UNDRR
STUDY GUIDE

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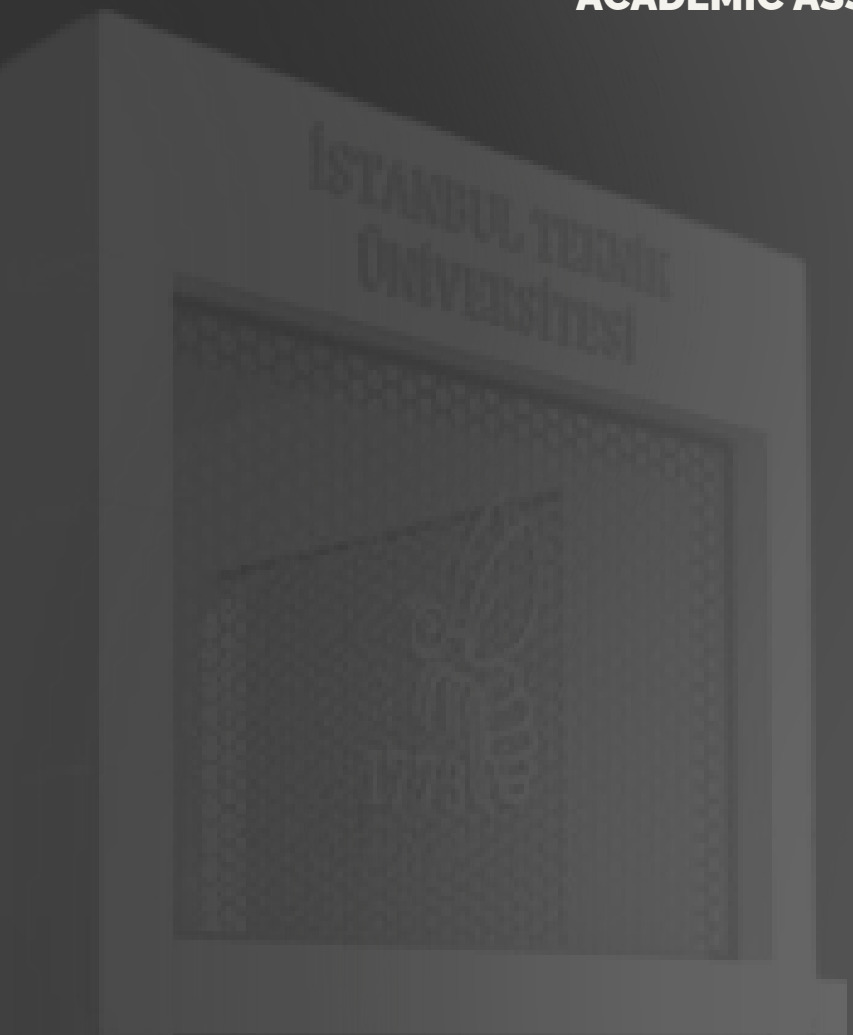

ITU MUN

1. Letter from the Secretary General

Dear Delegates,

It is with great pleasure that I welcome you to ITUMUN 2026.

By choosing to take part in this conference, you have already done something meaningful: you have chosen dialogue over indifference, understanding over assumption, and engagement over silence. In a world increasingly shaped by division, conflict, and uncertainty, such choices matter.

Today's international landscape is marked by ongoing conflicts, humanitarian crises, and profound global challenges that demand more than rhetoric. They demand informed, open-minded, and principled individuals, particularly from the younger generation, who are willing to listen, to question, and to act responsibly. MUNs offers precisely this space: one where ideas are tested, diplomacy is practised, and perspectives are broadened.

As delegates, you are not merely representing states or institutions; you are actually engaging in the art of negotiation, the discipline of research, and the responsibility of decision-making. Approach this experience with curiosity, respect, and intellectual courage. Learn not only from debate, but from one another.

On behalf of the Secretariat, I sincerely hope that ITUMUN 2026 will challenge you, inspire you, and leave you better equipped to contribute to a more peaceful and cooperative world.

I wish you a rewarding conference and every success in your deliberations.

Yours sincerely,
Abdullah Kikati
Secretary-General

Letter from the Committee Board

Dear Participants of ITUMUN'26 UNDRR Committee,

We are honored to warmly welcome you all to ITUMUN'26. As the Board Members of the UNDRR Committee, we are delighted to host you for four enriching days of debate, diplomacy, and collaboration. Throughout the conference, we aim to create a dynamic and memorable environment where every delegate feels encouraged to actively participate and share their perspectives.

The agenda items of our committee address two interrelated and highly critical dimensions of disaster risk reduction in today's world. The first agenda, "The Question of the Weaponization of Natural Disasters: Catastrophe as a Tool of War," examines how natural hazards can be deliberately exploited, manipulated, or politically instrumentalized to serve military, strategic, or geopolitical objectives. In an era of hybrid warfare and increasing climate-related risks, disasters are no longer solely humanitarian crises but can also become tools that exacerbate conflict, displacement, and instability.

The second agenda, "The Question of Enhancing Community Resilience to Natural Disasters," focuses on the importance of empowering communities to withstand, adapt to, and recover from disasters. Community resilience lies at the core of effective disaster risk reduction, emphasizing preparedness, inclusive governance, local capacity-building, and sustainable development. Strengthening resilience is not only about reducing physical damage but also about protecting lives, livelihoods, and social cohesion.

Together, these agenda items invite delegates to critically analyze disasters not only as natural phenomena but also as socially and politically constructed events. Through these discussions, we aim to explore how the international community can prevent the misuse of disasters while simultaneously investing in resilient, prepared, and empowered societies.

We strongly encourage each and every delegate to confidently represent their country's policies and contribute actively to the debate. This committee is more than a simulation; it reflects real-world struggles that millions of people continue to face. Your voices, solutions, and diplomatic efforts matter more than you may realize. Witnessing the continuous success and evolution of this conference fills us with immense pride, and we are deeply grateful to the Executive Team for their hard work and commitment.
We sincerely hope that ITUMUN'26 UNDRR Committee will be a platform where ideas turn into solutions and discussions turn into meaningful impact. We are very much looking forward to meeting all of you and sharing this inspiring experience

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together. For any questions or concerns before the conference, feel free to reach out to us via email: cemrenur3664@gmail.com , doughan23@itu.edu.tr .

Sincerely yours,
Abdulkerim Doughan, Cemre Yüksel
Chairboard of UNDRR

Table of Contents

1. Introduction to the committee

The United Nations Office for Disaster Risk Reduction (UNDRR) is the primary organization within the United Nations (UN) responsible for spearheading and organizing international initiatives to reduce the risk of disasters and increase resilience to threats ranging from pandemics and climate change to earthquakes and floods. To shift the global focus from responding to disasters after they occur to managing risk and promoting sustainable development, UNDRR aims to support decision-makers worldwide in understanding, anticipating, and responding to risk before disasters strike.

UNDRR envisions a society in which disasters no longer jeopardize human welfare or the destiny of our planet. According to UNDRR's goal, disasters will no longer endanger human welfare or the planet's destiny. To achieve the Sustainable Development Goals, the UNDRR

promotes disaster risk reduction (DRR) as a crucial basis to achieve said goals, acknowledging that risk reduction across societies is necessary to achieve sustainable development.

2. The Question of the Weaponization of Natural Disasters: Catastrophe as a Tool of War

2.1. Introduction to the Agenda Item

The Concept of Natural Disaster

A natural disaster is defined as any event due to natural processes on Earth. A disaster's intensity is determined by the number of lives lost, the quantity of money lost, and the population's capacity to reconstruct. People living in poverty, as well as those in lower and middle-income countries, who lack proper protection and infrastructure, are the most vulnerable. Natural disasters frequently result in death and morbidity when a hazard overwhelms an extremely vulnerable community. Floods, tornadoes, hurricanes, volcanic eruptions, earthquakes, droughts, and tsunamis are a few examples of natural disasters.

Over 300 natural disasters have struck the world each year in the last ten years, hurting millions of people and costing billions of dollars. A coordinated plan for responding to, recovering from, preventing, and preparing for a disaster is based on the disaster cycle. Concerns that may delay the management of a natural disaster, the recovery process include access to clean water, adequate sanitation, food and nutrition, shelter, and the risk of infectious diseases.

The Concept of Catastrophe

Catastrophe is a large-scale disruptive event that frequently results from a natural hazard and whose effects overwhelm the ability of current social, political, and governmental institutions to respond, turning a natural occurrence into a serious crisis.

When a natural hazard like an earthquake, flood, or storm causes damage to property and loss of life, a disaster first appears as a crisis. However, it becomes a catastrophe when the current social and institutional capacity is unable to handle the situation. The breakdown of institutional coordination, a lack of state response capabilities, and the incapacity to maintain vital public services all contribute to this transition rather than the event's dimensions alone. Conventional disaster management techniques become inadequate at the catastrophe stage, legal and administrative "normalcy" may be stopped, and people's basic needs, such as shelter, healthcare, security, and dignity, are continuously put in danger. In addition to causing some groups to suffer disproportionately, this process exposes and deepens social injustices, turning the event from a simple natural occurrence into a political, legal, and humanitarian breakdown. Therefore, even if a disaster may start as a natural hazard, human-made governance failings, structural vulnerabilities, and the collapse of state capacity are the main factors that shape it into a catastrophe.

Hazard, Natural Disaster, and Catastrophe: A Conceptual Comparison

A hazard is a possible danger brought on by environmental or natural phenomena. Although they do not yet result in a social crisis, earthquake fault lines, floods, volcanic activity, or droughts are examples of hazards. Therefore, hazard is essentially an environmental and physical term that represents danger prior to its direct interaction with human society.

A natural disaster occurs when a hazard comes into contact with infrastructure, social activity, and human settlements. Although the presence of an earthquake fault line is a risk, an earthquake that causes fatalities, property damage, and disruptions to normal life is considered a natural disaster. In this case, the degree of social exposure and vulnerability is more important than the threat itself. Different nations or social structures may experience significantly distinct disaster results from the same threat.

A catastrophe is more than just a natural disaster; it is a state of systemic, multi-layered failure. When an emergency overcomes the ability of current institutions, governance, and social resilience, it becomes a catastrophe. In this perspective, while dangers originate in nature and disasters develop at the intersection of nature and society, catastrophes are the last stage of this structure, in which human-caused political, institutional, and structural failures take priority.

2.2. Key Terms

Vulnerability: The extent to which a person, group, or nation can manage the consequences of a risk.

Disaster Risk Reduction: A proactive approach that focuses on reducing vulnerabilities, exposure, and risks before disasters occur in order to minimize human, economic, and environmental losses.

Invisible Weapons: Non-traditional methods of warfare that cause harm without direct physical force, such as environmental manipulation, cyber operations, or the strategic exploitation of disasters.

Misinformation: The spread of false or misleading information that distorts public understanding, undermines trust in institutions, and can worsen the impacts of disasters and crises.

2.3. Current Situation

2.3.1 Managing the Administrative Dimensions of Natural Disasters

The administrative dimension of natural disaster management refers to the institutional, legal, financial, and organizational structures through which states and international actors prepare for, respond to, and recover from disasters. Unlike the physical aspects of disasters, which are shaped by natural hazards, administrative capacity determines whether a hazard escalates into a large-scale humanitarian catastrophe. In this sense, disaster management is not only a technical or emergency-related issue, but also a core governance challenge.

At the national level, effective disaster administration depends on clear institutional mandates and coordination mechanisms. Disaster risk management typically involves multiple ministries and agencies, including interior affairs, health, environment, defense, and local governments. When roles and responsibilities are poorly defined, overlapping authorities and bureaucratic fragmentation can delay response efforts and reduce overall effectiveness. Centralized systems may struggle with local implementation, while highly decentralized systems may lack coordination, making administrative coherence a key factor in disaster outcomes.

Preparedness is one of the most critical administrative functions. This includes risk assessments, early warning systems, emergency planning, and public communication strategies. Administratively strong systems integrate scientific data into policy-making and ensure that disaster risk reduction is embedded in urban planning, infrastructure development, and environmental regulation. Where preparedness is treated as a secondary concern or an ad hoc responsibility, disasters tend to produce disproportionate human and economic losses.

Crisis response highlights the operational capacity of administrative systems. Timely decision-making, resource mobilization, logistics management, and inter-agency cooperation are essential during the emergency phase. Administrative failures at this stage often manifest as delayed evacuations, shortages of medical supplies, unequal aid distribution, or breakdowns in information flow. These shortcomings not only increase immediate harm but also undermine public trust in state institutions.

The post-disaster recovery phase further exposes administrative strengths and weaknesses. Reconstruction, compensation mechanisms, and long-term rehabilitation require transparent governance, accountability, and sustained financial planning. Weak administrative oversight can lead to corruption, misallocation of funds, and uneven recovery, leaving affected populations more vulnerable to future disasters. In contrast, effective recovery policies can transform disasters into opportunities for institutional learning and resilience building.

International coordination represents another key administrative dimension. In large-scale disasters, states often rely on international organizations, NGOs, and humanitarian agencies for assistance. Managing this external support requires administrative capacity to coordinate actors, align aid with national priorities, and ensure compliance with legal and ethical standards. Poor coordination can result in duplication of efforts, gaps in service delivery, and inefficiencies that weaken overall response effectiveness.

Administrative disaster management is also closely linked to political stability and conflict dynamics. In fragile or conflict-affected states, administrative systems are often weakened by limited legitimacy, resource constraints, and security concerns. In such contexts, disasters can exacerbate existing tensions, fuel displacement, and become instruments of political pressure or control. This intersection is particularly relevant to discussions on catastrophe as a tool of war, where administrative weakness enables the strategic exploitation of disasters.

Finally, accountability and transparency are central to the administrative management of natural disasters. Clear legal frameworks, monitoring mechanisms, and public oversight help ensure that disaster policies serve affected populations rather than political interests. Without accountability, disaster management risks becoming reactive, politicized, or selectively applied, increasing both human suffering and long-term instability.

In conclusion, managing the administrative dimensions of natural disasters is fundamentally about governance capacity. Disasters reveal not only environmental vulnerabilities, but also the strengths and failures of administrative systems. Effective administration reduces the likelihood that natural hazards will escalate into humanitarian catastrophes or be exploited as tools of political or military advantage.

2.3.2 Investigating Political Analysis of Catastrophe

The political analysis of catastrophe approaches disasters not merely as sudden and unavoidable natural events, but as processes shaped by power relations, governance structures, and social inequalities. From this perspective, whether an event becomes a “catastrophe” depends less on the magnitude of the hazard itself and more on state capacity, political priorities, and modes of intervention. The same natural hazard can lead to vastly different outcomes depending on the political and institutional context in which it occurs. Consequently, catastrophe is not a purely technical problem of management, but a deeply political phenomenon.

Catastrophes function as critical moments that test state capacity and political legitimacy. In times of crisis, the speed, inclusiveness, and transparency of public authorities’ responses redefine the relationship between the state and its citizens. Effective disaster response can strengthen governmental legitimacy, whereas delays, lack of coordination, and neglect can intensify political distrust. In this sense, catastrophes generate not only humanitarian losses but also conditions that may trigger political instability and systemic change.

From a political perspective, catastrophes are also sites where power is reproduced and reconfigured. Emergency measures, centralization of decision-making, and security-oriented narratives often become prominent in post-disaster contexts. These dynamics may push disaster governance beyond democratic oversight, allowing crises to legitimize authoritarian practices. Catastrophe thus becomes not only a test of governance, but a political moment in which the boundaries of power are redrawn.

The political nature of catastrophe is further evident in the unequal distribution of vulnerability. Disaster impacts are not evenly shared across society; the poor, women, elderly populations, migrants, and marginalized groups systematically suffer greater harm. This challenges the notion of disasters as “natural equalizers” and instead frames them as events that deepen pre-existing structural inequalities. Political analysis emphasizes that these disparities are not accidental, but rather the outcome of long-standing social and economic policies.

Catastrophes also provoke debates over political responsibility and accountability. The failure to implement risk reduction policies prior to a disaster often becomes visible through post-disaster governance failures. In this context, catastrophes reveal neglected decisions and postponed reforms, making them moments of political reckoning rather than sudden disruptions. Political analysis therefore interprets catastrophe as a process rooted in prolonged governance deficiencies rather than as an isolated event.

Finally, the political analysis of catastrophe extends to the international level. The politicization of humanitarian aid, the selective nature of international interventions, and the reshaping of global power relations in the aftermath of disasters demonstrate that catastrophes are embedded within global political processes. From this standpoint, catastrophes function not only as humanitarian crises but also as arenas in which sovereignty, global governance, and power relations are renegotiated.

2.4 Conspiracy Theories

2.4.1 HAARP Project

The US military ran the High-frequency Active Auroral Research Program (HAARP) from 1993 to 2013. Studying the ionosphere, a section of the upper atmosphere, where electrons with charges interact with the Earth's magnetic field, was its main goal. Despite the program's scientific goals, it has been the focus of many conspiracy theories that claim it was used for evil, like mind control and weather manipulation. After receiving a lot of negative press, the military terminated the project in 2013, while some people believe that HAARP-like research is still ongoing in another secret project.

The program was created to answer a number of scientific concerns about the ionosphere, including how it impacts satellite communications, how it reacts to solar activity, and how it affects Earth's weather patterns. Additionally, it was meant to have military uses, like enhancing navigation and communication in the polar regions and identifying subterranean structures.

One of the most popular conspiracy theories surrounding HAARP is that the equipment can purposely cause earthquakes. This story claims that HAARP intentionally causes large-scale earthquakes, weakens fault lines, and creates vibrations in the Earth's crust by sending high-frequency electromagnetic waves into the ionosphere. Conspiracy theorists claim that electromagnetic anomalies in the ionosphere before significant seismic occurrences are "evidence" of HAARP's participation.

Another popular conspiracy theory describes HAARP as a climate weapon capable of manipulating the weather. This theory's proponents claim that the system can cause droughts, trigger rains in particular areas, or change the course of storms and hurricanes. The argument has gained popularity in connection with the rise of unexpected and out-of-season weather events, and it is frequently connected to past instances of weather modification techniques, like cloud seeding, done by specific states. In this story, climate control is shown as a new tool of contemporary warfare, and water is framed as a future strategic resource.

The allegation that HAARP can cause tsunamis is also common in the aftermath of large-scale natural disasters. This idea states that HAARP sends electromagnetic energy towards the ocean below, causing seafloor structures to suddenly shift and triggering tsunamis. This narrative frequently uses catastrophic occurrences as key examples, such as the 2004 Indian Ocean tsunami and the 2011 earthquake and tsunami in Japan. Conspiracy theorists believe that such widespread devastation cannot be accounted for as a purely natural occurrence.

Similarly, conspiracy theories claim that HAARP boosts volcanic activity or intentionally damages dormant volcanoes. According to this point of view, the system raises magma pressure and causes volcanic eruptions by heating the Earth's crust's subsurface layers. These claims are frequently supported by measurements of electromagnetic fluctuations taken before volcanic explosions. Nature appears in these stories as a huge energy laboratory that is controlled by modern technology.

Finally, discussions about global warming and climate change are directly linked to the idea that HAARP operates as a hidden climate weapon. This narrative says that states' secret electromagnetic experiments are the main cause of global climate change rather than greenhouse gas emissions. It is suggested that HAARP is actively modifying the global climate system based on documented adjustments in the ionosphere and increased warming in polar regions.

According to the scientific community, HAARP could not have caused natural disasters. The belief that HAARP was a legitimate research program with scientific objectives is supported by scientific evidence. Its studies have advanced our knowledge of the ionosphere, which has consequences for a number of scientific and technical fields such as space weather, communication, and navigation.

Examples of Natural Disasters Associated with HAARP Claims

1999 Marmara Earthquake (Türkiye):

According to conspiracy theories, ionospheric irregularities were found before the earthquake, purportedly suggesting HAARP operations, and Türkiye was intentionally targeted because of its geopolitical importance.

2004 Tsunami in the Indian Ocean:

Conspiracy theorists claimed that HAARP experimented with the ocean floor since a catastrophe of this kind could not have been entirely natural, given that over 230,000 people perished.

2010 Haiti Earthquake:

Conspiracy theories have described the earthquake as a strategic rather than a natural catastrophe, frequently connected to the power and interests of the United States in the region, because of the remarkably high death toll and the collapse of state structures.

The 2011 Japan earthquake and tsunami (Fukushima):

It triggered a nuclear crisis, which was regarded as an intentional attempt to weaken Japan's technological and economic power through man-made natural disasters.

Germany and Western Europe in 2021 Floods:

Conspiracy theories blamed HAARP's purported capacity to intentionally generate precipitation for the heavy rains that occurred in a brief amount of time.

2022 Hunga Tonga–Hunga Ha'apai Volcanic Eruption (Tonga):

The eruption's exceptional strength, its impact on the atmosphere, and the creation of tsunamis were mentioned as proof that HAARP functions as a complex, multi-layered military system.

Drought in the Horn of Africa (2020–2023):

Conspiracy theories claiming that HAARP acts as a drought-inducing weapon have claimed prolonged drought, agricultural failure, and widespread relocation as proof.

Rapid Melting of Polar Ice (Antarctic and Arctic):

Conspiracy theories have claimed that sudden temperature increases in the Arctic, in particular, are proof that HAARP warms the ionosphere and changes the global climate.

2.4.2 Directed Energy Weapons

Directed Energy Weapons are weapons systems designed to cause harm by concentrating energy on a target without firing physical ammunition. This energy may take the form of lasers, microwaves, high-frequency electromagnetic waves, or particle beams. What distinguishes DEW systems from conventional weapons is that they do not rely on explosions or projectiles; instead, energy is directed straight at the target. Today, DEW technologies are no longer purely theoretical. Countries such as the United States, China, and Russia have developed laser systems to neutralize unmanned aerial vehicles, high-energy microwave weapons capable of disrupting electronic systems, and crowd-control technologies such as the Active Denial System. These systems are generally designed for short-range, specific targets and controlled use. Current scientific evidence does not support the idea that DEWs can be used at a scale capable of controlling earthquakes, hurricanes, or broader climate systems.

In conspiracy theories, however, DEWs are often linked to sudden and difficult to explain events. Large wildfires, unexpected infrastructure failures, power grid disruptions, or sudden health incidents are frequently placed at the center of these narratives. Laser- or microwave-based weapons are claimed to affect wide areas without being easily detected, which feeds the idea of DEWs as "invisible weapons." Within this framework, they are presented as hidden forces behind events that appear natural on the surface. One of the most controversial claims is that earthquakes can be triggered using DEW technology. According to this view, high-energy electromagnetic waves could increase stress within the Earth's crust and activate fault lines. However, the scientific consensus in geology and seismology clearly indicates that directing energy at this scale is beyond current technological capabilities.

Despite this, the fact that major earthquakes sometimes occur at politically sensitive or symbolically significant moments continues to fuel the repetition of such claims.

2.5 Legal Actions

2.5.1 Geneva Convention

The Geneva Conventions are the core instruments of international humanitarian law, designed to protect civilians, the wounded, prisoners of war, and those who are no longer taking part in hostilities. Although the first convention was adopted in 1864, the framework that is primarily relied upon today consists of the four Geneva Conventions of 1949 and their Additional Protocols adopted in 1977. The main principle of these texts is that warfare is not without limits; the means and methods of war must be legally constrained. This approach establishes an ethical and legal foundation that applies not only to weapons themselves, but also to indirect methods of warfare.

The Geneva Conventions do not clearly regulate natural disasters or environmental interventions. However, when natural disasters are used as tool of war, the humanitarian consequences fall within the scope of Geneva law. Whether a flood, drought, or environmental destruction is deliberately caused or not, civilians affected by such events remain protected persons under the Conventions. In this sense, the Geneva framework focuses less on the disaster itself and more on its impact on human life. This represents a key distinction between the Geneva Conventions and the ENMOD Convention.

The 1977 Additional Protocol I is particularly significant in bringing Geneva law closer to ENMOD in relation to environmental harm. It prohibits methods of warfare that cause widespread, long-term, and severe damage to the natural environment. The wording of this provision closely mirrors the terminology used in ENMOD, reflecting an emerging recognition that environmental destruction is not merely a military concern, but also a humanitarian one. Within this framework, the natural environment becomes directly linked to the protection of civilian life.

A major grey area within the Geneva Conventions lies in establishing a causal link between a natural disaster and a military attack. The identification of violations under Geneva law often requires clear evidence of intent, target, and method. In cases involving environmental manipulation or disasters, however, such connections are extremely difficult to prove. Determining whether a flood or drought is natural or deliberately induced may be scientifically inconclusive, further complicating legal accountability.

Another significant grey area relates to the limited scope of the Geneva Conventions concerning non-state actors. In contemporary conflicts, environmental harm may be caused by armed groups, militias, or actors operating indirectly on behalf of states. In such situations, attributing responsibility becomes highly contested. The deliberate destruction of environmental infrastructure or the strategic exploitation of disasters raises serious questions about the practical applicability of Geneva law in modern warfare.

2.5.2 ENMOD Convention

ENMOD, which stands for the "Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques," is a United Nations treaty passed in 1977 and began to take effect in 1978. The convention's main goals are to forbid the intentional weaponization of environmental processes within the limits of international law and to stop the use of nature as a weapon of war.

A comprehensive legal structure that forbids the military or other hostile use of environmental modification techniques is provided by the ENMOD Convention. The deliberate and intentional disruption of the environment's natural processes is at the heart of it. In this regard, it is against convention for humans to manipulate atmospheric, geophysical, biological, or hydrological systems in order to further a state's military goals. Examples of using environmental modification as a weapon of war include manipulating precipitation patterns, directing storms and hurricanes, or causing droughts or floods.

The entire natural environment, including the land, sea, and air, is covered under the convention's wide scope of application. The intentional modification of glaciers, oceans, the atmosphere, and even the ionosphere is prohibited under ENMOD if it is done for hostile or military objectives. In this context, the treaty attempts to defend the integrity of environmental systems overall rather than just certain kinds of natural disasters. The disruption of environmental balance or long-term ecological harm is considered sufficient to constitute a violation of the agreement; immediate physical destruction is not required.

Rainfall, flooding, and climatic factors can be used to interfere with enemy logistics, as Project Popeye has shown. When ENMOD was created, it was anticipated that such interventions would eventually turn into more significant disasters like droughts, extreme precipitation, or regional climatic imbalances. The convention is therefore a cornerstone of the weaponization of natural disasters literature, even if it does not specifically use the term "natural disaster weapons." This is because it is the first legal document to frame this possibility. Not only does ENMOD forbid environmental interventions, but it also aims to keep disasters from being used as weapons of chemical warfare.

The ENMOD Convention has a number of legal flaws despite its significance. The requirement that restrictions only apply when environmental adjustments have "widespread, long-lasting, or severe" effects is the most fundamental grey area. It is still unclear which interventions are covered by the ban because these phrases are not quantitatively or explicitly defined. For example, states may be able to avoid legal liability by presenting short-term but significant increases in rainfall or locally limited environmental changes as being below these limits. States may describe environmental interventions as "limited" or "experimental" due to this uncertainty.

The exclusive focus of ENMOD on military or hostile use results in another significant legal gap. Environmental changes carried out for peaceful or scientific reasons are not specifically forbidden under the agreement. However, the lines separating military and civilian applications have become blurry in contemporary technology contexts. Even though they appear to be harmless, climate research, weather modification initiatives, and environmental simulations may tangentially support the development of military capability. The enforcement of the convention is severely weakened as a result of this dual-use problem.

The exclusion of non-state actors from the convention's scope creates another dark area. ENMOD lacks explicit laws regarding environmental interventions carried out by armed groups, private companies, or individual actors because it was primarily draughted within the framework of state relations. Another significant criticism of ENMOD is the inadequacy of its enforcement and monitoring systems. The treaty provides little direction on how to identify violations, how independent checks should be performed or what kinds of penalties should be imposed. It is practically impossible to prove that a state intentionally caused a natural disaster since environmental interventions are technically challenging to identify and attribute. Because of this, the convention's deterrent effect is still mostly normative rather than useful.

Additionally, challenges that go beyond ENMOD's original focus have been brought about by technological advancements. The convention did not specifically anticipate contemporary practices when it was adopted in the 1970s. Calls for the convention's modernisation or modification have grown as a result of this circumstance.

Finally, the paradoxical growth of conspiracy ideas has been facilitated by the existence of ENMOD. The convention promotes stories that declare that natural disasters are purposefully weaponised by legally recognising that modifying the environment is potential and possibly dangerous. These claims can be presented as "plausible even if unproven" due to legal uncertainties and enforcement gaps. Therefore, ENMOD simultaneously confirms that this concept has a place in international legal debate while working to prohibit the use of natural catastrophes as weapons of war.

2.5.3 International Humanitarian Law

International Humanitarian Law does not treat natural disasters as independent legal events. Its concern begins when human suffering emerges, particularly in situations of armed conflict or political violence. From an IHL perspective, the critical issue is not whether a disaster is natural or man-made, but how its consequences affect civilians and how parties to a conflict behave in response. When floods, earthquakes, droughts, or environmental collapse occur in fragile or conflict-affected settings, their impact is often intensified by military strategies, governance failures, or deliberate neglect.

In this context, the idea of the weaponization of natural disasters does not necessarily require the direct creation of a disaster. Instead, it can emerge through the exploitation of existing

vulnerabilities. If a party to a conflict restricts humanitarian access after a disaster, destroys critical infrastructure such as dams or water systems, or allows environmental degradation to continue in order to weaken civilian populations, such actions may amount to indirect methods of warfare. International Humanitarian Law prohibits attacks on civilians and civilian objects, and this protection extends to situations where harm is inflicted through environmental or disaster-related means rather than conventional weapons.

Environmental damage has gradually entered the humanitarian legal framework as a factor directly linked to civilian survival. Additional Protocol I to the Geneva Conventions prohibits methods of warfare that cause widespread, long-term, and severe damage to the natural environment. While this threshold is high and often difficult to prove, its existence reflects a growing recognition that environmental destruction can function as a form of violence. When environmental harm leads to food insecurity, water scarcity, displacement, or the collapse of livelihoods, the line between environmental damage and humanitarian harm becomes increasingly blurred.

Another critical dimension under IHL is humanitarian access. In disaster situations occurring during armed conflict, parties are obligated to allow and facilitate rapid and unimpeded humanitarian assistance. The deliberate obstruction or politicization of disaster relief may transform a natural catastrophe into a strategic tool. In such cases, suffering is not merely a consequence of nature but becomes part of a broader power dynamic. This is where the concept of catastrophe as a tool of war becomes particularly relevant, as disasters are no longer treated solely as emergencies but as conditions that can be manipulated to exert pressure, control territory, or weaken populations.

One of the main limitations of International Humanitarian Law in addressing these dynamics lies in the difficulty of attribution. Proving intent, causation, or direct responsibility in cases involving environmental processes and natural hazards is extremely challenging. For this reason, IHL focuses less on identifying the origin of the disaster and more on evaluating conduct. The key legal question becomes whether parties respected their obligations toward civilians before, during, and after the disaster.

When viewed alongside instruments such as the ENMOD Convention, IHL operates as a complementary framework. ENMOD seeks to prevent the deliberate modification of the environment for hostile purposes, while IHL provides protection once harm has occurred or when disasters are exploited during conflict. Together, they reflect an evolving understanding of warfare, one in which indirect harm, environmental manipulation, and structural vulnerability play an increasingly central role.

Overall, International Humanitarian Law remains a crucial, though strained, framework for addressing the humanitarian consequences of disasters in conflict settings. As warfare expands beyond conventional battlefields and increasingly intersects with environmental and climatic risks, IHL is challenged to adapt. The growing relevance of concepts such as weaponization of natural disasters underscores the need to interpret humanitarian norms not

only in relation to weapons, but also in relation to the broader conditions under which human suffering is produced and sustained.

2.6. Case Studies

2.6.1 Turkiye-Syria Earthquake

Two earthquakes took place on February 6, 2023, in the districts of Kahramanmaraş in southern Turkey. At 04:17, the first earthquake (Mw 7.7) occurred. The second one (Mw 7.6) happened at 13:24, just 9 hours later. According to the European-Mediterranean Seismological Centre, the earthquakes seriously damaged 11 Turkish provinces that are home to almost 15 million people. President Erdoğan declared that as of 13:04 on February 6, 9,000 personnel were conducting search and rescue operations as part of the state's emergency response, and this number was continuously rising. A level four disaster alert was released by the Disaster and Emergency Management Authority (AFAD), along with a request for foreign aid. However, there were significant issues with coordinated action, information gaps, and uncertainty during the first critical hours, in addition to the public's growing criticism of the state and government agencies' reaction to the disaster.

President Erdoğan declared on February 7, 2023, that the state's response to the tragedy was insufficient since there was either very little or no communication or transportation in the area due to the devastation to vital facilities. An emergency was declared in 10 Turkish provinces.
On February 8, 2023, the public was not given an official reason for the slowdown in Internet connectivity. Additionally, several social media sites were limited by bandwidth limitations, primarily Twitter (X) and TikTok. As journalists, activists, and professors were arrested and fired, difficulties grew. The effects of these strict regulatory restrictions on the ongoing search and rescue operations were one of the main public worries. Under debris, affected individuals continued to transmit their geolocation data. Online resources were used to organise search and rescue efforts. Social media platforms were being used by millions of people to connect and communicate with their friends and family. The restriction was put in place between 4:37 p.m. and 3:44 a.m. (local time), during the most crucial 11 hours and 7 minutes of the emergency response phase of the disaster. The President made his first visit to the area affected by the disaster during the restriction period. After Turkish authorities and Twitter's Head of Policy on Disinformation negotiated the necessity for content takedowns, the official media stated that service had been restored.

On February 21, 2023, the Information and Communication Technologies Authority blocked access to one of Turkey's biggest online communities, Ekşi Sözlük, based on the testimony of a military officer who worked and reported the factual issues in search and rescue operations in Hatay. The Ankara 5th Criminal Court of Peace decided to implement an access ban, citing the protection of public order and national security as justifications.

As of February 23, 2023, the collapse of airports, central police stations, highways, power lines, water supplies, sanitation and health facilities, and AFAD buildings have significantly increased emergency response issues. 53,537 individuals died, according to the Ministry of Internal Affairs' most recent official announcement from 2024, which was also posted on the minister's personal Twitter account. There were 107,213 injuries. The earthquake tragedy affected 9,100,000 persons and displaced 3,000,000.

The 2023 Turkey-Syria earthquake has given rise to a number of conspiracy theories, such as those concerning the HAARP project, which is frequently accused of involving technologies that can artificially cause seismic activity, climate or weather weapons, which are thought to enable the intentional manipulation of natural events, and directed energy weapons (DEWs), which are described as sophisticated military systems capable of causing widespread physical disruption.

It stands out as a tragedy when the risk was recognised for many years but was not properly minimised. Despite Turkiye's location in an area with a significant seismic risk, it has become clear that risk reduction measures were not sufficiently implemented in reality, and that building safety, urban planning, and inspection systems continued to be extremely inadequate. Because of this, the earthquake was not only a "natural hazard," but rather a predictable and perhaps avoidable disaster.

Vulnerability was greatly enhanced throughout the risk reduction period by elements including unregulated construction, zoning amnesties, and failure to modify existing building stock. Despite existing legislative frameworks, gaps in implementation and the prioritisation of political and economic interests above risk mitigation programs worsened the effects of the earthquake.

Early warning systems, local disaster plans, and community-based disaster awareness were found to be insufficient in terms of readiness. Beyond the scope of the disaster itself, early coordination issues, regional limitations in search and rescue capabilities, and logistical errors proved that institutional preparedness processes were not operating efficiently. The response procedure was made more difficult by the unclear division of responsibilities between central and local authorities.

State capacity was significantly stressed throughout the reaction phase, making it challenging to provide shelter, healthcare, and search and rescue activities at the same time. This proved that disaster risk management is closely related to governance and is not only a technological problem.

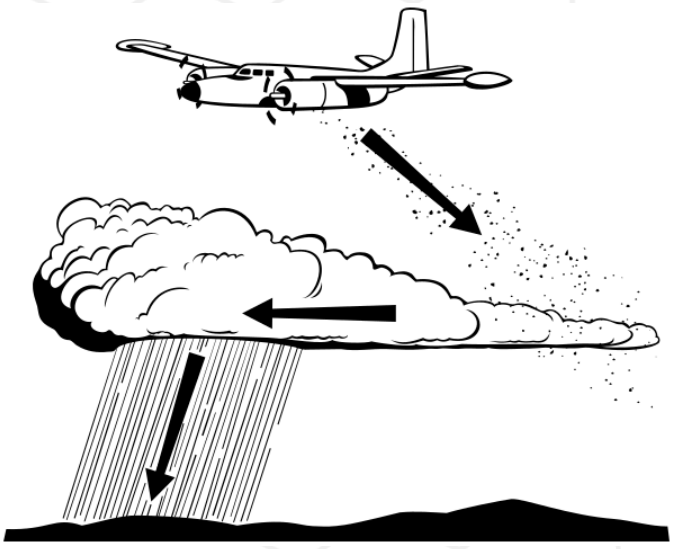
In conclusion, the 2023 earthquake between Turkey and Syria can be evaluated as a multifaceted problem brought on by the neglect of known threats rather than as a "natural disaster." The earthquake clearly demonstrated how a large-scale disaster can become a catastrophe due to the fragmentation of risk mitigation, readiness, response, and recovery phases.

Following the earthquake, the distribution of resources, humanitarian corridors, and access to aid, especially in the Syrian context, became clearly susceptible to political negotiations. The tragedy became an indirect tool of pressure on civilian populations due to the limitation, delay, or conditional distribution of humanitarian aid. This enhanced discussions about the weaponization of disasters and enabled the disaster to have a strategic impact on people even in the absence of armed conflict. According to Türkiye, the earthquake created the foundation for political restructuring through a state of emergency, control over information flows, and centralised decision-making procedures. Certain administrative and legal measures taken under the justification of disaster management created an environment in which democratic oversight was restricted and executive power was strengthened.

The earthquake turned into a strategic platform for geopolitical positioning and humanitarian diplomacy on a global scale. Through this strategy, aid-giving states and international players were able to increase their regional influence, gain political legitimacy, and produce soft power. In this way, the catastrophe evolved into a non-traditional military tactic for indirect political power.

Another characteristic of a catastrophe is the widening of social disparities during the earthquake process. Access to shelter, healthcare, and security services was disproportionately difficult for poor, disadvantaged, and marginalised communities, and institutional violence worsened the disaster's effects. This shows that the disaster's impacts on society were not equal and that the social aspect of the tragedy was at least as important as its physical devastation.

2.6.2 Project Popeye



Project Popeye was a covert US military weather modification operation that ran from 1967 to 1972 during the Vietnam War. The project's main goal was to use cloud seeding techniques to enhance rainfall in order to flood important logistical routes, especially the Ho Chi Minh Trail, limiting opposing forces' movement and supply capacity. In this context, many people consider Project Popeye to be among the earliest examples of intentional manipulation of natural processes for military purposes.

The use of cloud seeding with silver iodide, a method that can raise the chance of rainfall under the right climatic circumstances, was the primary focus of Project Popeye.

Popeye represented the first direct application of this technique for military goals, although it had been tested for civilian purposes before the war. The level to which these impacts were controllable is still open to discussion, despite official records claiming that rainfall duration continued and the number of humid days increased in some locations.

From the perspective of the military, Project Popeye was intended to be an indirect weapon of warfare rather than a directly destructive weapon. The plan was to disrupt enemy supply lines by changing climatic conditions rather than depending on conventional firepower.The effort is seen as a symbol of the change from traditional military tactics to forms of conflict including environmental intervention because it signalled a shift towards seeing nature itself as an active strategic element in warfare.

The fact that Project Popeye existed and was kept under doors for a long time is one of the primary reasons it has promoted conspiracy ideas. Questions like "If rain can be created, could other natural disasters also be manufactured" were raised by the formal confirmation that governments might generate rainfall. In this way, Project Popeye has served as a link between reality and fiction, and it has often been associated with subsequent projects like HAARP.

Project Popeye is now regarded as a historical landmark in conversations about the weaponization of natural disasters. The research strengthened the belief that nature might be used as a weapon, adding to narratives that indicate floods, droughts, and even climate change as events that may be purposefully managed. Popeye is still one of the few historical examples that gives these arguments some authority, even if the majority of these statements are unsupported by scientific data.

2.7. Major Parties Involved

2.7.1 NGOs and Civil Society

The International Committee of the Red Cross (ICRC)

The International Committee of the Red Cross (ICRC), founded in 1863, is one of the oldest and most authoritative institutions in the field of international humanitarian law. Headquartered in Geneva, the ICRC played a historical role in the development of the Geneva Conventions and is today recognized as their guardian and key implementing body. Its core mission is to protect civilians, the wounded, prisoners of war, and other persons hors de combat during armed conflicts and situations of violence.

The ICRC’s engagement with natural disasters is shaped not by the causes of disasters themselves, but by their humanitarian consequences. The organization does not investigate whether a disaster is natural or human-induced; instead, it focuses on emerging humanitarian needs and legal obligations. This approach positions the ICRC as a central actor within the frameworks of both the Geneva Conventions and ENMOD. When a natural disaster occurs in a conflict setting or exacerbates the effects of armed conflict, the ICRC addresses the situation through the lens of international humanitarian law.

In debates on the weaponization of natural disasters, the ICRC's relevance lies in its role in activating legal protections for civilians when disasters are used, directly or indirectly, as tools of warfare. Even if a flood, drought, or environmental destruction is not the result of a direct military attack, it may still constitute a violation of humanitarian law if it threatens civilian life and is exploited by conflict parties for strategic gain. In such cases, the ICRC focuses not on the origin of the disaster, but on its impact and how it is used.

The ICRC also plays an important role in highlighting the link between environmental harm and humanitarian consequences. The prohibition in the 1977 Additional Protocol I against warfare methods that cause "widespread, long-term and severe" damage to the natural environment is reflected in the ICRC's field reports and observations. Environmental destruction that restricts access to water, undermines agriculture, or triggers mass displacement is addressed by the ICRC within the broader framework of civilian protection.

One of the organization's defining characteristics is its commitment to neutrality, independence, and confidentiality. Rather than publicly accusing states, the ICRC typically raises concerns through confidential dialogue with relevant parties. This approach is particularly important in situations where it is difficult to prove intent behind environmental damage, allowing the organization to maintain access on the ground and continue humanitarian operations.

In conclusion, the ICRC is not an actor seeking to identify perpetrators in discussions on the weaponization of natural disasters. Rather, it serves as a stabilizing force that aims to limit the exploitation of disasters in wartime and to mitigate their impact on civilian populations. In this sense, the ICRC functions as a practical bridge between ENMOD's preventive logic and the protective framework of the Geneva Conventions.

2.7.2 Governments

Russia

Russia plays a significant role in these discussions largely due to the legacy of environmental and geophysical research inherited from the Soviet period. Throughout the Cold War, the Soviet Union conducted extensive studies on atmospheric experiments, electromagnetic waves, and geophysical processes. This historical background has contributed to the perception that Russia still possesses the capacity to influence environmental systems today. In conspiracy narratives, Russia is often associated with cyber warfare, electromagnetic interference, and so-called asymmetric warfare methods. Claims that large-scale natural disasters could be used as indirect tools to weaken geopolitical rivals frequently place Russia among the main actors, even when such claims lack empirical evidence.

China

China is at the center of these debates because of its openly conducted large-scale programs in weather modification and climate intervention. Cloud seeding operations are officially implemented, particularly to support agricultural productivity and water management. These activities are not secret; they are carried out as part of state policy and are publicly acknowledged. However, the scale of these programs and China's technological capacity have led to speculation that such activities could also serve military purposes. In these narratives, China is often portrayed as a state capable of altering regional climate patterns. At the same time, existing scientific evidence suggests that the effects of such interventions remain limited and largely regional in scope.

Haiti

Haiti represents one of the most striking examples of vulnerability in the context of natural disasters, particularly after the 2010 earthquake. The scale of destruction cannot be explained by geological factors alone, but is closely linked to weak state capacity, inadequate infrastructure, and long-standing poverty. Although large amounts of international aid were mobilized after the disaster, problems in aid distribution, failures in long-term reconstruction, and the further erosion of state authority made the impact of the earthquake long-lasting. Haiti illustrates how natural hazards, when combined with fragile governance structures, can turn into a full-scale humanitarian catastrophe.

Horn of Africa (Somalia – Ethiopia – Kenya)

The Horn of Africa has been struggling with prolonged droughts and recurring food crises for years. The severe drought between 2020 and 2023 displaced millions of people and triggered a major humanitarian emergency. This situation reflects the combined effects of climate change, weak agricultural systems, and limited state capacity. While regional governments and international organizations have provided humanitarian assistance, deep-rooted structural problems have caused the crisis to repeat itself. The Horn of Africa demonstrates how natural hazards can evolve into slow-onset disasters with long-term security implications.

2.7.3 United Nations Office for Disaster Risk Reduction (UNDRR)

UNDRR is the main institutional actor within the United Nations system that approaches disasters through the lenses of prevention, risk reduction, and resilience building. Its perspective does not treat disasters as unavoidable "acts of nature," but rather as risk processes shaped largely by human activities, governance failures, and structural vulnerabilities. While this approach does not directly engage with the security-oriented language of the weaponization of natural disasters, it focuses on the conditions that make such scenarios possible.

From UNDRR's perspective, the central issue is not the hazard itself but the management of risk. Risk is defined as the interaction between hazard, exposure, and vulnerability. Within

this framework, a natural event turns into a disaster largely due to factors such as poor urban planning, inadequate infrastructure, political instability, and conflict environments. This understanding points to a critical insight in discussions on catastrophe as a tool of war: when vulnerabilities are left unaddressed, natural disasters, whether intentionally triggered or not, can be easily exploited for strategic advantage.

UNDRR does not directly address the question of whether natural disasters are deliberately caused. Its mandate is not to identify perpetrators or establish legal responsibility, but to reduce the destructive impacts of disasters. However, this does not mean that UNDRR lacks a preventive role in relation to the weaponization of natural disasters. On the contrary, risk reduction policies aim to remove the conditions under which disasters can be used as tools of pressure, weakening, or control.

The Sendai Framework for Disaster Risk Reduction (2015–2030) is UNDRR's most important normative instrument in this field. The framework defines disaster risk reduction as a primary responsibility of states and emphasizes good governance, early warning systems, risk-informed planning, and community-based preparedness. While the Sendai Framework does not explicitly prohibit the political or military manipulation of disasters, it makes the strategic use of disasters far more difficult by reducing structural vulnerabilities.

2.8. Questions to be Addressed

How can states strengthen disaster risk reduction mechanisms to prevent natural hazards from being exploited as tools of political or military pressure?

How should international law evolve to address indirect and non-traditional methods of warfare, including environmental and disaster-related harm?

What mechanisms can be developed to close the legal and technical gaps within existing frameworks such as ENMOD and the Geneva Conventions?

What legal or institutional reforms are needed to regulate dual-use environmental and climate technologies?

How can states reduce political interference in disaster response and recovery processes?

How can governments improve coordination between disaster management authorities, security institutions, and humanitarian actors during large-scale catastrophes?

What is the role of higher education institutions in training disaster management and risk reduction professionals?

3. The Question of Enhancing Community Resilience to Natural Disasters

3.1. Introduction to the Agenda Item

Strengthening community resilience to natural catastrophes is one of the most critical and complex issues plaguing the international community in the twenty-first century. Communities around the world, especially those in developing and hazard-prone areas,

remain disproportionately vulnerable to the effects of natural hazards as their frequency and intensity increase. Although natural disasters are inevitable, local governments can help mitigate their catastrophic effects by strengthening infrastructure, preparedness, governance, and access to resources. Consequently, the UNDRR's primary target is to find measures to build resilience sustainably and inclusively through these factors.

The global shift in approaching disaster management strategies highlights the severity of the situation. Previously, emergency response and post-disaster aid were the primary methods of disaster response. Communities faced frequent cycles of loss and recovery after every disaster, resulting in little gain in resilience against such catastrophes. As a result, following the many devastating effects of multiple disasters in the late 20th and early 21st centuries, the international community set out to re-examine and identify more effective risk-mitigation strategies through proactive risk reduction and community-centered measures. As a result, long-term prevention and preparedness have become the new goals for fighting such disasters. Global efforts currently center on understanding disaster risk, bolstering local governance, investing in resilience, and improving readiness for successful response, all under the direction of the UNDRR. Unfortunately, despite these efforts, significant regional disparities persist, and many communities continue to lack the resources, information, and support needed to withstand and fully recover from natural disasters.

3.2. Key Terms

Resilience: The capacity to withstand or to recover quickly from difficulties and challenges.

Hazard: A potential source of danger.

Vulnerability: The state of being exposed to the possibility of being attacked or harmed, either physically or emotionally.

Compound Risk: When multiple risks occur simultaneously or one after another.

Rapid Urbanization: Rapid urbanization refers to the swift growth and expansion of urban areas, often due to migration from rural to urban settings in search of better economic opportunities and living conditions.

Multi-Hazard: The selection of multiple major hazards faced by a country, with consideration for their potential interrelated effects.

Paris Agreement: The Paris Agreement is an international treaty on climate change that was signed in 2016. The treaty covers climate change mitigation, adaptation, and finance.

3.3. Historical Background

Natural disasters have plagued human communities since the dawn of society. From the tragedy of Pompei to the earthquake of Damghan and the Black Plague, there are countless examples of disasters that have caused immense and irreparable damage to human societies. Major disaster events have not only resulted in humanitarian and economic loss, but they have also revealed that the only way to break these cycles of loss and tragedy is through

understanding our surroundings, building resilience, and shifting towards prevention rather than reacting after the disaster has already hit.

The systematic advances of disaster risk reduction have been shaped by the lessons learned from assessing such large-scale disasters. The international community has continuously improved and restructured international frameworks by analyzing past events for common trends as well as gaps and weaknesses in strategies, while advocating for the investment in the use of technology to enhance disaster preparedness and increase the effectiveness of relief aid strategies.

3.3.1. Case Studies

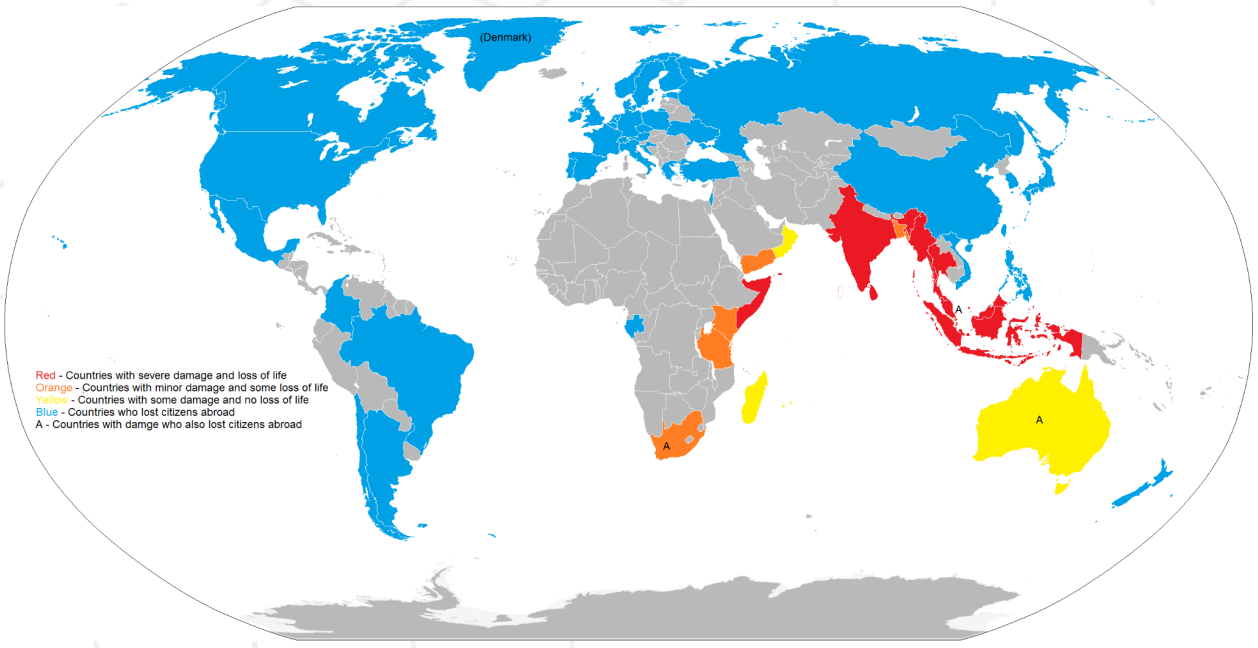
The 1970 Bhola cyclone: The deadliest tropical cyclone on record and one of the deadliest humanitarian disasters caused by a natural event, it hit East Pakistan (modern-day Bangladesh) and India's West Bengal on November 12, 1970. As part of a series of Cyclones in what was known as the "North Indian Ocean cyclone season," the Bhola cyclone was the sixth and strongest cyclonic storm, killing at least 300,000 people, with estimates as high as 500,000.

The cyclone caused severe damage to humanitarian, economic, and infrastructural aspects. Local sources estimate that 3.6 million people are directly affected by the storm, with many offshore islands devastated, villages wiped out, and crops destroyed throughout the region. In the most severely affected upazila, Tazumuddin, over 45% of the population of 167,000 were killed by the storm. The survivors claimed that approximately 85% of homes in the area were destroyed or severely damaged, with the most significant destruction occurring along the coast. In a region where almost 80% of protein sources are derived from seafood, ninety percent of marine fishermen in the area suffered heavy losses, including the destruction of 9,000 offshore fishing boats. Of the 77,000 onshore fishermen, the cyclone killed 46,000, and 40% of the survivors were affected severely. In total, approximately 65% of the coastal region's fishing capacity was destroyed by the storm. The total damage from the storm is approximately 86.4 million USD, with around 63 million USD in crop and livestock losses, leaving 75% of the population dependent on aid from relief workers for food.

The local government received a lot of criticism for its lack of readiness for the cyclone, especially after two previously destructive cyclones struck in October 1960, which killed at least 16,000 people in East Pakistan. In addition, even though the government had contacted the American government for assistance in developing a system to avert future disasters, the central government did not implement all of the recommendations listed by the director of the National Hurricane Center at the time in his detailed 1961 report. As a result, a large part of the population was reportedly caught off guard by the storm, and there were indications that East Pakistan's storm warning system was not used correctly by the related authorities. Moreover, political leaders in East Pakistan were deeply critical of the central government's initial response to the disaster. Authorities were accused of playing down news coverage; the

Pakistan Red Crescent began operating independently of the central government; and companies had to wait days for permission to start relief operations, leading journalists on the ground to claim there was no relief coordination, prompting major international calls for a restructuring of disaster relief coordination.

The 2004 Indian Ocean Tsunami: In the early morning of December 26, 2004, a magnitude 9.2 Earthquake struck northern Sumatra, Indonesia, undersea, triggering a massive tsunami with waves up to 30 meters high. The tsunami itself was the deadliest tsunami ever recorded, and the earthquake was the most powerful recorded in the 21st century. Estimated deaths reached up to 228,000 people across 14 countries, mainly in Indonesia, India, and Thailand, leaving millions of others displaced. The high fatality rate in the area was primarily due to the community's lack of preparedness for a tsunami, limited knowledge and education among the population about the natural phenomenon, and the large number of tourists in the area during the holiday period. Helicopter surveys revealed entire settlements virtually destroyed, with destruction extending miles inland.



While the overall impact on the national economies was minor, local economies were devastated.

Roads, ports, hospitals, and schools were severely damaged or washed away; critical infrastructure was lost, especially in coastal communities, which were the most affected by the waves. The fishing and tourism industries were particularly affected. In a sector that provided direct employment to 250,000 people, preliminary estimates indicated that the wave surges destroyed 66% of the fishing fleet and industrial infrastructure in coastal regions. This destruction left hundreds of thousands of people without income, causing food shortages and

a sharp decline in livelihood for millions. Overall economic losses were estimated at more than **10 billion USD**, while millions of survivors were left dependent on international humanitarian assistance for shelter, food, and medical care. The tourism sector, on the other hand, saw a sharp decline, as many tourists who saw the extensive media coverage of the event cancelled their trips to that part of the world, even if their trips were to regions unaffected by the disaster.

As mentioned above, the community's lack of preparedness for such a catastrophe is considered the leading cause for such a high fatality rate. At the time, even though similar systems were in place for the Pacific, no tsunami early warning system was placed in the Indian Ocean until 2005, after the disaster. As a result, most of the coastal population was unaware of the early signs of a tsunami, and evacuation procedures were either nonexistent or too late to implement. In the aftermath, the disaster drew widespread criticism of global preparedness. It became a catalyst for significant reforms in disaster risk reduction, including the establishment of the **Indian Ocean Tsunami Warning and Mitigation System** and the adoption of the **Hyogo Framework for Action** (2005–2015).

The 2010 Haiti Earthquake: One of the most devastating earthquakes in the history of the Western Hemisphere, the Haiti earthquake struck on 12 January 2010 with a magnitude of 7.0, approximately 25 kilometers southwest of the capital, Port-au-Prince. Despite its moderate magnitude compared to other global earthquakes, the quake's shallow depth and proximity to densely populated urban centers resulted in catastrophic consequences. The disaster claimed the lives of an estimated 220,000 to 300,000 people, displaced over 1.5 million individuals, and injured thousands more, claiming its place as one of the deadliest natural disasters of the twenty-first century.

The resulting damage and destruction across Haiti were devastating. Large portions of Port-au-Prince and surrounding cities were destroyed, and government buildings, hospitals, schools, and housing were all turned to little more than destroyed structures and rubble. Estimates indicate that **over 250,000 residences and 30,000 commercial buildings** collapsed or were severely damaged, and that economic losses totaled around 11 billion USD, equivalent to more than **100% of Haiti's annual GDP** at the time. This massive infrastructure loss had immense humanitarian consequences, disrupting healthcare, clean water supplies, and sanitation. This all led to a significant portion of the population being displaced and dependent on humanitarian aid for basic survival.

Unfortunately, before the earthquake, local governance did not enforce building codes, risk-reduction policies were not implemented, and swift emergency response measures were not prepared. Paired with the shocking scale of devastation, the lack of preparedness exposed a concerning weakness in urban planning. Unregulated urbanization led to structures being built with substandard materials and without consideration of earthquake risk. International aid following the disaster arrived swiftly and significantly eased humanitarian concerns; however, coordination challenges, logistical issues, and planning difficulties with local

institutions reduced the effectiveness of this strategy. This further cements the importance of disaster risk reduction by implementing effective strategies into local urban planning, governance, and community resilience.

The 2011 Great East Japan Earthquake and Tsunami: On the 11th of March 2011, one of the most powerful earthquakes ever recorded in history struck the eastern coast of Japan with a magnitude of 9.0. Consequently, within minutes, the earthquake triggered a massive tsunami that hit coastal communities, overtook sea walls, and caused widespread flooding. Twenty thousand people were killed in this disaster, even with Japan's strict earthquake and tsunami precautions, the consequences showed that there was still a long way to go.

In the immediate aftermath, more than 450,000 people were displaced as entire towns on the northeastern coast were leveled. The tsunami caused severe infrastructure damage; ports were temporarily shut down, roads became impassable, and widespread power outages occurred. The disaster also triggered the **Fukushima Daiichi nuclear accident**, where tsunami waves overtopped seawalls and destroyed diesel backup power systems, leading to severe problems at Fukushima Daiichi, including three large explosions and radioactive leakage. This incident led to long-term evacuations and environmental contamination that Japan is still fighting today. As the fishing, agricultural, and industrial sectors recovered from the long-term shutdown, the combined losses from the shutdown resulted in the costliest natural disaster on record, totalling over 200 billion USD.

Despite Japan’s advanced disaster preparedness systems, including strict seismic building codes, public education campaigns, and regular emergency drills, the disaster exposed critical limitations in existing risk assessments and infrastructure design. Sea walls and tsunami defenses were constructed based on historical projections that underestimated the event's magnitude, and early warning systems, while effective for the earthquake itself, provided limited time for tsunami evacuation in certain areas. The response to the nuclear crisis revealed coordination and governance challenges between operators and authorities. The disaster highlighted the ongoing need to advance every nation’s game plan to address natural disasters. Exposing many gaps in previous frameworks and strategies in regards of, lack of coordination between regulators; operators; and emergency authorities, focus on single and traditional disaster scenarios when often disasters cause a cascading effect of compound risk such as an earthquake leading to a tsunami that then caused a nuclear accident and long-term displacement, weak integration of disaster risk into core development processes instead of treating it as a separate emergency issue, and the overrelience on structural and technological mesures leading to the underestimation of such disasters. This influenced a global disaster risk reduction discourse and contributed significantly to the development of the **Sendai Framework for Disaster Risk Reduction** (2015-2030).

3.4. Current Situation / Focused Overview

3.4.1. Challenges With Rapid Urbanization and Population Growth

On the 15th of November 2022, the human population historically crossed the 8 billion milestone in worldwide population. According to United Nations Statistics, over 45% of the world population resides in cities, more than double the statistics in 1950, with an expected rise even further by the mid-21st century. Particularly in densely populated metropolises, this rapid urbanization and population growth have increased the risk of exposure to natural disasters. Such developing cities bring economic opportunities, but at the same time, they heighten vulnerability to natural disasters due to the high concentration of people, infrastructure, and assets in an overpopulated and relatively small geographic area.

To provide an example, the 2023 Turkiye-Syria earthquakes illustrate how uneven urban development and the neglect of risk-aware planning in an urban area exacerbated the consequences of the earthquake. Thousands of deaths and a devastating destruction of buildings, homes, and infrastructure were the result of 2 powerful earthquakes of magnitude 7.7 and 7.6 on the 6th of February, 2023. Thousands were left without shelter and basic services, as entire city blocks and streets collapsed, leaving either destroyed or severely damaged buildings and homes.

The results of the earthquake investigations found that the underlying factors that led to that extent of damage were urbanization challenges. The major part of the collapsed buildings lacked modern earthquake-resistant standards. Investigations showed that an estimated 97 % of collapsed buildings were constructed before significant earthquake-resistant regulations were fully implemented. This clearly shows the effects of rapid urbanization, coupled with weak building standards that weakened structural resilience.

These cases are not unique to Turkiye, nor are they unique to earthquakes alone. Rapidly developing urban areas tend to grow faster than regulatory capacity, so enforcing urban plans and building standards becomes tedious. And the results are difficult evacuations, overwhelmed infrastructure, and impeded access to emergency services when such a disaster might occur.

These cases are not unique to Turkiye, nor are they unique to earthquakes alone. Rapidly developing urban areas tend to grow faster than regulatory capacity, so enforcing urban plans and building standards becomes tedious. Compound risks are also a major point of concern. The interconnected nature of urban cities, especially when planned without disasters in mind, raises the possibility of compounded effects. A common but dangerous example would be a collapsed building blocking transportation routes, thus delaying relief operations. And the results are difficult evacuations, overwhelmed infrastructure, compound risks, and impeded access to emergency services when such a disaster might occur.

3.4.2. Escalating Climate Change and Environmental Degradation

Escalating climate change and environmental degradation have significantly intensified the frequency, severity, and complexity of natural disasters, posing growing challenges to community resilience worldwide. Rising global temperatures, shifting precipitation patterns, and sea-level rise have contributed to an increase in extreme weather events, including heatwaves, floods, droughts, and tropical storms. Scientific assessments have increasingly demonstrated that climate-related hazards are occurring with greater intensity and unpredictability, disproportionately affecting vulnerable communities with limited adaptive capacity.

Environmental degradation has further compounded these risks. Deforestation, unsustainable land use, wetland destruction, and ecosystem loss have weakened natural protective barriers that historically reduced disaster impacts. The degradation of mangroves, forests, and watersheds has increased exposure to storm surges, landslides, and flooding, while soil erosion and desertification have intensified drought conditions. These human-induced environmental changes reduce ecosystems' ability to mitigate hazards and slow recovery, thereby amplifying the impacts of disasters at the community level.

Recent disasters highlight the interconnected nature of climate change, environmental degradation, and disaster risk. The **2022 floods in Pakistan**, which affected over **30 million people**, were intensified by unprecedented monsoon rainfall combined with accelerated glacial melt linked to rising global temperatures. Similarly, the growing frequency and severity of wildfires in regions such as **Australia, Southern Europe, and North America** have been linked to prolonged heatwaves, drought conditions, and poor land management. These events illustrate how climate-driven hazards increasingly exceed the capacity of traditional disaster response systems.

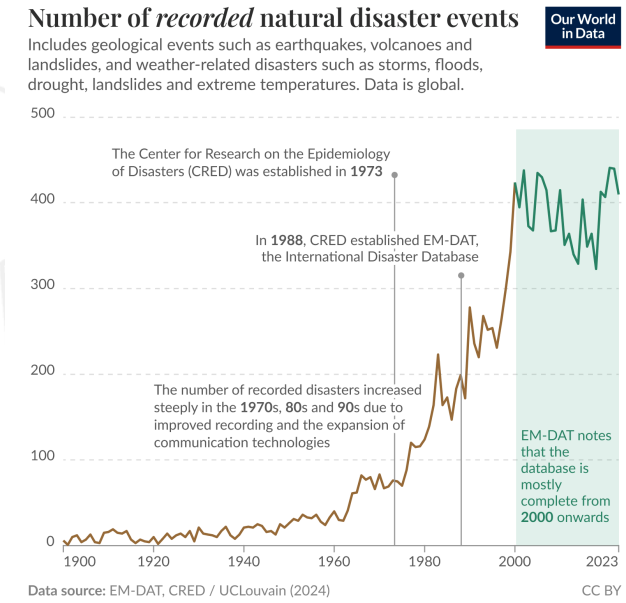
Recognizing these interconnected risks, the **Sendai Framework for Disaster Risk Reduction (2015–2030)** explicitly emphasizes the need for coherence between disaster risk reduction, climate change adaptation, and sustainable development policies. While the Sendai Framework focuses on reducing disaster losses and strengthening resilience, it aligns closely with the objectives of the **Paris Agreement**, which seeks to limit global temperature rise and enhance adaptive capacity to climate impacts. Both frameworks stress the importance of risk-informed planning, resilience-building, and the protection of vulnerable populations.

This policy coherence has encouraged closer collaboration between disaster risk reduction mechanisms and climate frameworks, promoting integrated approaches such as climate-resilient infrastructure, ecosystem-based adaptation, and risk-sensitive development planning. However, despite this alignment, implementation remains uneven, with gaps in coordination, financing, and institutional capacity at the national and local levels. Strengthening the practical integration of the Sendai Framework with climate agreements such as the **Paris Agreement** remains a critical area for international cooperation and discussion.

3.4.3. Technological Advancements and Developments

Satellites and Early warning systems: In less than a century, the technological advancements made have transformed not only our world but also substantially redefined the way nations tackle disaster risks. Hazard detection capabilities have allowed authorities to issue almost instantaneous alerts through **enhanced early warning systems,** as in the case of the Great East Japan earthquake. These systems included **seismic monitoring networks**, **meteorological forecasting tools**, and satellite-based observation systems. Simultaneously, disaster recording and data collection have reached unprecedented advancements, with almost 95% and 80% complete records of large and medium-scale disasters, respectively. And through the creation of these international databases, such as the International Disaster Database (EM-DAT). This has allowed for a comprehensive understanding of disaster trends, enabled more consistent global reporting of disaster events, resulted in more accurate risk assessments, and helped with better informed long-term planning and preparedness.

Moreover, digital communication technologies have enhanced emergency coordination. mobile phone alerts, online platforms, and real-time satellite imagery are essential tools to broadcast warnings, assess damage, and organize relief operations. At the international level, the World Meteorological Organization (WMO) plays a critical role in strengthening disaster preparedness by coordinating global meteorological, hydrological, and climate data. Through its support for multi-hazard early warning systems, WMO enhances the ability of national authorities to anticipate climate-related hazards and communicate risks effectively to vulnerable communities." The combination of all these elements has shown a great efficacy in saving lives when incorporated with robust disaster strategies with institutional coordination between all necessary parties. And so naturally, the efficacy of these systems depends on the quality of infrastructure, governance, and public awareness, factors that are still not sufficiently enhanced as the disparities in technical capacity and data accessibility among countries continue to limit the effectiveness of early warning systems in high-risk regions.



AI-Driven Systems: The exponential advancement of AI technology over the past few years has taken our world by storm. AI has emerged as a rapidly developing technology,

and experts are certain of its potential to transform disaster preparedness and response. Through AI-driven systems, an immense amount of data, both real-time and historical, can be used to predict hazard behavior, model disaster impacts, identify high-risk areas, formulate damage assessments via satellite imagery, and offer decision support tools for emergency responses, all with greater precision and speed than traditional methods.

Despite its potential, the integration of AI into disaster risk reduction remains uneven, raising critical policy questions. Issues related to data accessibility, technological inequality, transparency, ethical use, and governance continue to limit the widespread and equitable application of AI technologies. And while artificial intelligence is increasingly used in disaster risk reduction, the absence of a binding international framework governing its ethical and equitable deployment remains a significant governance gap and an issue of discussion.

3.5. Major Parties Involved

Japan: Japan plays a central role in global disaster risk reduction due to its extensive experience with high-impact natural disasters, particularly earthquakes, tsunamis, and typhoons. The 2011 Great East Japan Earthquake and Tsunami was a defining event that exposed gaps in preparedness, coordination, and risk communication under the **Hyogo Framework for Action**. Lessons from this disaster directly influenced the adoption of the **Sendai Framework,** which was endorsed in Sendai, Japan. Under Sendai, Japan has emphasized a shift from disaster response to **risk prevention**, strengthening early warning systems, enforcing strict seismic building codes, and promoting community-based preparedness. Japan has also invested heavily in advanced technologies, including earthquake early warning systems and AI-supported risk modeling, while actively sharing expertise through international cooperation and capacity-building initiatives.

Pakistan: Pakistan faces increasing disaster risk driven by climate change, environmental degradation, and rapid population growth. The **2022 floods**, which affected over 30 million people, exposed gaps in early warning dissemination, infrastructure resilience, and land-use planning. While Pakistan has a national disaster management framework and institutions such as the **National Disaster Management Authority (NDMA)**, limited financial resources and high exposure to climate hazards have constrained effective implementation. Post-flood recovery efforts emphasized humanitarian response, but long-term adaptation measures remain insufficient. Pakistan's future priorities focus on integrating disaster risk reduction with climate adaptation strategies, improving flood management infrastructure, and securing international climate and resilience financing.

The United States of America: The United States experiences a wide range of natural disasters, including wildfires, hurricanes, floods, and heatwaves, with increasing intensity linked to climate change. Domestically, disaster risk reduction is coordinated through institutions such as the **Federal Emergency Management**

Agency (FEMA), which emphasizes preparedness, mitigation, and recovery. Internationally, the United States supports disaster resilience through agencies such as **USAID** and programs focused on early warning systems, climate data sharing, and capacity-building in vulnerable countries. The U.S. also plays a significant role in advancing technological solutions, including satellite monitoring, AI-based forecasting, and disaster data platforms, positioning itself as a key contributor to innovation in global disaster risk reduction.

Bangladesh: Bangladesh is widely regarded as a leading example of **community-based disaster resilience** despite its high exposure to cyclones, flooding, and sea-level rise. Following catastrophic events such as the **1970 Bhola Cyclone**, Bangladesh invested heavily in early warning systems, cyclone shelters, and disaster preparedness education. As a result, mortality rates from cyclones have decreased dramatically over recent decades. Bangladesh aligns its national disaster management strategies closely with the **Sendai Framework**, prioritizing local-level resilience and risk-informed development. However, increasing climate pressures, urban flooding, and population density continue to pose challenges, requiring sustained international cooperation and adaptation support.

Türkiye: Türkiye's vulnerability to seismic activity has long been recognized; however, the **2023 earthquakes** revealed significant shortcomings in disaster preparedness and urban resilience. While Türkiye has modern earthquake-resistant building codes on paper, post-disaster assessments showed that **enforcement was inconsistent**, particularly in rapidly urbanizing regions. Factors such as informal construction, construction amnesties, rapid population growth, and weak oversight contributed to widespread structural failure. Although emergency response capacity has improved over time, the scale of destruction overwhelmed local institutions. In response, Türkiye has announced plans to strengthen building inspections, accelerate urban transformation projects, and retrofit existing structures. Nevertheless, challenges remain regarding governance, financing, and ensuring long-term compliance with disaster risk reduction policies.

France: France's role in disaster risk reduction is primarily exercised through international climate governance, humanitarian assistance, and multilateral cooperation. As host of the **Paris Agreement (2015)**, France has been instrumental in promoting global climate mitigation and adaptation efforts aimed at limiting temperature rise and reducing climate-related disaster risks. The Paris Agreement emphasizes strengthening adaptive capacity and resilience, which aligns closely with the objectives of the Sendai Framework. France supports disaster risk reduction through climate finance mechanisms, development assistance, and engagement in

international organizations, focusing on policy coherence between climate action, sustainable development, and disaster resilience.

3.6. Previous Attempts to Solve the Issue

Following significant technological and telecommunications advancements in the 20th century and the push to rebuild towards a better future after the Second World War, these developments compelled countries to mitigate the consequences of disasters by using these technologies to develop better threat analysis, record-keeping, threat detection, relief strategies, etc. However, it became clear that, for a valuable result, such efforts must be organized on an international scale, enabling global collaboration to standardize relief and preparedness efforts. And so, the World Conference on Disaster Risk Reduction was organized, becoming a series of UN conferences focusing on disaster risk management. The World Conference has been convened three times, with each edition to date having been hosted by Japan: in Yokohama in 1994, in Hyogo in 2005, and in Sendai in 2015.

3.6.1. Yokohama Strategy (1994)

Following many disasters in the late 20th century, such as the previously mentioned Bhola cyclone, the first World Conference on Natural Disasters was held in Yokohama, Japan, in 1994. Endorsed by the UN General Assembly, the conference identified patterns of neglect in several cases in disaster relief strategies, and thus adopted the Yokohama Strategy, specifying guidelines for preparedness, natural disaster prevention, and a plan of action. The strategy made imparative the need for disaster preparedness on all levels as "primary importance" as well as they "should be integral aspects of development policy and planning at national, regional, bilateral, multilateral and international levels" as effictivity of these measures would only be influential when all parties involved from the local community to the national and international levels are in cooperation. The conference also highlighted the need for strong international cooperation in relief and aid, as well as in technological efforts to address natural disasters.

3.6.2. Hyogo Framework (2005)

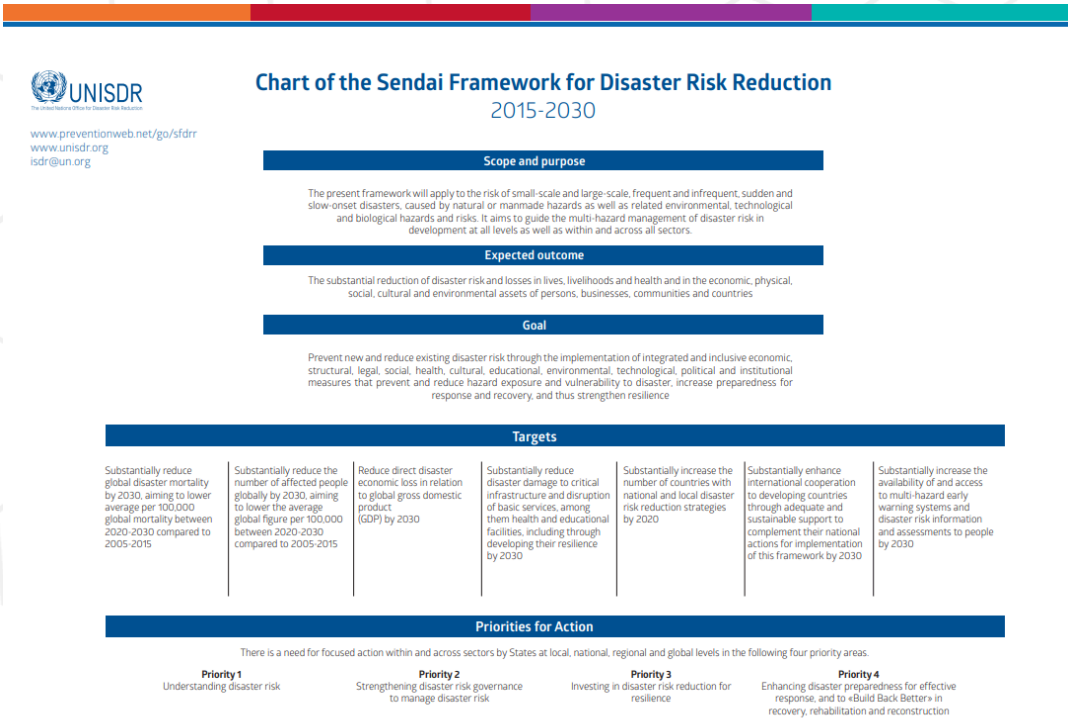
Shortly after the 2004 Indian Ocean tsunami, the devastating losses highlighted dangerous cracks in disaster preparedness strategies due to the lack of warning systems and community resilience. This created a strong push for coordinated international action through the Hyogo Framework for Action. The framework was endorsed by 168 UN member states, representing a significant shift in global disaster governance. Shortly after the 2004 Indian Ocean tsunami, the devastating losses highlighted dangerous cracks in disaster preparedness strategies due to the lack of warning systems and community resilience. This created a strong push for coordinated international action through the Hyogo Framework for Action. The framework was endorsed by 168 UN member states, representing a significant shift in global disaster governance. During the development of the framework, disaster experts,

governments, and international agencies worked to specify and emphasize the work required across sectors and actors to reduce disaster losses efficiently. The framework sets five specific priorities of action, becoming the most encompassing international accord on disaster risk reduction at the time:

1. Making disaster risk reduction a priority;
2. Improving risk information and early warning;
3. Building a culture of safety and resilience;
4. Reducing the risks in key sectors;
5. Strengthening preparedness for response.

3.6.3. Sendai Framework (2015)

The Sendai conference was the third United Nations World Conference on Disaster Risk Reduction. It was held in Sendai, one of the cities hardest hit by the Great East Japan earthquake in 2011. The conference primarily discussed the aftermath of the 2011 earthquake, Japan's response to it, the usefulness of Japan's early warning systems, and the gaps in that response. And so, the UNDRR, assisted by the UN member states, NGOs, and other stakeholders, made calls for the improvement of the Hyogo framework, prioritizing proper assessment of disaster risk potential, "**Building Back Better**" policy during recovery, reconstruction, and rehabilitation, investing in disaster risk reduction technology, and strengthening governance to manage and mitigate consequences of the disasters.



The accord was adopted in 2015 after 3 years of planning, advocating for "The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses,

communities and countries", working hand in hand with the other 2030 Agenda agreements, including **The Paris Agreement on Climate Change**, **The Addis Ababa Action Agenda on Financing for Development**, the **New Urban Agenda**, and ultimately the Sustainable Development Goals; it included an announcement of a US$4 billion fund to prepare for disasters over the next four years.

3.7. Questions to be Addressed

-How can the international community strengthen community resilience and local awareness in disaster-prone areas?

-What measures can be taken to ensure that rapid urbanization and population growth do not increase disaster vulnerability?

-What policy mechanisms are necessary to anticipate and manage compound risks?

-Should climate change adaptation strategies be more effectively integrated with disaster risk reduction?

-What steps can be taken to incentivise compliance with urban planning and building construction standards?

-Should binding regulations or frameworks be introduced for governing the use of artificial intelligence in disaster risk reduction? If so, what principles, safeguards, or cooperative mechanisms should guide its responsible and equitable use?

-How can international cooperation and data sharing be improved to strengthen global unity against disaster risk?

-What strategies can be implemented to improve coordination between national governments and local authorities in disaster-prone regions?

-What measures can be taken to ensure that post-disaster reconstruction does not recreate or worsen pre-existing vulnerabilities?

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