

Forum: UNDP(United Nations development program)
Issue: (701) Measures to maximize resilience to natural disasters
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Introduction

Natural disasters, defined by the US Department of Homeland Security, “include all types of severe weather, which have the potential to pose a significant threat to human health and safety, proper critical infrastructure, and homeland security.” Natural disasters can be seasonal or can occur completely randomly. Throughout modern and ancient history, civilizations have been experiencing natural disasters, and have done their best to be resilient to them. While every single place on Earth is subject to natural disasters to some extent, countries like Haiti suffer from them a lot more than others, and this is mainly because they lack technology, infrastructure, and resources to be resilient to disasters. This example goes to show the lack of support and assistance for underdeveloped nations is what is keeping them from developing resilience to, and preventative measures for, natural disasters.

Definition of Key Terms

Sustainable Development Goals (SDGs)

The SDGs are “Global Goals that were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.” There are a total of 17 goals which collectively aim to advance economic and social sustainability.

Climate change

Alteration in a region of extreme temperature and the weather which is usually caused by human activities, resulting in outcomes that are likely to harm people. The results can be that

the pattern of weather can be hard to predict, the difficulties of maintaining agriculture, and natural disasters such as floods and winter storms.

Deforestation

Deforestation is the removal of an area of trees, usually for the purpose of agriculture, animal grazing, the needs of wood, or clearing more space for urbanization. Deforestation not only completely destroys the habitats of thousands of species contributing to disruptions in food chains, but it also increases the likelihood of mudslides.

Mudslides

Mudslides are among the many consequences of climate change and human interference in the natural environment. Climate change has caused natural events like rain to become much more extreme than usual. Deforestation adding on has made soil very vulnerable to landslides, mudslides and soil erosion.

Hurricanes and typhoons

Hurricanes and typhoons are the essentially the same thing, but ones that occur in Asia are called Hurricanes while typhoons are in the Americas. According to the National Ocean Service, hurricanes and typhoons are “rotating low-pressure weather system[s] that [have] organized thunderstorms” which bring heavy rains, strong winds, and immense destruction.

Droughts

Droughts happen when there is a lack of water within a country. There are two main possible ways such a event could be caused, the first is that their is a natural lack of water in the region because of winds or distance from a bountiful water source. A great example would be the middle east where few water deposists exist and rainfall is rare. The second type of drought is caused mainly by desertfication resulting from poor farming practices and deforestation. After overgrazing land and deforestation occur, soil nutrients and plants are unable to replenish, leading to the soil’s capability to retain water which leads to droughts.

Earthquakes

Earthquakes are among the most unpredictable events, they occur from movement of tectonic plates making impossible to predict. While earthquakes themselves cause disasters like building collapses, they also are the reason for tsunamis and volcano eruptions which are natural disasters themselves.

Natural Disaster Resilience

When people, communities, organizations, and states are able to adapt to and recover from hazards, shocks, or stresses caused by natural disasters without compromising their long-term prospects for developing, they have natural disaster resilience.

History

History of major natural disasters

May 18, 1980: Eruption of Mount St. Helens	one of the largest eruptions in American history.
Jan 12, 1997: Great Hanshin Earthquake	A 7.2 magnitude earthquake in Japan that left over 5200 people dead.
Nov 27 2002: SARS pandemic	A global pandemic that left hundreds dead and thousands infected
Dec 26 2003: Bam Earthquake	A major earthquake in Iran that killed over 43,000 and left 75,000 people homeless.
Dec 26 2004: Indian Ocean Earthquake	A tsunami that killed over 230,000. Its impact spanned over multiple countries, Indonesia among them was the hardest hit.
Aug 29 2005: Hurricane Katrina	This was among the most devastating hurricanes in the US, it killed 1,836 in the event itself. Most devastating of all was probably the damages, it was estimated to have costed more than \$100 billion.
June 10 2007: Asian Heat waves	This was seen as one of the many signs that global warming has become a major issue
May 2008: Great Sichuan Earthquake	A massive earthquake in China that killed over 70,000 people.
Jan 13 2010: Haiti earthquake	A devastating earthquake hit unprepared Haiti

	leading to a 250,000 person death count and only intensified poverty in Haiti.
March 11 2011: Fukushima event	It was originally just another earthquake but then it led to a tsunami. That wasn't the worst thing, because the nuclear generator was close to the water and it caused a malfunction in the factory. Luckily only two workers died since everyone else was evacuated. However this event has raised concerns over the safety of nuclear energy to people around the world.
Nov 3 2013: typhoon Haiyan	As it made landfall, Haiyan devastated parts of Southeast Asia, particularly the Philippines. At least 6,300 people were killed in the Philippines alone, making it one of the deadliest typhoons on record.
Dec 23 2013 : Western African Ebola	The 2013–2016 epidemic of Ebola virus disease, centered in Western Africa, was the most widespread outbreak of the disease in history. By the end of the epidemic, 28,616 people had been infected; of these, 11,310 had died, for a case-fatality rate of 40%.
April 25, 2015 : Nepal earthquake	The Nepal earthquake of 2015, also known as the Gorkha earthquake, was a severe earthquake that struck near the city of Kathmandu in central Nepal. More than 9,000 people were killed, thousands more injured, and more than 600,000 structures in Kathmandu and other nearby towns were damaged or destroyed.

Key Issues

Climate Change

Scientists assert that the rise in hurricane frequency and strength in the past decades can be attributed to rising temperatures. We have also seen a rise in the number of typhoons in Southeast Asia, and typhoons and hurricanes have led to substantial amounts of deaths and damage.

Another example of a kind of natural disaster that is caused by climate change is flooding. As ice caps in the north pole region have been melting into the ocean due to rising global temperatures, sea

levels have begun to rise. As sea levels rise, several coastal regions (especially those at low sea level and low capacity to take anti-flood measures) are becoming more vulnerable to flooding.

Warming waters have also been causing coral to slowly die off. These corals are very important for ocean life since fishes can hide from their predators with corals, and they actually produce substantial amounts of oxygen. Climate change only worsens, and as it does so does the frequency of natural disasters in the forms of coral degradation, flooding, and hurricanes.

Lack of Resources and Preparation

In order to achieve resilience to natural disasters, nations must take certain precautionary measures to minimize their effects. One reason why many nations such as Haiti, The Philippines, or others cannot develop resilience to natural disasters is because of lack of capability and funds. If we compare these nations to others who are also geographically vulnerable to natural disasters but have developed resilience to them like Japan, we see that Japan has been able to develop resilience since they have the necessary funds and resources to do so. In addition, a lot of nations who suffer from natural disasters face issues such as poverty and inequity, civil conflict and political unrest, or other issues may see natural disaster resilience as not an important issue to solve. This perpetuates the lack of institutionalized preventative measures for natural disasters, which ultimately hinders a nation's development.

Human Impacts

Because humans have been exploiting nature's resources for their own good, we have had to face several consequences, many of which in the form of natural disasters. One of the most noticeable ones is an increasing number of landslides and weaker soil overall. This is the result of removing plants with strong roots for plants that produce food, lumber, and other resources that have no grip on the soil (like palm trees). Another consequence is the increasing number of forest fires, which is predicted to be most notable in the US and places where water is greatly overused and not regulated. Humans have also been caused by direct harm to aquatic life, overfishing, mass release of trash, and ghost fishing are a few of the many things humans have done to make matters worse in regards to natural disasters

Major Parties Involved and Their Views

The Salvation Army / The Red cross

Both of these are organizations that assist countries in danger in a wide range of scenarios from wars to natural disasters. The Salvation Army's earliest natural disaster assistance was during the San Salvador

earthquake in 1968. The red cross has also helped in multiple natural disasters, their assistance in the 2010 Haiti earthquake and was able to raise over 32 million in SMS alone.

Japan

Japan being hit with multiple disasters have led to focusing on minimizing the damage. Japan, for example, began taking proactive steps in the 1960s to strengthen both the physical and institutional safeguards against disasters, with an emphasis on disaster prevention. As a result of these efforts, fewer people have died or become missing due to natural disasters. Recent years have seen the number decline to between 100 and 200 per year.

The Association of the Caribbean States (ACS)

The ASC like most associations was focused on trying to develop as a group and support each other for greater economic growth. In the Caribbean, natural disasters like hurricanes often disturb such growth, so naturally governments came together to try and come up with ways to minimize damages. The scale of natural disasters in the Caribbean can be seen in Haiti where natural disasters have led to decades of damage. While efforts have been made to develop resilience to natural disasters, the region still lags behind many other places in regards to resilience to natural disasters.

The Association of Southeast Asian Nations (ASEAN)

ASEAN consists of multiple Southeast Asian states and like the ACS, aims to develop the region through collaboration and economic alliances. In the past few years it has expanded into helping countries in crises. An example would be the Indian Ocean Tsunami that affected a lot of South Asia. Like the ACS, ASEAN nations are very vulnerable to natural disasters and are far from developing resilience

Timeline of Relevant Resolutions, Treaties and Events

Date	Description of Event
1971	The Creation of the United Nations Disaster Relief Office (UNDRO) was called upon in GA and led to the first creation of a UN organ that deals with natural disasters.
23 to 27 May 1994	World Conference on Disaster Reduction, Yokohama, Japan. The World Conference was held at Yokohama, Japan. Res. 49/22 A endorses the Yokohama Strategy and its Plan of Action adopted at the conference
1999	The United Nations Office for Disaster Risk Reduction was created in December 1999 to ensure the implementation of the International Strategy for Disaster Reduction.

1999	International Decade for Natural Disaster Reduction (IDNDR). To promote coordinated international efforts to reduce material losses and social and economic disruption caused by natural disasters, especially in developing countries.
2002 september	The Johannesburg Plan of Action The World Summit on Sustainable Development (WSSD) provided the Inter-Agency Task Force on Disaster Reduction and the UN/ISDR secretariat with concrete objectives that fit within the sustainable development agenda. along with partners will increasingly turn their attention and capacities to integrating and mainstreaming risk reduction into development policies and processes.

Relevant UN Treaties and Events

- International Decade for Natural Disaster Reduction(Res. 48/188)
- Strengthening the capacity of the United Nations system to respond to natural disasters and other disaster situations(Res. 36/225)
- A World Conference on Disaster Reduction, Yokohama, Japan (Res. 49/22)
- International Strategy for Disaster Reduction(Res. 57/256)
- The Global Platform on Disaster Reduction(Res. 61/198)
- First session of the Global Platform on Disaster Reduction(Res. 62/192)
- Discovery and discussion of El Nino (52/200, 53/185, 54/220, 55/197)

Evaluation of Previous Attempts to Resolve the Issue

The most effective solutions to natural disasters have been implemented by individual countries that have the money and time to focus on development while being sustainable, and a prime example of this would be Japan. Japan has been a leading country in the economic sector, and while doing so it has been continuously being dedicated to sustainable development. For example, Japan recently decided to allocate significant funds into wetland development to deal with flooding in sustainable and efficient ways rather than just building sewers and drainage systems. This is just one of the many things being done in Japan in hopes of sustainable development. On the contrary, African, Southeast Asian and South-American nations have seen a decrease in in clear-cutting after establishing national parks as well as diverting more emphasis towards developing ecotourism . The natural environment has been realized to have more value than just the wood and resources they offer. All of these small individual

findings and events have significance but there needs to be a better way for governments to share and manage such ideas.

Possible Solutions

1. Reforestation

- **Pros:** Reforestation will without a doubt help prevent natural disasters. Reforestation will replenish previously removed forests that will hold soil in the ground preventing mudslides, it will lower temperatures through carbon sequestration, and it will provide a habitat for organisms to thrive, preventing extinction.
- **Cons:** While reforestation is an effective solution, it may not be a realistic one. In order to completely restore an ecosystem, careful planning and exemplary resources (which places that suffer from deforestation lack) are required. What can be done as a more realistic solution to deforestation is advocating against it. This can be done at the local personal levels through deforestation campaigns led by the people which command their governments to pass legislation protecting fragile ecosystems from deforestation. This also takes careful planning and execution, is seen as less resource-intensive and more a matter of initiative

2. Establishing effective preventative measures

- **Pros:** Many governments have contributed millions of dollars to establish effective institutions that minimize damage caused by natural disasters and help their people to be more prepared for natural disasters. The effectiveness has been seen best in Japan where they have put in \$6.4 billion in disaster prevention, and 278 million in research for disaster risk prevention. Japan had a death toll of 22,551 in 2010 but every year after that it was kept under 500. While the number of deaths has decreased the number of major earthquakes has only risen, in 2016 there was a high of 25 major earthquakes but because of their advanced disaster prevention measures, Japan only suffered 344 deaths (Statista).
- **Cons:** While spending money on better technology and preventative measures is a great benefit for governments and people, it is expensive and unrealistic for LEDCs, and may not be an effective long-term solution. As stated in the "Pros" section, Japan spends \$6.4 billion in disaster prevention, which equates to almost double of Sierra Leone's GDP (World Bank). Countries like Sierra Leone must find ways to fund for natural disaster prevention, which may not even be a main source of concern for them. Also, in regards to

natural disasters caused by human activity such as desertification (and droughts), resilience institutions and facilities may not be enough to minimize their implications. Rather, taking steps towards minimizing the activities which can contribute to natural disasters is more important.

3. Reinforcing current preventative measures

- **Pros:** While many governments already have tried to establish natural disaster resilience facilities, they may be outdated and/or under maintained. Instead of completely rebuilding these facilities, to save money and time governments could propose to allocate funds and research towards developing already-established institutions and measures. In addition, locals can be involved in the development of these facilities and measures through fundraisers, increased connectivity and communication, and education.
- **Cons:** While developing pre-existing facilities can be a faster and cheaper solution, the results might not be as effective or sustainable as a newer facility. Also, some facilities, no matter much they are restored, would not be as effective. To determine whether or not a facility should be either replaced or restored, very detailed inspections and evaluations must be done which may exert funds, time, and expertise that may be inaccessible.

Bibliography

Adb.Org, 2022, <https://www.adb.org/sites/default/files/publication/684891/adbi-wp1223.pdf>. Accessed 1 Feb 2022.

"Natural-Disaster Noun - Definition, Pictures, Pronunciation And Usage Notes | Oxford Advanced Learner's Dictionary At Oxfordlearnersdictionaries.Com". *Oxfordlearnersdictionaries.Com*, 2022, <https://www.oxfordlearnersdictionaries.com/definition/english/natural-disaster>. Accessed 1 Feb 2022.

"What Is Disaster Resilience? - GSDRC". *GSDRC*, 2020, <https://gsdrc.org/topic-guides/disaster-resilience/concepts/what-is-disaster-resilience/#:~:text=Disaster%20resilience%20is%20the%20ability,long%2Dterm%20prospects%20for%20development>. Accessed 1 Feb 2022.

"Sustainable Development Goals (SDGs) - United Nations"
<https://www.undp.org/sustainable-development-goals>. Accessed 17 Sep. 2021.

"Hotter Summer Days Mean More Sierra Nevada Wildfires, Study Finds". *Nytimes.Com*, 2021, <https://www.nytimes.com/2021/11/17/climate/climate-change-wildfire-risk.html>. Accessed 3 Feb 2022.

Hamman, Evan. "Wetland Restoration in Japan: What's Law Got to Do with It?" *ResearchGate*, The Japan Foundation, Sydney, July

2019, www.researchgate.net/publication/334147581_Wetland_Restoration_in_Japan_What's_Law_Got_to_Do_with_It. Accessed 9 Mar. 2022.

"Japan: Natural Disasters Fatalities | Statista". *Statista*, 2022, <https://www.statista.com/statistics/655481/japan-fatalities-natural-disasters/>. Accessed 9 Mar 2022.

"Home". *Oecd-Ilibrary.Org*, 2022, <https://www.oecd-ilibrary.org/sites/001342f9-en/index.html?itemId=/content/component/001342f9-en>. Accessed 9 Mar 2022.

Watson, Pamela G. et al. "When A Natural Disaster Occurs: Lessons Learned In Meeting Students' Needs". *Journal Of Professional Nursing*, vol 27, no. 6, 2011, pp. 362-369. Elsevier BV, doi:10.1016/j.profnurs.2011.09.001. Accessed 10 Mar 2022.

Martin. "UN World Conference on Disaster Risk Reduction." United Nations Sustainable Development, 20 June 2018, www.un.org/sustainabledevelopment/un-world-conference-on-disaster-risk-reduction/. Accessed 10 Mar. 2022.

"Natural Disasters Timeline." World History Project, 17 Jan. 1995, worldhistoryproject.org/topics/natural-disasters/page/5. Accessed 10 Mar. 2022.

"Natural Disasters & Environment." HISTORY, 22 Aug. 2018, www.history.com/topics/natural-disasters-and-environment. Accessed 10 Mar. 2022.

<https://disaster.salvationarmyusa.org/aboutus/?ourservices>

<https://www.redcross.org/about-us/who-we-are/history/significant-dates.html>