be wrong to say that we as the inhabitants of this earth are in no way responsible for those disasters. Due to the lifestyle of many countries a climate change is taking place and effecting Natural Disasters.

As the temperatures are rising there will be a higher risk of droughts and wildfires. Due to Global Warming more Storms are formed, hurricanes are more intense due to a higher temperature difference. Due to the melting of ice and a rising sea level the probability of floods has also been increased. In general, it is impossible to prevent Natural Disasters completely but is the UN`'s duty to do its best to create a way to protect life`s, to prevent them as well as possible and if they occur keep their effects at a minimum level. The natural Cause is different for each type of Natural Disaster but depend on ecological processes.



## Effects of natural disasters

There are plenty effects of Natural Disasters, and nearly all of them are negative. Property is nearly always damaged or destroyed which results in the question of who will compensate for it, as many homeowners do not have property insurance. These so-called Infrastructural effects cost the affected countries lots of money they may not have. In more severe cases whole houses and buildings are demolished, forcing people to move and seek refuge. They are called climate refugees or environmental migrants.

Another effect may be public health issues. Hygiene standards are harder to match due to the damage; toilet facilities, water supply etc. are often not working anymore. This leads to diseases spreading much easier as hand washing or food hygiene is becoming rare. Moreover, due to a lack of transport roads many people may be cut off their regular medication, and injuries cannot be treated medically. Of course, Natural Disasters can also create psychological problems such as PTSD.

Environmental problems are also resulting from Natural Disasters as they cause long-term consequences for an ecosystem through waste, damaged habitats and pollution. This also has its effects on several species of plants and animals which used to live in these areas.

Restructuring and rebuilding the affected area may take many years. Schools, universities, hospitals and other important public institutions may not function anymore so that the whole area and its inhabitants has/have to adapt to the new situation. This gets even harder when the political stability, especially in developing countries, suffers from the catastrophe as well.

## Main countries involved

Natural Disasters affect every country at some point. However, some are more at risk than others. Asia-Pacific is, according to the UN, the world's most disaster-prone region, and a person living there is five times more likely to be hit by a natural disaster than someone living elsewhere.

Large Countries like India and the US are suffering under Natural Disasters yearly, which calls for action. Nevertheless, even though a Natural Disaster may occur in one country, many others could be affected, as for example after a volcanic eruption, the smoke and ash may affect the air traffic of large areas. Furthermore, countries like Germany are rarely hit by a Natural Disaster but involved in helping other countries rebuilding their damaged land or helping with food or water supply.

## Key Events

Event/Date	Explanation
Bhola cyclone, Bangladesh/12. November 1970	Storm struck former East Pakistan and pushed up a 20-foot storm surge which funnelled over the Bay of Bengal and caused widespread flooding. The death toll is estimated between 300,000 and 500,000.
Federal Emergency Management Agency (FEMA) founded/1.April 1979	Important step towards reducing effects of natural disasters, US Agency which offers help to countries dealing with the results of natural disasters
International Strategy for Disaster Reduction (ISDR) adopted by UN/1999	Uniting international efforts with immediate actions, so natural disasters and their effects can be avoided.
General Assembly introduced the International Day for Natural Disaster Reduction on the second Wednesday of October/ Resolution 56/195 of 21. December 2001	Promotion of a global disaster reduction and prevention, including preparedness.
Indian Ocean Earthquake & Tsunami/ 26. December 2004	Magnitude 9.3 temblor struck undersea off the west coast of Sumatra which created a massive tsunami with a maximum height of 30 metres. Around 250,000 people in 14 different countries were killed; however, Indonesia and Sri Lanka had the highest death tolls.
Capacity for Disaster Reduction Initiative (CADRI) established by UN/2007	“The CADRI Partnership was set up to respond to the need for a coordinated and coherent UN-wide effort to support Governments develop their capacities to prevent, manage and recover from the impacts of disasters.” , UN
Haiti earthquake/12. January 2010	Magnitude 7 earthquake, which took around 200,000 lives. The USGS recorded eight aftershocks with magnitudes between 4and 6. Many countries offered help through funds, rescue & medical teams and engineers.
Fukushima nuclear accident/11. March 2011	Magnitude 6.6 earthquake off north-eastern coast of Honshu, caused lots of damage as well as a series of large tsunami waves. Coastal areas were devastated and a nuclear power plant was hit by a tsunami. That led to 47,000 people being forced to leave their homes and 20km evacuation warning zone. The overall death toll accounts to ca. 16,000 people.

## Previous Attempts to Solve the Issue

The UN has several Projects in place to improve the handling of Natural Disasters, such as:

- **Capacity for Disaster Reduction Initiative (CADRI)**

Gather various UN institutions with the aim of developing national capacities for disaster risk reduction.

- **Global Disaster Alert and Coordination System (GDACS)**

Cooperation framework between the United Nations and the European Commission, aiming at improving information exchange during the first phase of disasters.

- **Prevention Web**

UNISDR project aiming at developing tools to facilitate collaboration in the disaster risk reduction community.

- **International Platform for Reducing Earthquake Disaster (IPRED)**

Platform lead by the United Nations Educational, Scientific and Cultural Organization (UNESCO). Foster collaborative research, training and education in the field of seismology and earthquake engineering.

- **Refworld**

Database of the UN High Commissioner for Refugees provides information on refugees and disasters that impact them.

- **Relief Web**

Relief Web aggregate information on emergencies from a variety of UN and non-UN actors including: updates on disasters and publications/content by disaster type.

- **UN-Spider Knowledge Portal**

The UN-Spider Knowledge Portal is a resource developed by UNOOSA (UN Office for Outer Space Affairs). It is the United Nations Platform for Space-Based Information for Disaster Management and Emergency Response

Moreover, in 2001 the UN introduced an “International Day for Disaster Reduction” on the second Wednesday of October, to raise awareness of the issue and to support the idea of working united against Natural Disasters.

There is also the Federal Emergency Management Agency (FEMA) which was founded in 1979 in the US. They cooperate with local and governmental officials in case of a natural disaster. FEMA also offers financial help to individuals as well as states to help with the reconstruction of schools, homes etc.

However, there is no international law in place which legally binds governments to provide help to those in need due to a Natural Disaster. Humanitarian law applies to armed conflicts but is not applicable to non-conflict disasters. This results in a poor response to such a catastrophe. Due to the need of better coordination the UN General Assembly has adopted three resolutions which encourage member states to work together on this issue and to be open to such guidelines.

## Possible Solutions

- Increasing awareness in schools, such as lessons in which children learn how to behave if a Natural Disaster occurs.
- Measures such as the intentional burning or reduction of flammable material could be increased and supported by UN funds to prevent for example wildfires
- Research facilities could be funded so that solutions which are not fully discovered yet may be introduced.

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