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For a Better Disaster Management in Türkiye's 100th Anniversary: District Disaster Management

Türkiye'nin 100. Yılında Daha İyi Bir Afet Yönetimi İçin: İlçe Afet Yönetimi

Ezgi Kovancı[1]

ABSTRACT

On our planet, various natural hazards exist, and it is anticipated that the frequency and intensity of these hazards may change in the coming years. Regardless of how disasters occur, their consequences can turn into a catastrophe for both humanity and the environment. Inequalities between countries and global injustices lead to some countries being less responsible for environmental degradation yet experiencing more severe consequences of disasters. Due to inadequate infrastructure and financial resources, these countries often experience the consequences in a more challenging way and become more vulnerable. Despite differences in vulnerability and levels of development among countries, regular disaster management can minimize the risk of disasters turning into catastrophes. In the first part of the study, the aim was to clarify the distinction between the terms "hazard," "disaster," and "catastrophe" and eliminate conceptual confusion. The study also evaluated the connection between countries' development indices and their vulnerability to disasters. In the second part, the fundamental elements of effective disaster management were outlined in subheadings. The third and final part of the study explained with examples why district disaster management plans are an effective model. Türkiye, being a country vulnerable to disasters, particularly earthquakes, is frequently exposed to natural disasters. In recent years, floods and flash floods caused by climate change have also become common disasters. In this context, this study holds a unique significance in explaining why district disaster management plans are a successful model at the local level in Türkiye, especially as the country approaches its centennial anniversary.

Keywords: District Disaster Management, Disasters, Human Development Index, Disaster Management Cycle, Disaster Management in Türkiye.

ÖZ

Gezegenimizde çeşitli doğal tehlikeler bulunmakta ve gelecek yıllarda bu tehlikelerin sıklığının ve yoğunluğunun olumsuz yönde değişebileceği öngörülmektedir. Afetlerin meydana geliş şekli ne olursa olsun, yarattığı sonuçlar insanlık ve çevre için felakete dönüşebilecek sonuçlara yol açabilmektedir. Ülkeler arasındaki eşitsizlikler ve küresel adaletsizlik, bazı ülkelerin çevresel bozulmada daha az sorumlu olmalarına karşın afetin sonuçlarını daha ağır yaşamalarına neden olmaktadır. Yetersiz altyapı ve maddi kaynaklar nedeniyle bu ülkeler sonuçları daha zorlu bir şekilde deneyimler ve daha savunmasız hale gelirler. Ülkeler arasındaki kırılganlık ve gelişmişlik düzeyi farklı olsa da düzenli bir afet yönetimi ile afetlerin felakete dönüşme riskini en aza indirgemek mümkündür. Çalışmanın amacı ilçe afet yönetiminin afet politikalarında önemini vurgulamaktır. Çalışmanın birinci bölümünde tehlike, afet ve felaket terimleri arasındaki ayrımın netleştirilmesi ve kavramsal kargaşanın ortadan kaldırılması amaçlanmış ve ülkelerin gelişim endeksleri ve afetlere olan kırılganlıkları arasındaki bağlantı değerlendirilmiştir. İkinci bölümde etkili afet yönetiminin temel unsurları alt başlıklar halinde belirtilmiştir. Çalışmanın üçüncü ve son bölümünde ise ilçe afet yönetim planlarının neden etkin bir model olduğu örneklerle açıklanmıştır. Afetlere karşı kırılgan bir ülke olan Türkiye başta deprem olmak üzere doğa kaynaklı afetlere maruz kalmaktadır. İklim değişikliği kaynaklı sel ve taşkınlar da son yıllarda sıklıkla karşılaşılan afetler haline dönüşmüştür. Bu bağlamda çalışma Cumhuriyetin 100. yılında Türkiye'de afet yönetiminde yerel düzeyde ilçe afet planlarının neden başarılı bir model olduğu açıklanması açısından özgün bir nitelik taşımaktadır.

Anahtar Kelimeler: İlçe Afet Yönetimi, Afetler, İnsani Gelişme Endeksi, Afet Yönetimi Döngüsü, Türkiye'de Afet Yönetimi.

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INTRODUCTION

An event that causes physical, economic, social, and environmental losses to a specific region and affects either the entire population or a certain segment of it is referred to as a disaster. Disasters can occur naturally or can be the result of technological or human-induced interventions. Regardless of how disasters occur, their consequences can lead to catastrophic outcomes for both humanity and the environment. Clarifying certain concepts is important to prevent confusion and ensure a clear understanding. It is essential to differentiate between risk and hazard. Risk refers to the probability of events that can affect individuals unexpectedly (from external factors), but are generally regular and frequent enough to occur within an entire human population, making them predictable and insurable. In other words, natural events encompass a risk factor, but their external impacts can be mitigated (Giddens, 1999, p. 3). Hazard refers to any process or event that directly threatens the human environment. The event itself isn't hazardous until it poses a negative threat to human lives. Disaster represents the impact of a hazard on society, often referring to events that occur within a specific geographical area. Disasters are events that are unpredictable from the perspectives of states and masses and, even if foreseen, cannot be easily overcome in a short period of time (Fidan, 2021, p. 177). The term "disaster" is used when there is significant loss of life, injuries, and other consequences resulting from the interaction between humans and natural processes. Catastrophe is the most severe outcome of disasters that significantly affect the human environment and require substantial time, money, and resource allocation for intervention and recovery. In essence, natural hazards can lead to the creation of non-natural disasters. (United Nations, 2012).

In this context, the term "natural disaster" has diverse interpretations among many scientists. For instance, environmental geographers do not widely accept the term "natural disaster." Environmental geographers interpret the world through the interactions between humans and their environment, considering trends behind environmental events such as water, air quality, energy, climate, and other hazards. This perspective somewhat contradicts the notion of environmental determinism, which assumes that geography and the occurrences of disasters are inevitable. This deterministic perspective implies that societies facing unfavourable conditions are destined to experience catastrophic outcomes as a result of disasters. However, environmental geographers emphasize that issues related to the magnitude, stages, scope, and the distribution of survivors and victims in a disaster are social matters. The main point here is not to deny that disasters have natural origins. The essential question is about the variations in how people are affected by disasters. According to Çoban, natural events turn into disasters when they interact with societal activities and relationships. Preventing destructive effects that are unequally distributed, rooted in existing inequalities, and perpetuate new inequalities requires adopting an environmentally-centred perspective that encompasses all aspects, workings, and laws of nature, rather than a human-centred approach. Achieving harmony between human settlements and nature, eliminating class inequalities, and structuring both central and local governance accordingly while enhancing their capacities are essential steps (Çoban, 2022, p. 10). This is because some segments of society are more vulnerable to the impacts of disasters, and whether a disaster is natural or not matters less than the fact that the consequences can result in catastrophic outcomes for these individuals.

Certainly, our planet is prone to various natural hazards, and their frequencies and intensities are likely to vary in the coming years. These hazards can be categorized into subgroups for better understanding. Under the category of planet-originated hazards, earthquakes and volcanoes are included as the first subheading. Hazards caused by climate crisis encompass extreme temperatures, droughts, and hail, forming the second subcategory. Meteorological dangers, such as hurricanes and tropical cyclones, are classified as the third group. The fourth and final category consists of hydrological hazards like floods and avalanches (Lukić et al, 2013, p. 148). The information about the formation and types of disasters actually leads us to the realization that some commonly accepted concepts of natural disasters can be exacerbated by human interventions. For instance, in recent years, the climate crisis resulting from global warming has triggered these disasters, transforming them from being purely natural to

becoming disasters exacerbated by human activities. Earthquakes, hurricanes, volcanic eruptions, floods, droughts, and other natural events have occurred since ancient times and will continue to do so. Throughout human history, societies have adapted to these disasters and learned to coexist with them. However, at this juncture, it is more prudent to take preventive measures before facing the devastating dimensions of disasters. The rise of the climate crisis due to anthropogenic influences serves as an example of how human actions can contribute to the intensification of disasters that were originally considered natural. While natural disasters are inevitable, proactive measures are crucial to mitigating their impacts. Adopting preventative policies in environmental regulations, rather than just reactive ones, is paramount. In essence, prevention is always superior to treatment, and this approach is vital not only for safeguarding human lives and well-being but also for ensuring the sustainability of the environment.

The significance of disasters is a topic that can be widely debated. Throughout recorded history and even longer, humanity has had to endure various calamities. While it may seem that disasters do not allow us the luxury of preparing beforehand, scientific studies indicate the opposite. Since disasters cause damage to regional and national economies, they also have adverse effects on individuals from social, economic, and psychological perspectives. Although the occurrence of such significant natural events cannot be prevented, it is possible to mitigate the damages caused by these natural events. The damage caused by two separate earthquakes of the same magnitude in two different countries can vary greatly. In fact, this difference can even be observed from region to region within the same country (Tanyaş et al., 2013, p. 40). Some regions are more vulnerable to certain types of disasters, making the statement that certain geographies are more fragile in terms of specific types of disasters accurate. For instance, the United States is among the areas most affected by hurricanes. Many hurricanes occur during the early spring and late autumn. Similarly, while not geographically specific, forest fires frequently emerge in the middle of summer and early fall, when the land is dry. (Salt Lake Community College, 2020). Balancing the need for swift response and protection of human rights is crucial in disaster management. It involves not only coordinating response efforts but also promoting education and awareness, so communities are prepared to handle potential crises. This approach emphasizes proactive measures over reactive ones, minimizing the impacts of disasters and maintaining the dignity and safety of affected populations.

Türkiye is indeed prone to various types of disasters due to its geographical location and geological characteristics. According to the "Global Risk Management Index" prepared for humanitarian crises and disasters, Türkiye is categorized as a "high-risk" country among nations facing these challenges. In 2019, Türkiye ranked 53rd out of 191 countries with an index score of 5.0[2]. Based on the subcomponent scores for danger and exposure in the index, Türkiye is among the top 10 most at-risk countries (World Economic Forum, 2019, s. 36). In 2023, Türkiye ranks 43rd with an index score of 4.9 and still be categorized as a "high-risk" country (European Union, 2023, p. 14). Also, the data obtained from World Meteorological Organization (WMO) in 2021 shows that Türkiye experienced 71 reported disasters during that year. This data underscores the occurrence of a wide range of disasters in Türkiye which may encompass events like earthquakes, floods, wildfires, and various other natural and weather-related incidents (World Meteorological Organization, 2021, s. 87). Due to its geographical location, Türkiye is situated within active seismic fault lines and frequently experiences large-scale earthquakes. Also, the country has witnessed numerous earthquakes with magnitudes of 7 or higher since the 1500s (Turkish Red Crescent, 2023, p. 4). Particularly in the 20th century, these earthquakes have resulted in significant loss of life and property. Notably, on February 6, 2023, two major earthquakes with magnitudes of 7.7 and 7.6 occurred at different times. Given the extent of the

[2] The INFORM index is a scale used to define risk levels and assess how prepared or vulnerable different regions or countries are to disasters or emergencies. This index is created through a complex calculation that takes into account various parameters, and the result indicates the level of disaster risk for a specific region or country. The index score is defined as follows: 0 to 1.9 indicates very low risk, 2 to 3.4 indicates low risk, 3.5 to 4.9 indicates moderate risk, 5 to 6.4 indicates high risk, and 6.5 to 10 indicates very high risk (EU, 2017, s. 54).

damage and losses incurred during these events, they were considered the most destructive earthquake disaster in recent years and were referred to as the "disaster of the century".

1. Scope and Methodology

The study focuses on disaster management in Türkiye, a country that is susceptible to disasters, emphasizing the importance of local-level disaster planning. Therefore, the use of the document analysis method in this research provides an insightful and straightforward benefit (Yıldırım & Şimşek, 2008, p. 188). In this research, scientific reports on the significance of local-level disaster management in Türkiye, disaster management plans of successful countries at the district level, newspaper articles, and publications were also reviewed. Following these review processes, the practices of successful countries were presented with examples. Within the scope of the research, data has been provided to demonstrate how countries with vulnerable structures to disasters have reduced disaster risks through the implementation of district-level disaster management plans. It is a known fact that Türkiye is prone to earthquakes and is particularly vulnerable to disaster risks associated with the climate crisis in recent years. In this context, the aim of the study is to elucidate how successful disaster management policies at the local level can be established.

2. Findings

Following the conducted research, a correlation between the Human Development Index and disasters has been identified. The essential elements required for effective disaster management have been listed in the study, and the effectiveness of district-level disaster management has been illustrated with examples. The importance of implementing district-level disaster management in Türkiye's 100th year has been discussed with findings. In the second section of the study, the development indices of countries and their vulnerability to disasters were assessed. The third section outlines the key elements of effective disaster management under subheadings. In the final section of the study, the reasons why local disaster management plans should serve as an effective model are explained with examples, and it is presented as a model that should be implemented in Türkiye as a disaster-prone country in its centenary.

2.1. Linkages Between Human Development and Disasters

It is evident that the term "natural disaster" has been inaccurately ingrained in the language terminology. Changes in human behaviour, the shift away from natural environments, a preference for urban areas over forests and wetlands, along with the exacerbating factor of the climate crisis, have transformed what were once considered disasters into catastrophic events. Throughout history and across different eras, humanity has faced various forms of disasters, resulting in significant material and spiritual losses. However, in the current century, there has been a noticeable increase in the frequency and magnitude of these disasters. Figure 1 indicates the number of recorded natural disaster events from 1990 to 2022. The number of global reported natural disaster events in any given year. This figure includes those from drought, floods, extreme weather, extreme temperature, landslides, dry mass movements, wildfires, volcanic activity and earthquakes. A rising trend in the frequency of occurrences is also illustrated in Figure 1. Demonstrably, the data evinces a consistent number of recorded seismic events, which are the deadliest in terms of loss of life. However, there is a notable increase in the reported incidents of storms and floods. Across various regions, the risks associated with weather-related hazards are mounting, leading to an elevated risk of economic losses (although a lower number of fatalities have been recorded). The escalating number and severity of floods, droughts, landslides, and heatwaves can significantly impact urban systems and resilience strategies. Furthermore, depending on the geographical location, climate change is anticipated to heighten precipitation frequency in numerous areas. This will lead to changes in flood patterns and contribute to the increasing trend of coastal high-water levels.

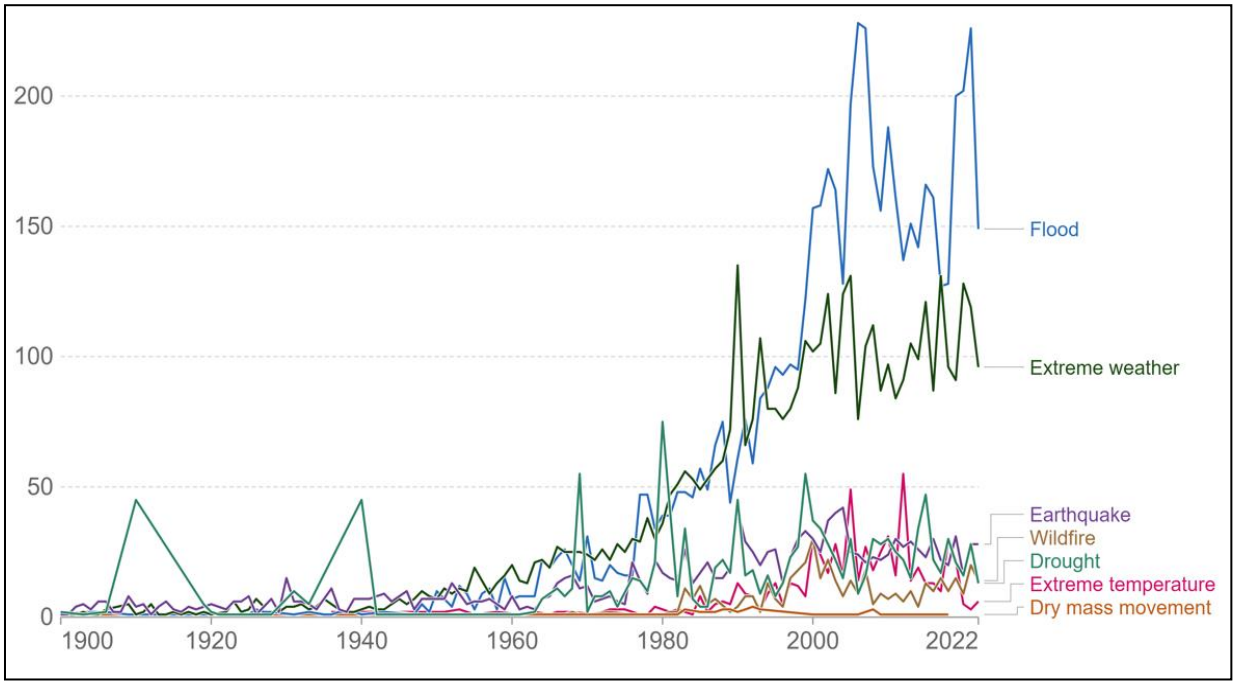

Figure 1. Number of Recorded Natural Events 1900-2022 (EM-DAT, CRED/ Universite catholique de Louvain, 2022, Access https://ourworldindata.org/natural-disasters).

Those most severely affected by catastrophic events are frequently the least developed countries. As defined by the United Nations, a Least Developed Country (LDC) is a nation that exhibits the lowest indicators of socioeconomic development and holds low scores on the Human Development Index (HDI). These countries also share specific characteristics. One of these characteristics is being home to populations residing in regions with higher vulnerability to hazards triggered by geological, weather conditions, and climate change. For instance, small island states are among the most fragile nations in this regard. The countries face the risk of submergence due to the potential adverse consequences of the climate crisis, including rising sea levels. The second characteristic involves lacking the resources to provide a secure living infrastructure for their populations. In countries with limited social and economic assets and a weak social safety net, citizens often live at standards similar to those in LDCs on the HDI. These circumstances further exacerbate the impacts of disasters on vulnerable communities. Essentially, the amalgamation of geographical vulnerability, resource scarcity, and fragile infrastructure exacerbates the challenges faced by the least developed countries during disasters. Dealing with these issues necessitates not only disaster management strategies but also long-term development initiatives and international cooperation aimed at fostering more resilient and equitable societies. As can be seen in Figure 2, the United Nations' economic and environmental vulnerability index for the least developed countries is categorized using eight indicators that encompass the aforementioned characteristics. Four indicators pertain to economic vulnerability, while the other four relate to environmental vulnerability. All eight indicators have equal weight and proportion in the overall index. Countries with low economic and environmental vulnerability indexes also rank lower in the Human Development Index. An important component in this context is the indicator termed "victims of disasters" which falls under the environmental vulnerability sub-category. This indicator measures the proportion of the population designated as disaster victims, including those who have lost their lives or have been most adversely affected by disasters. Notably, during events like earthquakes, floods, storms, or extreme temperatures, individuals can lose their lives. Yet, even in the aftermath of disasters, those who are in need of urgent food, clean drinking water, suitable shelter, and medical assistance but cannot access these resources are also susceptible to losing their lives. In light of the above, the term "victims of natural disasters" has been redefined for alignment with United Nations terminology. The concept has been renamed as "victims of disasters"

encompassing the interaction of three components: exposure to disasters, vulnerability, and insufficient capacity building conditions. This terminology shift aims to accurately represent the multifaceted circumstances that result in such situations. (United Nations, 2021, p. 73).

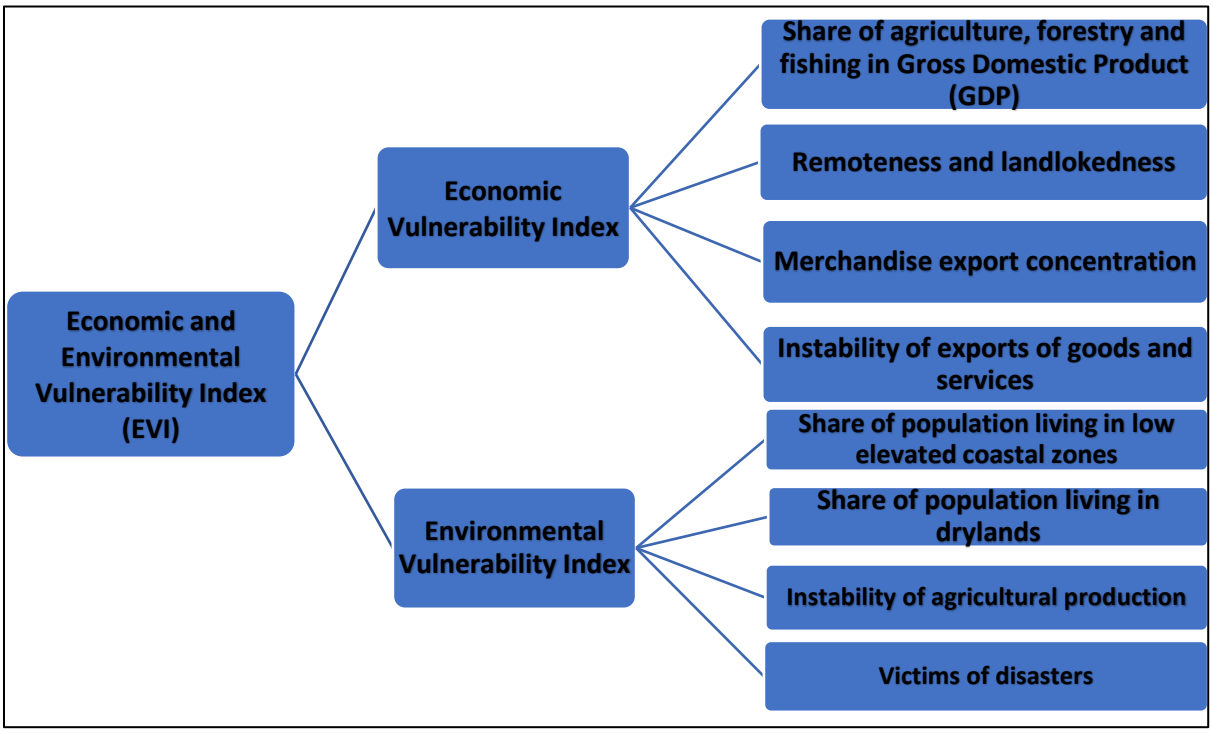

Figure 2. Composition of Economic and Environmental Vulnerability Index (United Nations, 2021, p. 73).

A country's Human Development Index (HDI) value is determined by scoring various indicators that encompass average life expectancy, literacy rates, rural access to electricity, per capita GDP (Gross Domestic Product), exports and imports, and homicide rates, among others. Based on these data, Figures 3 and 4 depict the top 10 and bottom 10 countries with the highest and lowest HDI values as of the years 2021/2022. (United Nations Development Programme, 2023, p. 272).

The ironic aspect here is that according to the report, hardly any country has been able to achieve a high level of human development without causing significant environmental harm. The most critical issue is to make decisions that serve human well-being while staying within the limits of the planet's boundaries. Unfortunately, current practices often reflect the opposite. For instance, even though Norway ranks second in the Human Development Index (HDI) among countries with the highest HDI, it falls to the 16th place in the Planetary Pressures-Adjusted Human Development Index (PHDI)[3] due to its dependence on oil production. Similarly, Australia holds the fifth position in the HDI list but drops to the 80th place in the PHDI list due to coal mining. These instances highlight that environmental-centred indicators are not considered when calculating Human Development Index values. However, the consequences of environmentally degrading practices are borne by citizens of countries ranking at the lowest levels in the Human Development Index. This disconnect underscores the need to shift towards a more sustainable and equitable approach that considers both human development and environmental preservation. It's imperative to acknowledge that neglecting environmental factors in

[3] In the PHDI formulation, the index of planetary pressures is used as an adjustment factor. The adjustment factor is calculated as (1-index of planetary pressures), which ranges between 0 and 1. This factor is then multiplied by the original HDI, resulting in the PHDI. The idea of this concept is to recognize that a society's development cannot be considered in isolation from its impact on the environment and future generations. By factoring in the pressures on the planet, the PHDI aims to provide a more comprehensive and sustainable measure of human development (United Nations Development Programme, 2020).

development decisions can lead to detrimental impacts on both the planet and vulnerable populations. The Human Development Report (HDR) which published in 2020 highlights several alarming trends, illustrating the interplay between human actions and their environmental consequences. One significant concern is the continued subsidization of fossil fuels by various countries, despite the detrimental effects on the climate. Well before reaching that point, there exists a risk of pushing the Earth's system towards a hothouse state, resembling historical instances marked by oceanic anoxic events and mass extinctions (The Human Development Report, 2020, p. 102).

The report references data from the International Monetary Fund (IMF), indicating that global carbon emissions in 2020 could have been significantly lower by 28% if these subsidies had been completely eliminated in 2015. Additionally, the report suggests that air pollution-related deaths would have been reduced by 46% under such conditions. The HDR 2020 emphasizes the potential of afforestation and improved forestry practices to contribute substantially to the efforts required by humanity before 2030 to limit global warming to a maximum of 2 °C (International Monetary Fund, 2019, pp. 5-6). This serves as a poignant example of the interconnectedness between human well-being and environmental health. The authors of the report underscore that the impacts of environmental change disproportionately affect the most vulnerable, particularly those living in poverty. Paradoxically, these individuals have contributed the least to the causes of such change. The HDR stresses the importance of addressing inequality both within and among countries. Genuine human development entails enhancing the lives of disadvantaged and marginalized populations, empowering them to influence and participate in future developments.

In essence, the Human Development Report illuminates the intricate interplay between human advancement, environmental sustainability, and social equity. It advocates for holistic endeavours to mitigate climate change, diminish disparities, and secure an improved quality of life for everyone, all the while acknowledging the crucial interdependencies between individuals and the planet.

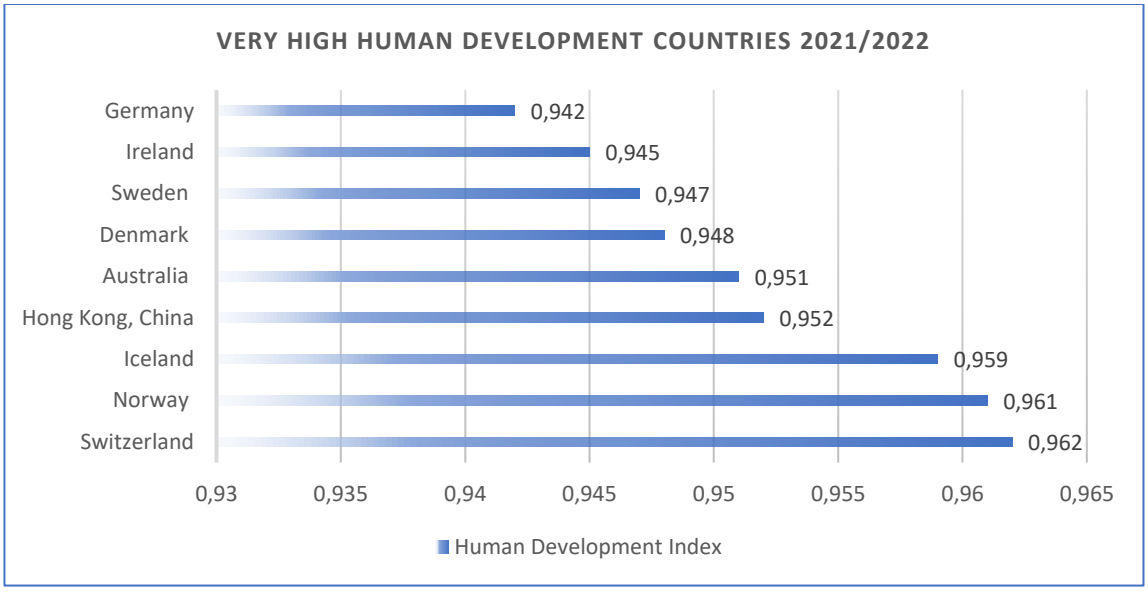

Figure 3. Very High Human Development Countries 2021/2022 (United Nations Development Programme, 2023).

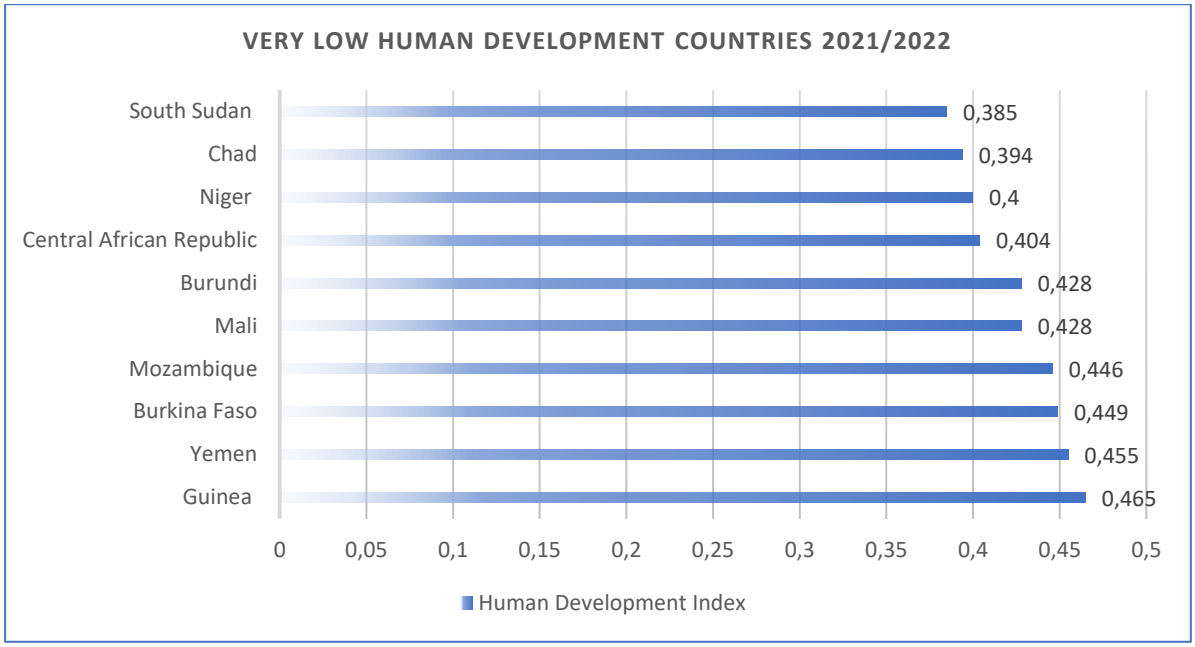

Figure 4. Very Low Human Development Countries 2021/2022 (United Nations Development Programme, 2023).

When examined at the 10 countries listed in Figure 4, it can be observed that many of these countries are highly vulnerable to disasters caused by the climate crisis. If these countries were assessed, can be seen that they are quite fragile in the face of catastrophes stemming from the climate crisis. It is indeed concerning to hear about the increasing severity and frequency of cyclones in Mozambique. Events like Tropical Cyclone Idai and Tropical Cyclone Kenneth in 2019 had devastating impacts on the country, resulting in significant loss of life (603 people), displacement of people, and widespread damage. Tropical Cyclone Idai was one of the strongest cyclones to ever make landfall in Mozambique. It caused extensive flooding and destruction, particularly in the city of Beira. The cyclone's heavy rainfall led to catastrophic flooding in many areas, affecting homes, infrastructure, and livelihoods. Tropical Cyclone Kenneth followed shortly after, further exacerbating the already dire situation. It was also a powerful storm that brought heavy rainfall and flooding to parts of Mozambique, including the northern regions (United Nations International Children's Emergency Fund, 2019). Another example can be given from Chad which is listed in the list of very low human development countries. Starting from the mid-20th century, Chad has encountered a rise in temperatures coupled with a reduction in rainfall. Over the last fifty years, roughly 90% of the nation's largest lake, Lake Chad, has disappeared due to a blend of droughts and increased water extraction for irrigation needs. Climate studies predict a further trend toward elevated heat and aridity in Chad over the course of the 21st century, resulting in reduced agricultural output, degraded pasturelands, and an increasingly difficult life for those who depend on Lake Chad for their livelihoods (United Nations High Commissioner for Refugees, 2017). In March 2022, around 700 thousand people were affected by Tropical Cyclone Gombe in Mozambique significantly (US Agency for International Development, 2022). As can be seen in Figure 5, Niger and Burkina Faso, which are among the 10 countries with the lowest development index, also appeared among the top 10 countries with the highest number of disasters in 2022. The other countries listed in the figure are also situated in the category of least developed or developing nations.

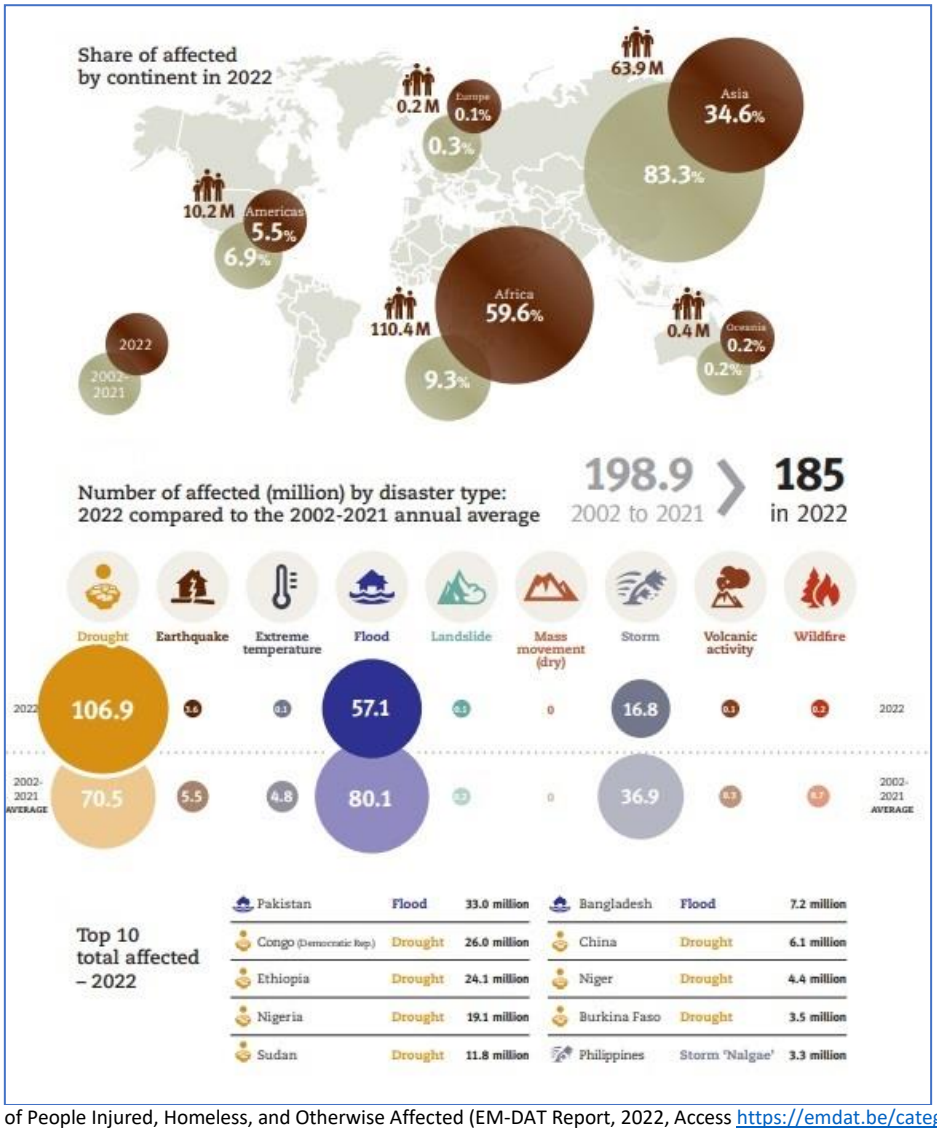

Figure 5. Sum of People Injured, Homeless, and Otherwise Affected (EM-DAT Report, 2022, Access https://emdat.be/categories/adsr/).

The HDI is a comprehensive indicator system that was designed to shift the focus of development economics away from solely measuring national income and towards policies that prioritize the well-being of individuals. Its main purpose is to underscore the idea that the development of a country should be assessed based on its people and their capabilities, rather than relying solely on measures of economic growth. The HDI is a yearly publication featured in the Human Development Report by the United Nations Development Programme (UNDP). Initiated in 1990, the HDI draws inspiration from the concepts of capabilities and functioning developed by economist Amartya Sen. This perspective highlights that a country's progress should be evaluated primarily based on the well-being and abilities of its citizens, rather than being exclusively focused on economic performance. The HDI provides a more holistic view of development by considering factors such as health, education, and income, thus offering a broader understanding of a nation's overall advancement (United Nations Development Programme, 2016).

In the Human Development Index last published in 2022, Türkiye ranks 48th among 191 countries in HDI. Between the years 1990-2021, progress has been made human development indexes in Türkiye. However, when we consider the people who are "victims of disasters" as an environmental vulnerability index category, after the earthquakes in 2023; more than 50 thousand deaths and 1.5 million homeless people are stated in Türkiye (United Nations, 2023). We see that the environmental

sensitivity index and economic development follow an opposite course in the human development index. In this case, The Human Development Index has faced several criticisms, including:

1. **Ecological Considerations**: The HDI has been criticized for not incorporating ecological or environmental factors in its calculation. It focuses primarily on human well-being indicators such as health, education, and income, while neglecting the ecological impact and sustainability of a country's development.
2. **National Comparison Focus**: Critics argue that the HDI places too much emphasis on national comparisons, which may not accurately reflect the well-being of all individuals within a country. It does not account for disparities and inequalities within nations.
3. **Annual Relative Ranking**: The HDI's annual relative ranking approach can make it difficult to compare a country's progress over time, as its ranking depends on the performance of other countries in the same year.
4. **Data Quality and Formula Changes**: The quality of the underlying data and formula changes used in the HDI calculation have been a subject of criticism. Changes in methodologies or data sources can affect the comparability of HDI scores across different years.

In response to these criticisms, the Human Development Report Office (HDRO) recognized the need for improvement and undertook systematic revisions to the HDI calculation methods (United Nations Development Programme, 2023). The HDRO also acknowledges that a comprehensive understanding of a country's human development requires analysis of additional indicators and information presented in the statistical annex of the report. From an environmental justice perspective, there is a call for integrating sustainability concerns into the HDI. Currently, the index does not account for the environmental impact and sustainability of a country's development activities. Some activities that contribute to national income, and thus the HDI, may come at the cost of depleting natural resources or causing environmental harm. The question of whether human development is truly sustainable needs to be addressed or not. Some countries may appear to have made impressive progress in human development indicators, but if this progress is achieved at the expense of degrading the environment or depleting natural resources, it raises concerns about the long-term viability of such development. Incorporating sustainability considerations into the HDI would provide a more complete and balanced assessment of a country's overall progress and well-being.

2.2. Dimensions of Effective Disaster Management

When the definition and scope of disaster management are considered, it is evident that it constitutes a dynamic management process characterized by continuity (Önsüz & Atalay, 2015, p. 3). When all stages of disaster management plans evaluated, it can be argued that the concept of "disaster management" takes shape according to the scale and type of the disaster phenomenon. It is natural for the management model to exhibit differences between a small-scale disaster event and a disaster event that has regional or national impacts (Banica et al., 2020, p. 224). It is evident that inequalities among countries result in some nations bearing a more severe burden of the consequences, despite being less responsible for environmental degradation. Due to inadequate infrastructure and financial resources, these countries endure the repercussions more harshly and become more vulnerable. What truly matters is the formulation of preventive policies aimed at averting the dire consequences of disasters even if their occurrence cannot be completely prevented. For instance, the crisis of climate change stems from a capitalist system that exploits nature and the air we breathe for its own gains. This same system devastates the environment and humanity in developing or underdeveloped nations as well. The consequences of the crisis caused by the affluent sector are being paid for by the citizens of impoverished countries through disastrous bills. For instance, according to the "Production Gap Report" published in 2021, countries producing oil, gas, and coal aim not to decrease their production

and strive to maintain the temperature rise at 1.5-2 °C by 2030 (45% more than consistent with limiting warming to 2°C respectively), but rather intend to double their production (Stockholm Environment Institute et al, 2021, p. 3). It is obvious that the failure to implement necessary preventive measures triggers the increased risk of climate-related disasters.

Disasters encompass natural events such as earthquakes, floods, landslides, avalanches, droughts, storms, hailstorms, tornadoes, and meteor impacts, which can turn into catastrophes, if necessary, precautions are not taken. Human-induced disasters, on the other hand, arise from political factors and include wars, internal conflicts, terrorist acts, major fires, large-scale migrations, as well as technological incidents like industrial accidents and their resulting consequences. Similar to other disasters, human-induced disasters lead to loss of life, illness, social, economic, and environmental damages. In this case disaster management is a multidisciplinary and multi-stakeholder dynamic process that encompasses the organization and coordination of resources and activities needed for damage reduction and preparedness before a disaster, response during a disaster, and recovery and rehabilitation after a disaster, all with the aim of mitigating the impacts of disasters. Two fundamental approaches exist within disaster management: the "traditional disaster management" approach that focuses solely on response actions during a disaster, and the "modern disaster management" approach that encompasses all processes before, during, and after a disaster (Özel, 2011, p. 15). According to the traditional approach, disaster management is seen as a process that involves activities such as rescue, first aid, recovery, and reconstruction, which commence after a disaster event has occurred. The effectiveness of disaster management is evaluated based on the success of these activities within this process. The preferred implementation of the disaster management cycle can be observed in Figure 6.

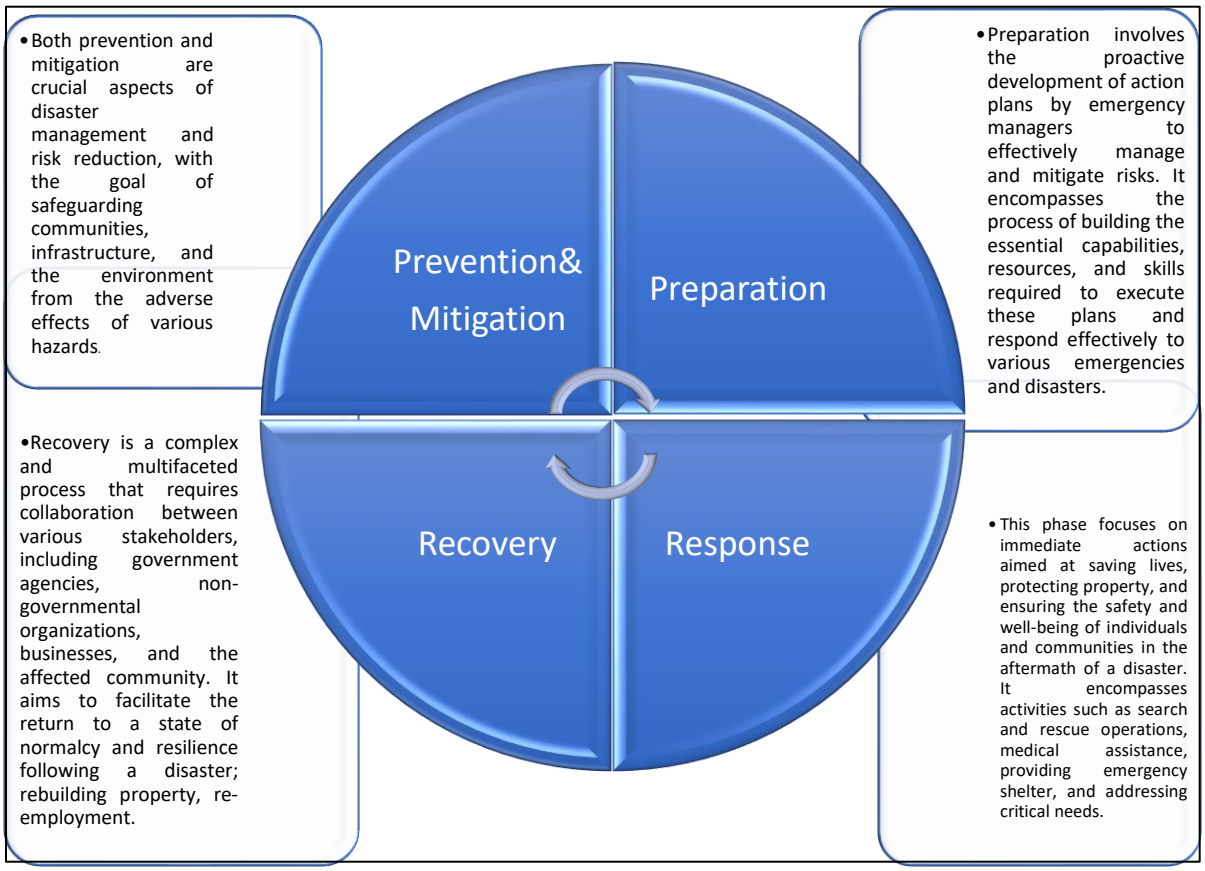

Figure 6. Disaster Management Cycle (Tulane University, 2021).

2.2.1. Prevention and Mitigation

Efforts to mitigate and prevent disasters aim to reduce the potential damage and suffering they can cause. While disaster management cannot completely prevent disasters, it can prevent them from becoming more complex by addressing causal factors and manageable risks that might otherwise be neglected. Mitigation refers specifically to actions that can lessen the severity of an event's impact. Investing in measures that limit hazards can significantly alleviate the burden of disasters. Disaster management experts employ a variety of strategies to safeguard vulnerable communities and mitigate hazards, which include: raising awareness about potential hazards and their mitigation methods, educating the public on appropriate preparations for various types of disasters, establishing and enhancing prediction and warning systems, managing hazards and risks to minimize a community's susceptibility to disasters, encouraging community members to acquire suitable insurance for safeguarding their property and possessions (Tulane University, 2021).

Naturally, the specific measures taken can differ depending on the type of disaster. For example, constructing educational institutions, medical facilities, and residential areas in flood-prone regions might heighten vulnerability to disasters. Disaster management sheds light on these risks and proposes alternative land use strategies. Instead of erecting homes in floodplains, community planners could designate these areas for outdoor recreation, wildlife conservation, or hiking trails. Encouraging people to avoid these zones during flood seasons can reduce vulnerability. These actions collectively enhance the resilience of residents and properties. Approaches for designing earthquake-resistant bridges can also be addressed.

2.2.2. Preparation

Global policy for reducing disaster risk and building resilience is strengthened through the Sendai Framework for Disaster Risk Reduction 2015-2030, also known as the Sendai Framework. It emphasizes the need for states and other relevant stakeholders to manage disaster risk rather than merely responding to disasters. The aim of the Sendai Framework is to significantly reduce the disaster risk and losses of individuals, businesses, communities, and countries in their lives, livelihoods, health, and economic, physical, social, cultural, and environmental assets. Building upon its predecessor, the Hyogo Framework for Action (HFA) 2005-2015, the Sendai Framework continues to prioritize disaster preparedness for effective response as part of Priority IV[4]. With the adoption of the Sendai Framework, actors at all levels clearly recognize the need for enhanced, risk-informed preparedness to provide effective, efficient, and timely responses to both small- and large-scale disasters associated with all types of hazards. HFA (2005-2015) called for strengthening preparedness for response at all levels. The significant progress made in disaster preparedness during the period of 2005-2015 is acknowledged to have contributed to reducing loss of life, increasing early warning, public awareness, and response capacities, and enhancing understanding of roles and responsibilities among actors, all without turning progress into catastrophe (United Nations Office for Disaster Risk Reduction, 2015).

In the 4th priority of the Sendai Framework, the term "learned lessons from past disasters" has been emphasized, this actually refers to harnessing the traditional methods that indigenous peoples and local communities have used for generations to prepare for and respond to disasters. People have been

[4] Priority IV of Sendai Framework refers enhancing disaster preparedness for effective response and "Building Back Better" in effective interventions and recovery efforts necessitates increased disaster preparedness. The steady growth of disaster risk, including the heightened exposure of people and assets, learned lessons from past disasters, underscores the need to further strengthen preparedness for response, take anticipatory actions through early event prediction, and integrate disaster risk reduction into preparedness for response. Capacity must be in place at all levels to ensure effective intervention and recovery. Empowering women and persons with disabilities to lead and promote inclusive and universally accessible approaches in interventions, recovery, rehabilitation, and reconstruction, in line with gender equality, is crucial. Disasters have shown that the phase of recovery, rehabilitation, and reconstruction that should be prepared before a disaster, including the integration of disaster risk reduction into development measures and enhancing the resilience of nations and communities to disasters, presents a critical opportunity for "Building Back Better."

employing these methods and passing them down from one generation to the next. Risk reduction practices were grounded in the knowledge and experience of the local context long before the existence of technology-based early warning systems, disaster risk reduction strategies, and operational procedures for response. Science, modernization, and enhanced information systems have enabled researchers and practitioners to develop tools for in-depth assessment of various hazards and vulnerabilities. Policymakers now possess advanced information to mitigate hazards and reduce disaster risk. However, there has been a divergence between scientific and traditional knowledge. Additionally, as new layers of understanding are added, it is essential to remember that traditional knowledge is continuously evolving. In many cases, without adaptation to changing social, economic, and environmental contexts, its relevance can diminish. To remain effective, traditional knowledge must be dynamic and compatible with technology.

2.2.3. Response

Preparedness measures taken immediately before, during, or shortly after a disaster to save lives, reduce health impacts, ensure public safety, and meet the basic livelihood needs of affected individuals are referred to as disaster response. Disaster response predominantly focuses on urgent and short-term needs and is sometimes referred to as disaster relief (United Nations Office for Disaster Risk Reduction, 2023). Effective, efficient, and timely response is grounded in disaster risk-informed preparedness measures, including the enhancement of the response capacities of individuals, communities, organizations, countries, and the international community.

The institutional components of response typically encompass the provision of emergency services as well as the involvement of the public and private sectors, community sectors, and voluntary participation. "Emergency Services" constitute a critical group of expert organizations with specialized responsibilities in serving and protecting people and property during emergency and disaster situations. This group includes civil protection authorities, police, and firefighting organizations, among others. The distinction between the response stage and the subsequent recovery stage is not always clear-cut. Some response actions, such as providing temporary shelter and water supply, may extend until the rescue phase. Intervention measures are typically actions taken immediately before and after the impact of a disaster. These measures primarily focus on saving lives, protecting property, and dealing with sudden disruptions, damages, and other effects caused by the disaster. Typical measures include, implementing plans; activating the system for disaster response; search and rescue; providing emergency food, shelter, medical aid, etc.; assessment and evaluation; and evacuation (Asian Development Bank, 2008, p. 55).

Emergency measures are necessary to cope with the immediate effects of a disaster, and a government may have declared a state of emergency or disaster. It may be noteworthy to mention that sometimes, all activities related to the subsequent phases of a disaster (including relief, rehabilitation, restoration, and reconstruction measures) constitute a response. However, for the purpose of a user manual, it is more appropriate and practical to distinguish response from rescue.

2.2.4. Recovery

Commonly referred to simply as "recovery", the process of "recovery" and "reconstruction" (R&R) is a fundamental component of disaster management. It is defined as the restoration and, when appropriate, improvement of facilities, livelihoods, and living conditions of communities affected by disasters, including efforts to reduce disaster risk factors. There are varying perspectives on the starting point of recovery, with different opinions about how long it will last, from the beginning of the disaster to the period after emergency aid is completed. According to United Nations International Strategy for Disaster Reduction (UNISDR), "recovery begins as soon as the emergency phase ends and should be based on pre-existing strategies and policies that facilitate clear institutional responsibilities for

recovery action and enable public participation" (United Nations International Strategy for Disaster Reduction, 2009, p. 23). It is important to view improvement not as a separate stage of the disaster management cycle, but rather as a continuum. As shown in Figure 7, recovery often begins in the initial days of emergency aid efforts and continues downwards in the form of development programs; ensuring the commitment of governments and international partners to sustain recovery efforts beyond the aid phase early on is crucial to providing a sustainable path towards disaster resilience and development. Recovery and reconstruction also offer an opportunity to address pre-existing issues, avoid repetitions, or mitigate their impacts. After a disaster, it is necessary to mobilize timely and efficient technical and financial resources to support the concept of "Building Back Better" (United Nations World Conference on Disaster Risk Reduction, 2015, p. 2). National and local governments play a crucial role in ensuring the effective planning, management, coordination, and implementation of these recovery efforts, as well as taking measures to reduce disaster risks.

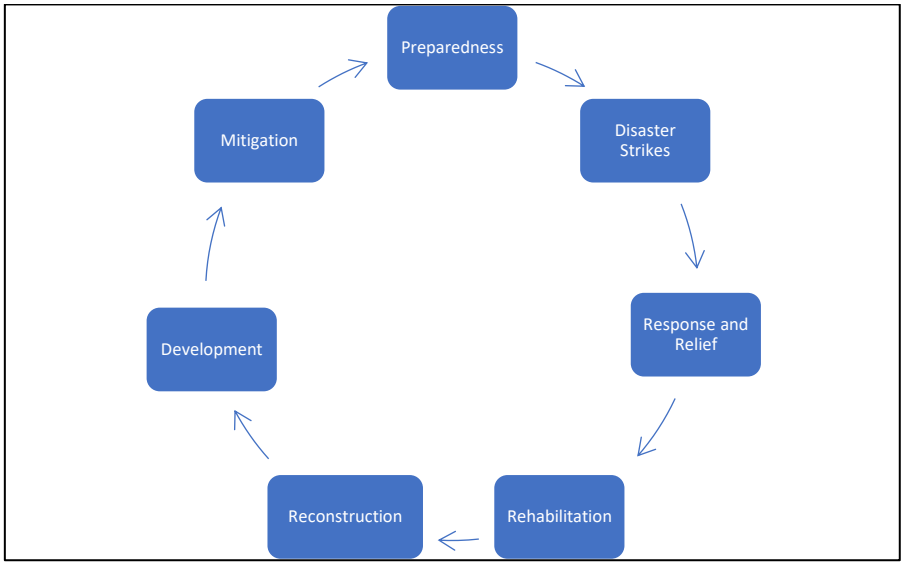

Figure 7. Recovery Continuum in Disaster Management Cycle (The figure has been created by the author)

3. District Disaster Management as an Effective Model

Developing disaster management plans at the local level which is named "District Disaster Management Plan" is the right approach. While national policies and plans are crucial, during a disaster, it's often the local communities and authorities that are at the forefront of the response. These planning processes should include measures that both reduce disaster risks and facilitate an effective response when disasters occur. Additionally, there are ways to ensure that these plans and policies uphold the human rights of the affected communities (Ferris, 2012). Creating local-level disaster plans that advocate for a rights-based approach to disaster management is essential. Raising awareness about rights among communities and political leaders is a vital aspect. In times of disaster, there's a requirement for locally tailored disaster plans that prioritize the protection of people's fundamental human rights.

International guidelines on safeguarding individuals during natural disasters outline four categories of rights that should be upheld when preparing for, responding to, or recovering from a disaster. In a way, these categories serve as a type of checklist that can be employed when assessing disaster management plans. These categories outline systematically on Inter-Agency Standing Committee (IASC) guidelines as groups. First of all, "Protection of life; security and physical integrity of the person; and family ties" this covers human right based approach and district disaster management together.

The mentioned points outline key aspects of community and district-based disaster risk management planning:

(a) Community/village-based disaster risk management planning, which also encompasses district-level planning.

(b) Conducting community awareness programs to educate people about the nature of risks and how to safeguard themselves.

(c) Incorporating disaster awareness into educational curricula.

(d) Providing first aid training to all humanitarian responders.

(e) Enforcing disaster preparedness and mitigation measures, such as maintaining riverbeds in flood-prone areas, conducting participatory community vulnerability assessments.

(f) Distributing protective measures to communities and households, including maps with evacuation routes and whistles to alert others of impending dangers.

This category of rights focuses on life-saving actions, including evacuations and shielding against the aftermath of natural disasters. While relocating people from perilous zones, their rights must be respected. Steps should be taken to prevent families from being separated and to ensure the safety of individuals residing in temporary shelters, with families, or within communities. Additionally, protection against violence, particularly gender-based violence which tends to rise after disasters, is crucial (Inter-Agency Standing Committee, 2011, pp. 15-27).

Secondly, protection of rights related to the "Provision of food; health; shelter; and education", the humanitarian goods and services offered to affected individuals should meet certain standards of adequacy. The adequacy of these provisions is determined by four key factors (Inter-Agency Standing Committee, 2011, pp. 29-38):

(a) Availability: This means that the goods and services are provided to the affected population in sufficient quantities and of satisfactory quality.

(b) Accessibility: This entails that the goods and services are accessible to all individuals based on their needs, without any form of discrimination. They must be within safe reach and physically attainable by everyone, including those with specific requirements. Furthermore, beneficiaries should be aware of their availability.

(c) Acceptability: Goods and services must be culturally respectful to individuals, minorities, communities, and peoples. They should also be sensitive to gender and age considerations.

(d) Adaptability: These provisions must be flexible enough to adjust to changing needs throughout various phases, such as emergency relief, recovery, and for internally displaced persons, return, local integration, or relocation to other areas within the country.

A third set of district management plans cover "Protection of rights related to housing; land and property; livelihoods and secondary and higher education". This section is concerned with housing, land, and property rights, restoration of livelihoods, and access to tertiary and higher education. Land and property-related issues are contentious in many parts of the world, and women (especially widows) and orphaned children, as well as disadvantaged individuals, often require special assistance to regain their housing or land titles after a disaster. The rehabilitation of livelihoods following a disaster requires not only political commitment and technical expertise but also sensitivity to the needs and rights of specific groups. Plans should be gender-focused and designed to protect the rights of

disadvantaged individuals comprehensively across all sectors (Inter-Agency Standing Committee, 2011, pp. 39-43).

The last section "Protection of rights related to documentation; movement; re-establishment of family ties; expression and opinion; and elections": when implementing a rights-based approach to district disaster management, the issues of information and participation from affected communities become paramount. Individuals have the right to access information and the right to be involved in decisions that impact their lives – this includes being engaged in preparedness training and the implementation of measures to mitigate disaster risks. These aspects should not be seen as secondary concerns to address after basic necessities have been provided, but rather should be integrated throughout all stages of disaster management. Furthermore, evidence has demonstrated that promoting community participation is not only ethically sound, but it also leads to more efficient disaster preparedness, response, and recovery outcomes (Inter-Agency Standing Committee, 2011, pp. 45-53).

District-level disaster risk management institutions play a significant role in facilitating coordination and communication between the national and local levels. Beyond their local administrative duties, these institutions are typically engaged in carrying out various disaster-related activities including mitigation, preparedness, response, recovery, and livelihood development programs and projects. Some of these initiatives might be devised and overseen by national entities. Specifically, district-level DRM institutions are often tasked with creating risk maps and vulnerability assessments, formulating and executing contingency plans, distributing necessary resources, suggesting and aiding livelihood diversification, disseminating early warning alerts, conducting rapid needs assessments, and delivering relief efforts as can be seen Figure 8.

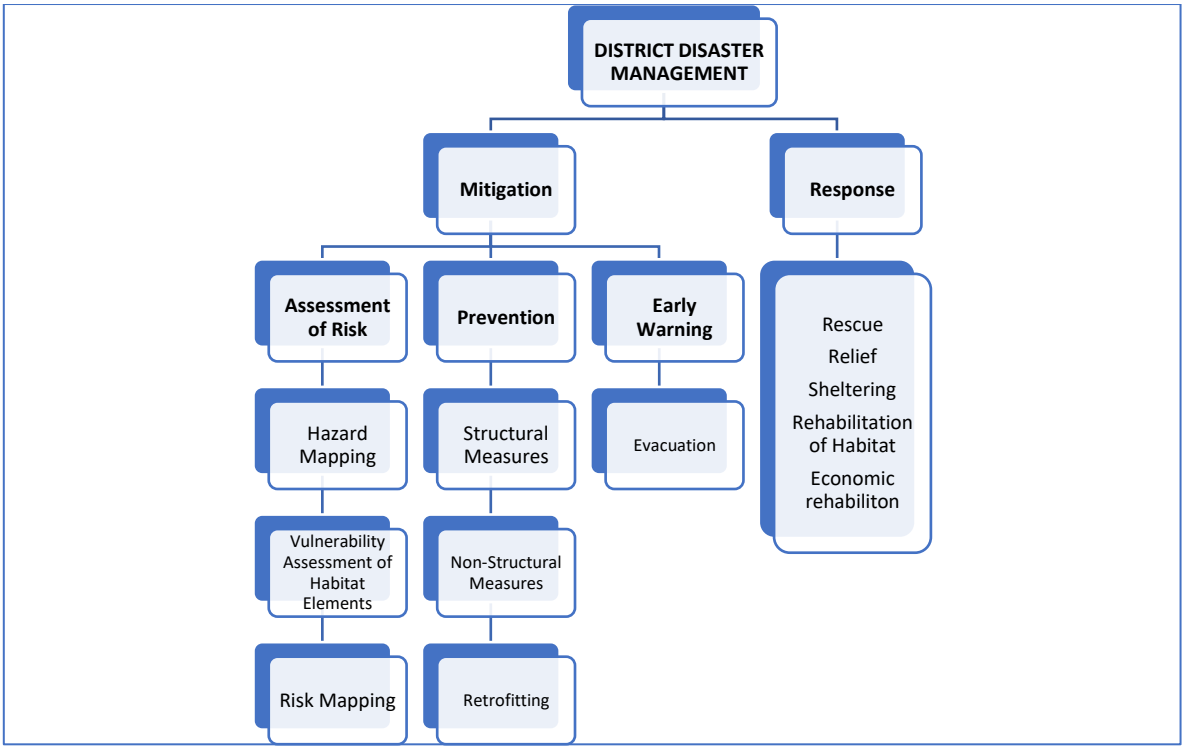

Figure 8. District Disaster Management Plans (Kumar,S. & Chaturvedi, S. (2008), Access https://nidm.gov.in/PDF/modules/DDMP.pdf).

The assessment process at the district level should commence with the determination of the individuals or groups to contact. The suggested contacts for gathering pertinent information include (Food and Agriculture Organization, 2008, p. 35);

(a) Representatives of the district focal point agency for Disaster Risk Management (DRM) and members of district and sub-district DRM committees.

(b) Heads or representatives of sectoral departments at the district level (e.g., agriculture, water resources, health, education, and public works departments).

(c) Representatives from district-level extension, research, and training institutions.

(d) Professional personnel involved in relevant development projects at the district level.,

(e) Representatives of Non-Governmental Organizations (NGOs) and Civil Society Organizations (CSOs).

(f) District-level representatives of producer organizations, cooperatives, and financial institutions.

(g) Individuals from the private sector, such as produce traders, input suppliers, media outlets, and transport providers.

Actually, being prepared for disasters is also included in the Guiding Principles of the Sendai Framework for Disaster Risk Reduction, and it is important to implement these principles into actual preparedness measures. The Sendai Framework has thirteen Guiding Principles, and the first nine are the most relevant for enhancing disaster preparedness for more effective disaster response (United Nations Office for Disaster Risk Reduction, 2015, p. 13). These principles and approaches are applicable for being prepared for hazardous events at all scales, including emergencies and disasters. District disaster management plans provide an overview of the characteristics of a district, considering climate, geography, and topography (temperatures, precipitation levels, geographic area, land ownership, crop patterns, rivers, livelihood details, major drinking water sources, critical facilities, etc.), demographics (literacy rates, poverty, economy, per capita income, primary occupations), climate and weather conditions, rivers, roads, hospitals, and other critical infrastructure. These plans involve gathering information about the to develop plans that address its specific features. Creating plans tailored to the region's characteristics translates to being prepared for potential disasters.

There is successful implementation of District Disaster Management. For instance, India is among the countries most susceptible to disasters worldwide due to its geographical location and terrain, exposing it to various natural hazards such as cyclones, droughts, floods, earthquakes, fires, landslides, and avalanches. As shown in the Figure 9, the numbers of deaths caused by disasters are indicated on the map from lighter to darker shades. India is among the countries with darker shades on the map as 2,210 people. To counter the impact of natural disasters India, numerous specialized programs are in place, aiming to reduce their effects. As can be seen in Figure 10 number of death people from disaster trend showing a decrease in India. It because of district disaster management plans which local communities have developed their own indigenous strategies for coping with disasters. In emergency situations, the engagement of communities, supported by Non-governmental Organizations (NGOs), contributes to strengthening the national disaster management capabilities. However, the integration of concepts such as linking disaster reduction with development, education and training, participatory approaches, incorporating social and human science insights into vulnerability assessment, and allocating resources appropriately amid competing needs is still a work in progress and not yet fully implemented in practice.

Although a tsunami cannot be prevented, its impact can be significantly reduced through consistent community-wide preparedness efforts, including training, drills, prompt warnings, efficient responses, public awareness campaigns, and education. India follows an implicit "zero casualty" policy by adopting a comprehensive approach to disaster preparedness. The Indian Tsunami Early Warning Centre

(ITEWC), located at the Indian National Centre for Ocean Information Services (INCOIS) in Hyderabad, has a dissemination strategy that covers a nationwide network of disaster response and emergency operation centres, district centres, the general public, and the media. During the IOWave16 test of the Indian Ocean Tsunami Early Warning System, around 30,000 individuals were evacuated in Odisha as part of a significant annual awareness-raising initiative. This event also marked the inauguration of the inaugural World Tsunami Awareness Day on November 5, 2016. Following the catastrophic 2004 Indian Ocean Tsunami, the Indian government established the Indian Tsunami Early Warning System. In 2009, the Intergovernmental Oceanographic Commission (IOC) of UNESCO (United Nations Educational, Scientific and Cultural Organization) initiated tsunami drills. By the time Super Cyclone Phailin struck Odisha in 2013, the level of awareness and preparedness was so high that only a few lives were lost (United Nations Office for Disaster Risk Reduction, 2020, p. 43).

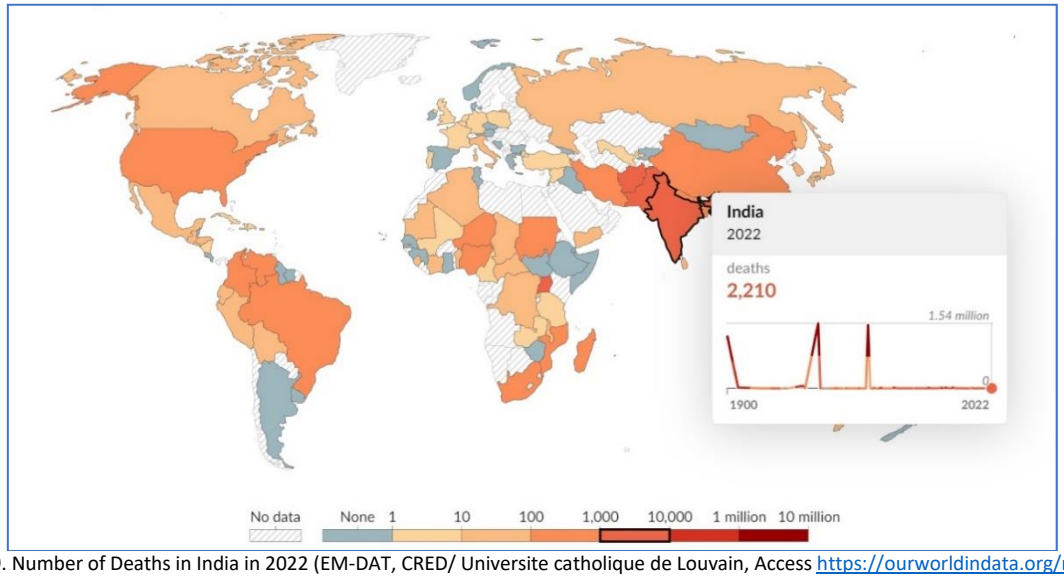

Figure 9. Number of Deaths in India in 2022 (EM-DAT, CRED/ Universite catholique de Louvain, Access https://ourworldindata.org/natural-disasters).

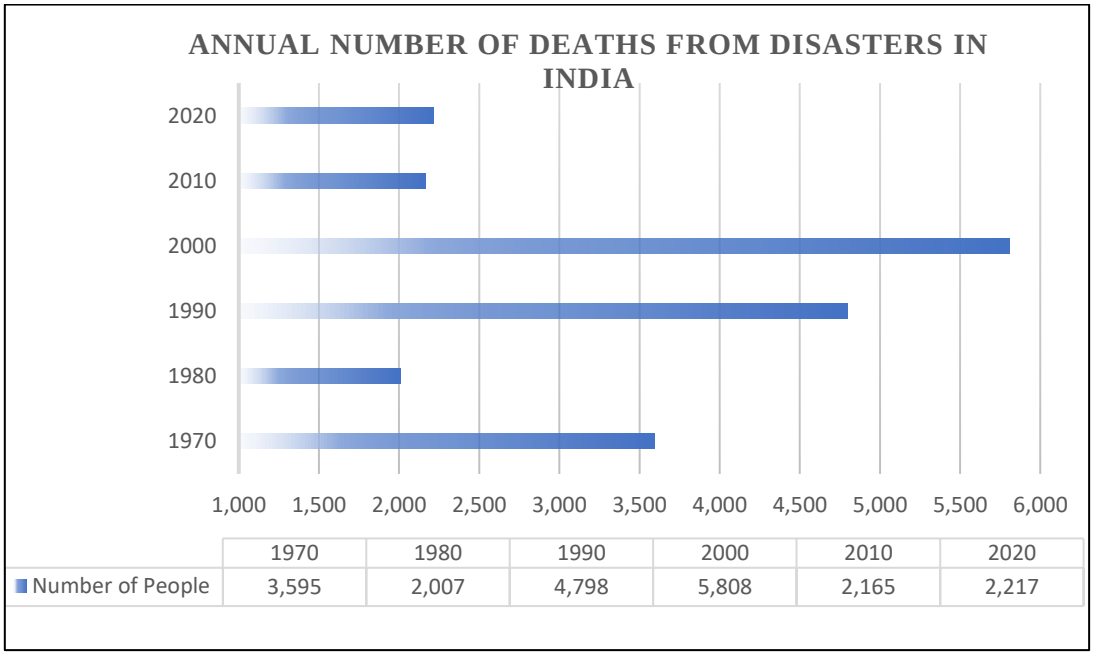

Figure 10. Annual Number of Deaths from Disasters in India (1970-2020) (: EM-DAT, CRED/ Universite catholique de Louvain, Access https://ourworldindata.org/natural-disasters).

Another noteworthy example of district-level disaster management plan importance can be drawn from Sri Lanka. The aftermath of the tsunami's catastrophic impact on June 16th was documented by the Sri Lankan government, revealing the following figures: a total of 31,229 individuals lost their lives as a direct consequence of the tsunami. Additionally, 4,100 individuals were reported as missing, further emphasizing the scale of the disaster's impact. Amidst the devastation, 516,150 individuals were registered as displaced by the tsunami, seeking refuge in welfare centres or finding temporary accommodations with friends and relatives. The tsunami's reach was extensive, affecting 14 out of the 28 districts in Sri Lanka (Asian Disaster Reduction Center, 2004). To avoid redundancy and foster effective utilization of limited resources for disaster risk reduction, a regional consortium of NGOs and donor agencies was formed. This consortium facilitated the exchange of experiences and improved collaboration among various stakeholders. Moreover, communities were connected with local government entities, both directly and through NGOs, ensuring the sustainability of dialogue and advocacy processes. Empowered by the understanding of their rights and capabilities, communities recognized their ability to sustain dialogues and engage in efforts to diminish their vulnerability. Interestingly, the program's scope was defined not by geographical boundaries on a map, but rather encompassed an entire watershed area, spanning from the mountains down to the sea, regardless of administrative divisions. This comprehensive approach allowed for a more holistic understanding of disaster risks and their potential impacts (United Nations International Strategy for Disaster Reduction, 2011, p. 55).

Indeed, what holds significance in district disaster management plans is the meticulous planning of preparedness in areas with a high probability of experiencing disasters. However, instances of well-executed plans can also be found after disasters have occurred. Following the earthquake in Pakistan on October 8th, 2005, the Government swiftly established national agencies for aid and reconstruction. The Earthquake Reconstruction and Rehabilitation Authority (ERRA) created a guidebook to extend disaster risk reduction to development (United Nations Office for Disaster Risk Reduction, 2019, p. 15). It integrated disaster risk management into community preparedness efforts through Hazard Indicator Maps and Disaster Management Committees and Emergency Response Teams for the Mansehra and Muzaffarabad districts. In both areas, a Union Council was also established (United Nations Office for Disaster Risk Reduction, 2011). With technical support from national and international partners, disaster risk reduction was integrated into regional development processes under the project. Workshops developed guidelines to integrate disaster risk reduction into future development planning and national reconstruction planning. A concise reference guide was compiled for regional planning officials, facilitating the incorporation of disaster risk reduction into regional development processes. This example underscores the importance of incorporating disaster risk reduction strategies into areas prone to disasters and highlights how effective coordination and planning can lead to more resilient communities in the face of disasters.

4. Disaster Management in Türkiye

Türkiye, due to its geographical location, frequently faces natural disasters especially earthquakes, floods, and wildfires. The 1939 Erzincan earthquake seems to have laid the foundation for Türkiye's disaster management and policies. However, real reforms and coordination efforts gained momentum after the 1999 Marmara earthquake. This major catastrophe forced Türkiye to adopt a new approach to effectively respond to and coordinate disaster relief efforts. In 2009, the Law No. 5902 was enacted, establishing the Disaster and Emergency Management Authority (Afet ve Acil Durum Yönetimi Başkanlığı/AFAD). This agency played a central role in dealing with disasters and emergencies, facilitating coordination among different organizations, and providing a rapid response to disasters. This was a significant step forward. Furthermore, after Türkiye transitioned to a presidential system in 2017, the Disaster and Emergency Management Authority was restructured as an agency under the

Ministry of Interior. This move was seen as another important step to enhance the effectiveness of disaster management and coordination. In this context, the Disaster and Emergency Management Authority has prioritized Türkiye's transition from crisis management to risk management and implemented a new disaster management model known as the Integrated Disaster Management System (Disaster and Emergency Management Presidency, 2022).

In Türkiye, disaster management plans are commonly perceived as post-disaster first aid and intervention activities, and success is primarily evaluated based on these aspects. However, Türkiye's disaster management and policies should reflect the continuous effort to be better prepared against natural disasters such as earthquakes, floods and forest fires. Such reforms are vital for protecting human life and minimizing the effects of disasters. It should be considered that disaster management consists of phases including risk and crisis management, yet in Türkiye, it is predominantly seen as crisis management. There is a need to move away from policies that are more like stopgap measures and instead, reorganize disaster management plans to cover the pre-disaster, during-disaster, and post-disaster phases comprehensively. Furthermore, prioritizing the first phase of disaster management, which is risk analysis, will enhance success in minimizing disaster impacts. Crisis management is mostly focused on post-event actions, requiring momentary behaviour, whereas risk management is primarily based on planning and therefore necessitates strategic behaviour.

The prominence of crisis management over risk management in Türkiye can indeed lead to increased loss of life and property. This is because the type, magnitude, location, timing, and impact of disasters are unpredictable, and adequate preparations are not made accordingly. Even in a moderately sized disaster on a global scale, significant loss of life and property can occur in Türkiye due to the lack of preparation. This situation was clearly observed in events like the 1999 Gölcük and Düzce earthquakes, the 2003 Bingöl earthquake, the 2011 Van earthquake, and the 2016 Bodrum earthquake. Similar challenges are also evident in flood and storm events related to global warming. For instance, in November 2018, the Bodrum district of Muğla experienced multiple unplanned construction and infrastructure-related flood disasters within two weeks. Many businesses and homes were inundated, and numerous vehicles were damaged or swept away, resulting in substantial financial losses. The absence of a district disaster management plan and interventions occurred only after the crisis unfolded (Şahin, 2019, p. 194). However, given the predictability of such events related to global warming, comprehensive disaster planning by local authorities could have mitigated these losses. Since this situation is applicable to the country as a whole, it is essential to develop a robust disaster plan to prevent and manage such disasters effectively. In conclusion, creating a well-structured disaster plan is crucial to prevent and manage disasters like these in Türkiye, as relying solely on crisis management after the fact can lead to significant human and economic losses. Recently, the floods in Adıyaman and Şanlıurfa, which were triggered by earthquakes cantered in Kahramanmaraş, have resulted in the unfortunate loss of 20 lives, with hundreds of earthquake victims living in tents (BBC, 2023). The 2021 Local Disaster Risk Reduction Plans (İl Afet Risk Azaltma Planı/İRAP) report has highlighted negligence and lack of preparedness as the causes of the flooding (İRAP, 2021). Despite efforts to centralize responsibilities for effective disaster management in our country, the situation indicates that local authorities have become passive in terms of disaster preparedness, with deficiencies in district disaster management plans.

RESULTS AND CONCLUSION

Throughout history, both nature and humanity have faced various dangers. However, in the current century, the increase in human-triggered natural events, coupled with population growth, has led to the occurrence of catastrophic events. In this context, the first step in the study was to clarify the confusion surrounding the concepts of hazard, disaster, and catastrophe. Implementing planned disaster management based on the geographical characteristics, climate, and other attributes of a

region before disasters occur is undoubtedly a preferred approach. The processes of planned disaster management should include prevention and mitigation, preparedness, response, and recovery.

In disaster management, regional institutions play a crucial role in coordinating actions between national and local levels and acting as intermediaries. These institutions often implement programs and projects for disaster reduction, preparedness, response, recovery, and livelihood improvement, with some being planned and supervised by national bodies. In this context, district disaster management emerges as one of the most preferred methods.

Successful examples of comprehensive plans such as India and Sri Lanka can be found both in pre-disaster and post-disaster phases. These plans are responsible for creating vulnerability profiles, developing and implementing emergency plans, providing essential inputs, suggesting and supporting livelihood diversification, disseminating early warning messages, preparing emergency needs assessments, and delivering assistance. The study focuses on district disaster management plans, aiming to showcase reductions in the number of affected individuals and death rates resulting from effective disaster response. The ultimate goal is to demonstrate the positive impact of these plans in minimizing the devastating consequences of disasters.

In any country, disasters can be inevitable, and this holds true for Türkiye as well. The earthquakes in the Southeastern Anatolia region that Türkiye experienced on the centenary of the Republic, followed by subsequent flooding, have brought the issue of disasters to the forefront of Türkiye's agenda. Türkiye is geographically situated on fault lines, making it particularly susceptible to disasters, especially in the aftermath of earthquakes. Similar to other types of disasters such as floods, forest fires, and droughts, the deficiencies and problems in disaster preparedness measures taken before the earthquake have been highlighted once again. Despite being categorized as natural events, the outcomes resulting from adopting different policies and practices during the disaster preparedness process can vary significantly. Therefore, it is essential to take proactive measures nationwide for areas of settlement before disasters strike.

The disaster management system in Türkiye should be restructured, and strategic plans for risk reduction and disaster response should be prepared for the country. Particularly in the stages of disaster preparedness and risk reduction, it is essential to eliminate the lack of cooperation and coordination between institutions at the local level rather than relying solely on central government efforts. Successful examples of disaster management should be examined to reorganize disaster management units at the local level, including provinces, districts, and municipalities, to enhance their effectiveness. Local governments, professional organizations, and voluntary associations should collaborate within a holistic framework to engage in pre-disaster planning and preparedness efforts, fostering a community-based planning approach. In Türkiye, it is crucial to shift the perspective from solely reducing post-disaster damages to adopting a comprehensive approach that addresses risk factors during the pre-disaster periods.

In this regard, comprehensive efforts should include creating disaster maps, settlement plans, building structures, and the compilation of data regarding individuals residing in each building, down to the smallest settlement units. All of this data should be entered into a central database for each settlement area. Consequently, having an effective disaster management system and district level preparations can help minimize the impacts of disasters. Such incidents highlight the critical importance of local governments' disaster plans and their capacity for swift response. It is essential that these plans are not just on paper but also practical and up-to-date.

Compliance with the Ethical Standard

Conflict of Interests: *There is no conflict of interest between the authors or any third party individuals or institutions.*

Ethics Committee Permission*: Ethics committee permission is not required for this study.*

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