

Influence of Natural Disasters on Global Socio-Economic Systems and Sustainable Development: A Systematic Review

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Abstract

This article systematically reviews natural disasters that occur globally and highlights their impact and associated challenges on the sustainable development of society and the economy. The presence of extensive research on the detrimental impact of natural disasters on mental health and other diverse elements of societal or economic well-being is found in this review. The study suggests that adversities can be minimized by employing the right public and private policies that support a post-disaster state, leading to enhanced disaster management initiatives and rehabilitation efforts. The PRISMA model was employed for the inclusion and exclusion criteria for the studies. Natural disasters being a threat to sustainability and the community's well-being, the findings showcase the urgency to consider their long-term impact. Various forms of natural disasters that are due to disturbances related to land, water, air, or fire are considered in this study. The research scope aims towards worldwide sustainable development by gathering multiple inputs that enable changing the dynamics of disaster management. This study concludes with limitations and recommendations for future disaster preparedness and management in various scenarios.

Keywords: natural disasters; PRISMA; Socio-economic impact; sustainability; disaster management; sustainable development

1. Introduction

Since the beginning of our existence, natural disasters have affected life, and in response to them, societies and individuals have made several attempts to decrease the occurrence of such unexpected mishaps. Various efforts in disaster management have led to a reduction in harm to life, property, and the environment across the globe. Some regions and economies are more capable of addressing these challenges, which may be due to economic, cultural, or political influence. With globalization and the emergence of climate change patterns, global economies are interconnected and have direct and indirect impacts on one another. To ensure an adequate response, different individuals, organizations, government officials, and emergency response agencies need to engage in disaster preparedness activities [1–5].

In previous studies, the concepts of climate change adaptation and disaster risk management integration have predominated over other research topics [6–8]. The growing frequency of climate-related disasters poses various threats to climate change [9]. It is equally important to have various frameworks of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) that can be part of a disaster management strategy. This



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can further lead to design-effective policy implications for combating the climate change crisis. Over the past decade, disaster literature reviews have been extensive, incorporating concepts related to society mainly during sudden shocks [10–12]. Several studies have shown that the United States is experiencing natural disasters at an extreme magnitude, and vulnerable populations experience hardships and encounter several difficulties in coping. The major challenges are social tensions, supply chain disruptions, GDP loss, destruction of coastal areas, and disruptions in overall economic activities [13–19]. Natural disasters have devastating social and economic impacts on low-income communities. These communities have long-lasting infrastructure damage and experience more delayed recovery responses. This study addresses post-disaster challenges in low-income communities and suggests that there should be short-term temporary housing facilities for long-term education and train low-income individuals on how to manage post-disaster reconstruction and social mobility [20].

Despite the availability of various databases and details, there still exist several challenges in capturing the direct and indirect socioeconomic impacts of these natural disasters. Some systematic reviews have been conducted in the past, focusing on disaster management, best practices, and their impact on various aspects of health, physiology, and rehabilitation factors [21–24]. An in-depth understanding of capturing the impact of natural disasters with immediate social work involves rebuilding and adopting an integrated social response to promote sustainable recovery. The scope of social work in the post-disaster state is important and is expected to extend beyond psychological support. The behavior and awareness of people are essential factors during the emergence of natural disasters, and this should be documented appropriately in undeveloped or developing economies [25,26]. The occurrence of natural disasters results in huge losses of output and has a significant impact on communities due to massive destruction, which further results in economic growth standstill or decline. Sometimes, effective disaster management can generate sustainable economic outcomes, such as climate-resistant infrastructure, financial relief programs incorporated with economic policy, and insurance programs [27–30]. A Systematic Literature Review (SLR) of reconstruction planning in post-earthquake situations was conducted, specifically considering sustainability; the findings revealed a growing trend towards AI-driven reconstruction planning; this comprehensive planning will lead to economic, social, and environmental infrastructure by using available resources [31].

Tracking natural disaster data is one of the key aspects in making effective and timely decisions to cope with severe impacts. The concern is not only managing databases; it is equally important to improve the utilization of disaster loss data [32]. Generally, disaster loss databases have fine biases in terms of accounting, timelines, systematic functions, geographical declarations, and hazard-related facts and figures [33–40]. The Emergency Events Database (EM-DAT) is rising in prominence, owing to a progressive shift in open-access data, mainly focusing on climate-related disasters [41]. The data are user-friendly, country-wise, region-based, and tailored to a wide range of natural and technological disaster reports. A detailed analysis was conducted using EM-DAT data on global disasters caused by technological and natural hazards [42]. According to the EM-DAT classification, 64% of disasters belong to the ‘Natural’ group, which means that most of them refer to storms (18%) and floods (22%). The remaining 36% are ‘technological’ hazards, such as transport accidents (rail, air, water, and road), which are the most frequent. Various trends were identified regarding contributors to power system resilience during extreme weather events using the PRISMA 2020 framework; the authors conducted comprehensive research using the Web of Science and Scopus databases and applied Bibliometrix and Biblioshiny tools to conduct data analysis [43]. The study concluded that the USA, China, the UK, and Iran were the most cited countries, while various common topics were identified, such as

power outages, extreme weather, and AI-driven technologies and optimization techniques. It is further recommended that more AI predictive frameworks be developed to tackle climate change.

Figure 1, according to the Emergency Response Coordination Centre (ERCC) (2026), highlights the economic and human loss during 2003–2024 in cubic billions, and it shows that floods, droughts, and extreme rises in temperature have a paramount effect globally [44]. Rapid climate change is ongoing, resulting in unpredictable variations in the forms of natural disasters that impact various aspects of society. These include safety, health, housing, energy, water resources, food production, transportation, and finance.

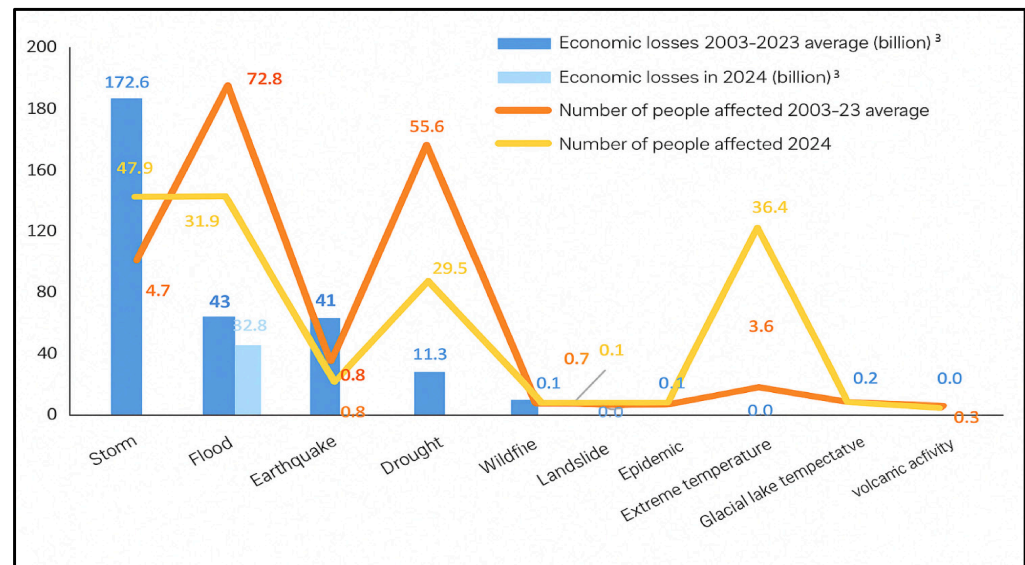


Figure 1. Human and economic impact per disaster type [44]. Accessed: 14 February 2026.

Figure 2 below is from the Emergency Response Coordination Center (ERCC); it depicts that most natural disasters are in the form of floods and storms, and they lead to a massive and multifaceted economic impact [44]. There are direct costs of physical destruction and indirect costs of loss of human life. Floods impose various short- and long-term economic burdens that directly impact the Gross Domestic Product (GDP). Additionally, disruption from the floods affects sectoral productivity in the form of supply chains and output levels. The suspension of various economic activities builds pressure on the demand and supply sides, resulting in huge losses in various economies [45].

This study advances the literature by focusing on the socioeconomic impact of natural disasters in various countries. Considering the above arguments, this review aims to consider the various disruptions to economic activities, social structures, and livelihoods. This paper focuses on the short- and long-term consequences of infrastructure damage, which leads to reduced GDP, increased poverty, and disruptions in healthcare provisions.

Section 2 describes the data and research methodology adopted. Section 3 discusses the previous literature. Section 4 reports the conclusion and policy implications. Finally, Section 5 presents the limitations and future scope of this study.

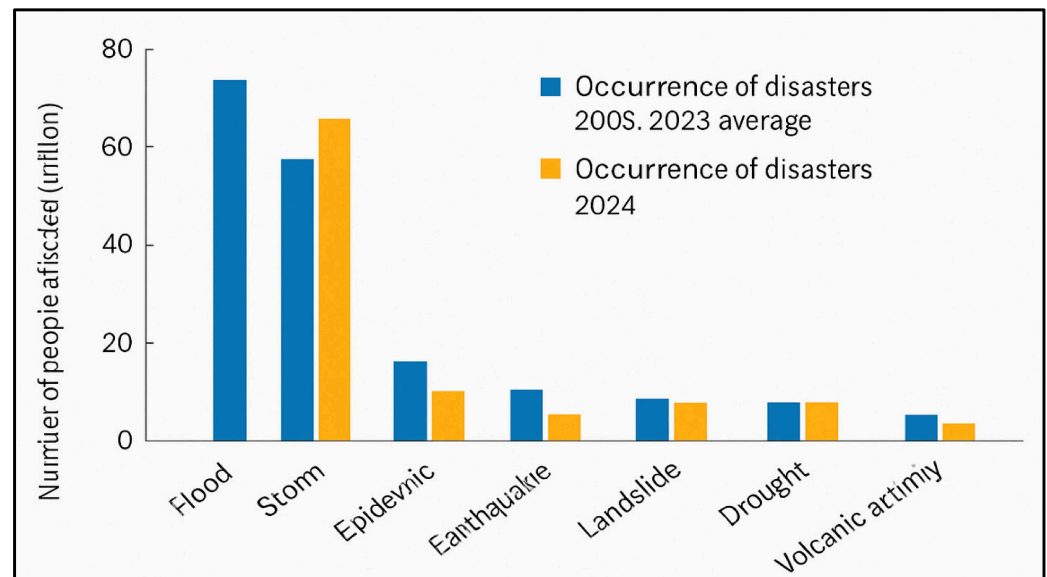


Figure 2. Occurrences of disasters [44]. Accessed: 14 February 2026.

2. Relevant Data and Methodology

2.1. Conceptual Approach

Natural disasters can directly or indirectly impact economies in various ways. Some of their direct effects include social aspects, such as migration, loss of lives, and disruption of economic activities. However, there are continued long-term or indirect impacts that adversely hamper social and economic well-being, and such effects on individuals are difficult to determine. The macroeconomic effects of natural disasters occur in the form of output loss and its components. Moreover, the changes in GDP growth and government stimulus packages also vary from country to country. The impact of disasters is based on the country's characteristics, and studies have found that smaller economies have huge output losses as compared to developed economies [46]. Furthermore, countries with high per-capita income, better institutions, higher literacy rates, and higher levels of government spending are in a better position to withstand these situations. Countries with disaster management preparedness can face a lower risk of decline in growth in the post-disaster period [47]. In the latest study by the International Monetary Fund (IMF), the impact of natural disasters on macroeconomic outcomes is examined [48]. They found that due to the sudden shock of a disaster, GDP and output temporarily declined. However, the effects remain in the long run and stay permanent, as the recovery does not completely offset the negative impact. Another study elaborated that the Chinese coastal areas between Fujian and Zhejiang have the highest risk of rainstorms compared to inland areas [49]. These areas were not directly affected by the typhoons, so they had a medium risk category and less exposure to risk.

Based on this discussion, this review synthesizes the evidence of socio-economic impact by considering the scholarly findings regarding natural disasters. The various highlighted policies can help justify how to combat social and economic challenges and rehabilitation efforts to reduce the effects at the micro and macro levels. However, our study focused on and tailored an analysis of the nature of disasters and offered a focus on the socioeconomic perspective. In addition, detailed and comprehensive information on this aspect is notably limited. We aim to develop a set of policy implications based on the previous literature in terms of the "socio-economic" context. The nexus between community and government participation in recovery efforts is to explore experiences in local economies in various ways.

2.2. Formulating Research Question

In the early stages of this research, a research question was formulated to guide the research process, with a primary focus on investigating the research output on the social and economic impact of natural disasters, with a particular emphasis on ensuring that the readers understand the variety of natural disasters and the extent of their impact on social welfare and economic development. The research question was “What is the social and economic impact of natural disasters?” Based on the early stages of this research, with the primary focus on natural disasters in various countries, there is particular emphasis on socio-economic challenges.

2.3. Inclusion/Exclusion Criteria [PRISMA Framework]

2.3.1. Identifying Relevant Publications

This systematic review was conducted and reported in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) guidelines. Overall, this study followed the various steps of screening, eligibility, and selection using the PRISMA framework. Furthermore, the PRISMA 2020 checklist is provided in the Supplementary Materials to enhance the completeness and usability of this systematic review. The elements included in the systematic review have been mentioned, and some aspects are out of scope and are accordingly mentioned as not applicable.

As depicted in Figure 3, in this systematic review, the criteria established by the PRISMA 2020 statement were followed to improve the reporting of systematic reviews [50]. These guidelines support the improvement in the quality of secondary research and allow the researchers to be equipped to highlight and appraise the existing literature in detail. Moreover, the criteria for this study’s selection were the following: (a) studies about natural disasters, but specifically focusing on economic and social impact; (b) there were also restrictions on language (only English publications were selected for the study); (c) for a comprehensive analysis, the papers needed be available for full access; and (d) detailed studies had a time constraint, with criteria that they should have been published after 2015.

The current study conducted an online search using the Scopus database as reporting criteria to utilize a set of previous studies. The selected database has various research articles that can help to develop a detailed systematic review. The period under consideration was from 2016 to 2026, focusing on the latest and most relevant studies that matched the scope of the study. Conference papers and book chapters were excluded from the search criteria to maintain the high impact and quality of the articles. The primary search terms were “natural disasters”, “socio impact”, “economic impact”, “hurricanes”, “climate change”, “vulnerable”, “climate change”, “socio-economic impact”, “climate change”, and “disaster management”. Table 1 indicates that the PRISMA search strings in the first PRISMA criterion resulted in 529 papers. The second criterion was applied, and this resulted in 239 research articles. The fourth stage excluded review articles (6), reports (10), and some more articles (4). Finally, the fifth criterion had the main focus on socio-economic impact, leading to a final selection of 58 articles.

Table 1. Search strings.

Data Base	Search String
Scopus	TITLE—“Natural Disaster” OR “Socioeconomic Impact” OR “Natural Disasters” OR “Climate Change” OR “Socioeconomics” OR “Economic and Social Effects” OR “Economic Impact” OR “Socioeconomic Factors” OR “Socio-economic Impacts” OR “Socio-economics”

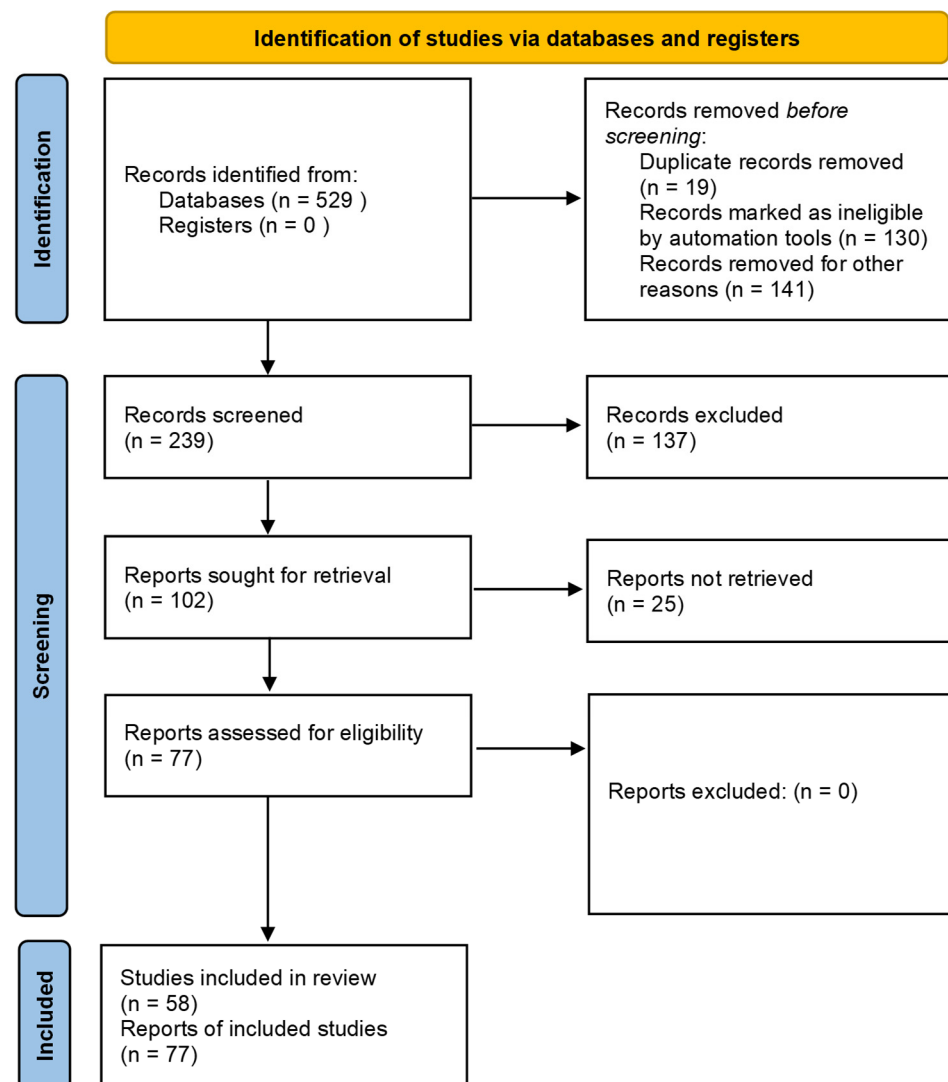


Figure 3. PRISMA framework 2020. Source: Author's work [50].

2.3.2. Year of Publication

Figure 4 illustrates graphs from the final 58 included studies; it represents the number of documents published annually from 2016 to 2026. The trend shows a gradual increase in research output related to natural disasters over the years, with slight fluctuations. The initial publications in 2016 were a few articles, followed by a noticeable rise in 2017. A decline in publications was observed in 2018–2019; however, it rose again in 2020. Another minor decline was observed in 2021 and 2022, followed by a peak in 2023, which marks the highest number of publications. The year 2024 showed another significant drop in comparison to the previous year. However, 2025 research is yet to gain momentum there are expected to be additional publications until the end of the year. The year 2026 is expected to rise further due to the growing relevance of the topic. The overview shows increasing scholarly interest in the studies of natural disasters and their social and economic implications, particularly after 2020. Figure 4 below represents the yearly distribution of the final inclusions of the SCOPUS publications after applying the inclusion–exclusion criteria using the PRISMA model.

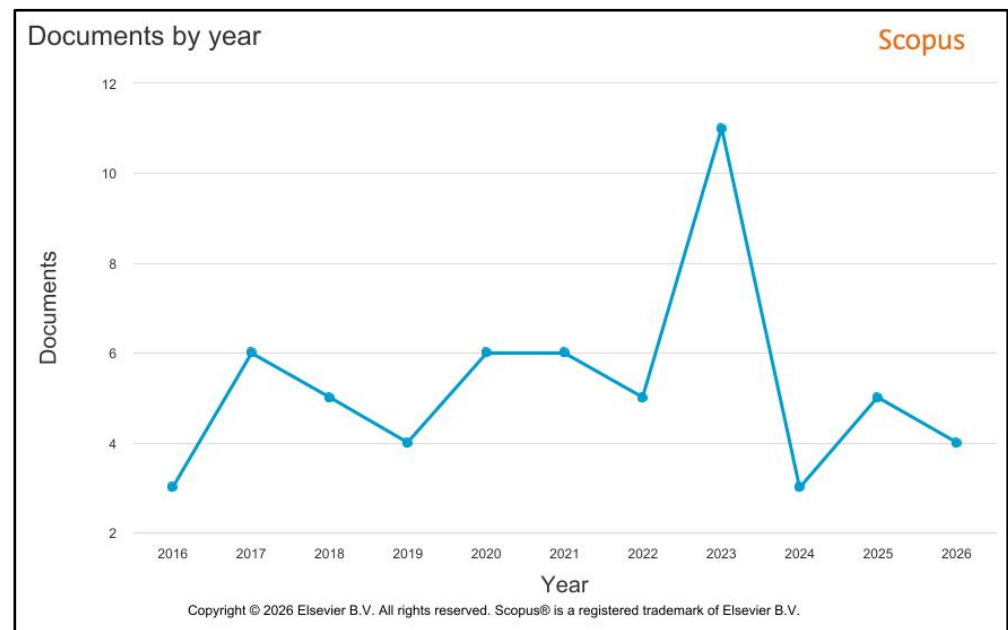


Figure 4. Documents by year of publication. Source: Author’s creation using SCOPUS.

2.3.3. Publication by Country

In recent years, a noticeable rise has been observed in the research output across several countries that are contributing to the field of study. As shown in Figure 5, the leading contributor to the literature is the United States, having the highest number of publications, followed by China, which is committed to advancing its research in this field. Ranking third is Germany, while the United Kingdom, Australia, and India are each moderate contributors in terms of the number of papers. Other countries, such as Sweden, Japan, Brazil, and Bangladesh, have also made noteworthy contributions; each of them has produced a few documents. The strong presence of the United States and China shows their reliable research infrastructure, funding availability, and multidisciplinary collaboration opportunities, which lead to innovation and the sharing of knowledge. The topic’s global relevance can be justified by observing the growing participation of growing nations such as Brazil, India, and Bangladesh. The diverse geographic involvement of different countries in this field of study indicates the necessity to widen the recognition of this issue into social, economic, and environmental contexts. Such a trend in the distribution of publications states the importance of global collaboration to address the complex challenges and further emphasizes the need for international partnerships for sustainability and to reach enhanced research productivity in the upcoming years. Figure 5 below represents the documents by country or territory of the final inclusions of the SCOPUS publications after applying the inclusion–exclusion criteria using the PRISMA model. The countries or territories with two or fewer articles are excluded from the diagram below to maintain a clearly visible output.

Table 2 provides a detailed overview of the 58 articles that were used for the study. It classifies the scholarly publications according to different types of natural disasters, their respective countries, and their implications, social, economic, or both. The table mentions different hazards, which include earthquakes, floods, tsunamis, rainstorms, droughts, hurricanes, tornadoes, heatwaves, wildfire-related hazards, and other natural hazards discussed in each scholarly publication. The term “other natural hazards” refers to multiple hazards that may have occurred in the region, or it may refer to a research paper that covers multiple mishaps in the same region. This compilation of disaster-related data and its adverse effects stresses global urgency and the relevance of research in this domain. This table not only highlights the importance of growing recognition of the multifaceted

consequences and adverse effects of natural disasters on communities and global systems, but also their wider socio-economic repercussions.

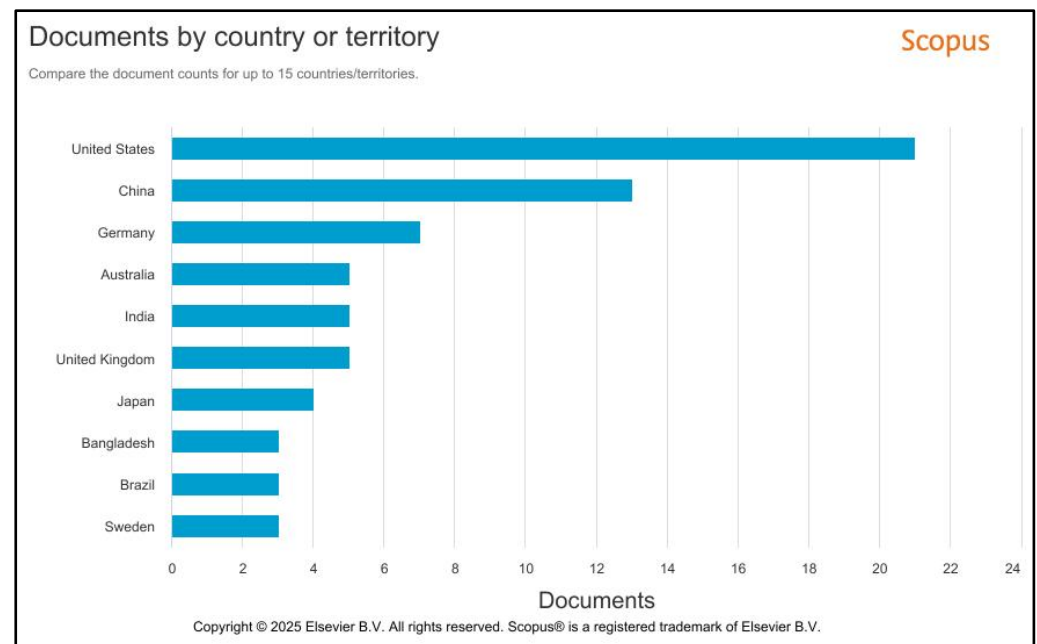


Figure 5. Documents by country or territory. Source: Author’s creation using SCOPUS.

Figure 6 presents the distribution of documents by author affiliation of the 58 inclusion studies. The leading contributor is the Chinese Academy of Sciences with the highest number of publications, followed by Texas A&M University and the Institute of Geographic Sciences and Natural Resources Research. Many other remarkable research contributors from leading research institutions include Harvard Medical School, the Harvard T.H. Chan School of Public Health, Johns Hopkins University, and Chiba University, each of which depicts a continuous engagement in disaster-related socio-economic research. Other contributors include the Institute of Atmospheric Physics and Tohoku University in China.

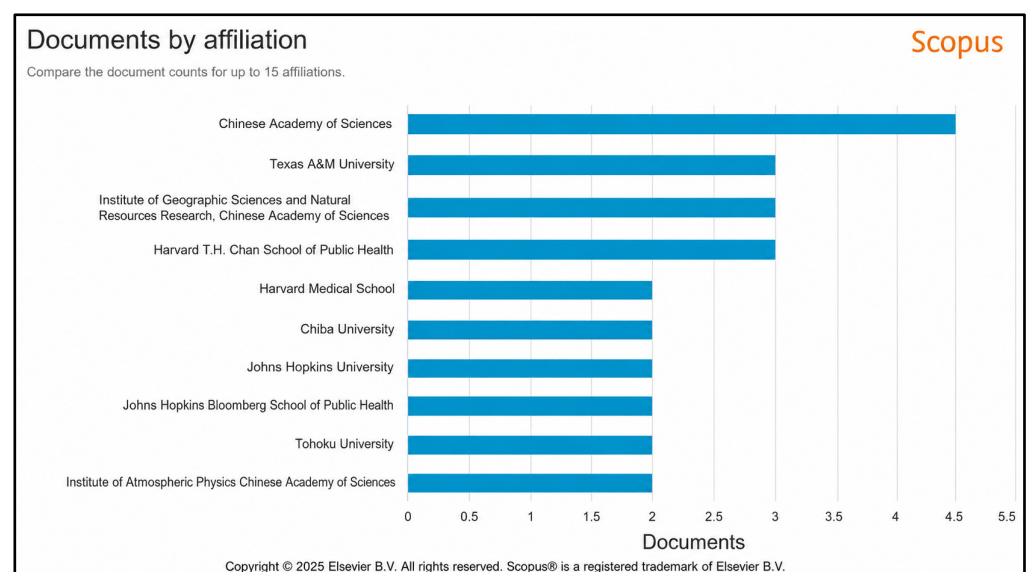


Figure 6. Documents by affiliation. Source: Author’s creation using SCOPUS.

Table 2. Literature review summary. Source: Author’s creation.

Sr. No.	Year	First Author	Country	Earthquake/ Tsunami	Floods/ Rainstorm/ Drought	Hurricane/ Tornado	Heatwave/ Heat Hazards/ Wildfire	Other Natural Hazards/ Multiple Natural Hazards	Economic Impact	Social Impact
1.	2016	Graif C. [51]	United States			✓				✓
2.	2016	Han W. [52]	China						✓	
3.	2016	De Waard J. [53]	United States			✓				✓
4.	2017	Shupp R. [54]	United States			✓				✓
5.	2017	De Araújo Moreira F. [55]	Brazil		✓					✓
6.	2017	Burger J. [56]	United States			✓				✓
7.	2017	Park A. [57]	China	✓					✓	
8.	2017	Shanthi B. [58]	India	✓						✓
9.	2017	Sam A.S. [59]	India		✓					✓
10.	2018	Santos-Burgoa C. [60]	United States			✓			✓	✓
11.	2018	Nagy G.J. [61]	Latin America					✓		✓
12.	2018	Arthi V. [62]	United States			✓			✓	✓
13.	2018	De Silva M.M.G.T. [63]	Sri Lanka		✓				✓	✓
14.	2018	Sidle R.C. [64]	Japan	✓						✓
15.	2019	Chen H. [65]	China		✓					✓
16.	2019	Mendoza M.T. [66]	Germany		✓				✓	✓
17.	2019	Cook A.C. [67]	Haiti			✓			✓	
18.	2019	Ishizawa O.A. [68]	Central America			✓			✓	✓
19.	2020	Shiba K. [69]	East Japan	✓						✓
20.	2020	Casey J.A. [70]	NA—Global					✓		✓
21.	2020	Ikeda T. [71]	Japan	✓					✓	✓
22.	2020	Huang X. [72]	China				✓		✓	✓
23.	2020	Patel S.K. [73]	USA					✓	✓	✓
24.	2020	Liu S. [74]	China		✓				✓	✓

Table 2. Cont.

Sr. No.	Year	First Author	Country	Earthquake/ Tsunami	Floods/ Rainstorm/ Drought	Hurricane/ Tornado	Heatwave/ Heat Hazards/ Wildfire	Other Natural Hazards/ Multiple Natural Hazards	Economic Impact	Social Impact
25.	2021	Lamichhane S. [75]	Nepal					✓	✓	✓
26.	2021	Chen Q. [76]	China					✓		✓
27.	2021	Shah T.M. [77]	Global					✓	✓	
28.	2021	Li Y. [78]	China							✓
29.	2021	Ahmed S. [79]	Bangladesh						✓	✓
30.	2021	George J. [80]	Nigeria					✓	✓	✓
31.	2022	Sansom G.T. [27]	Houston, Texas					✓		✓
32.	2022	Cohen O. [81]	Israel				✓			✓
33.	2022	Gomula A. [82]	India					✓		✓
34.	2022	Dade M.C. [83]	World					✓	✓	✓
35.	2022	Alam E. [84]	Bangladesh					✓		✓
36.	2023	Kourtit K. [85]	Global					✓	✓	✓
37.	2023	Dugan J. [86]	Brazil					✓		✓
38.	2023	Kuhn C.E.S. [87]	United States					✓	✓	✓
39.	2023	Nguyen A.-M. [88]	United States			✓			✓	✓
40.	2023	Liu H. [89]	China					✓		✓
41.	2023	Li A. [90]	Australia					✓		✓
42.	2023	Charak A. [91]	India					✓	✓	✓
43.	2023	Yao Y. [92]	China		✓					✓
44.	2023	de Oliveira V.H. [93]	Brazil			✓				✓
45.	2023	Wang W. [94]	China					✓	✓	✓
46.	2023	Hafsi A. [95]	Mexico					✓	✓	✓
47.	2024	Langlois B.K. [96]	Indonesia		✓					✓
48.	2024	Li D. [97]	China		✓				✓	✓
49.	2024	Cai C. [98]	China		✓				✓	✓

Table 2. Cont.

Sr. No.	Year	First Author	Country	Earthquake/ Tsunami	Floods/ Rainstorm/ Drought	Hurricane/ Tornado	Heatwave/ Heat Hazards/ Wildfire	Other Natural Hazards/ Multiple Natural Hazards	Economic Impact	Social Impact
50.	2025	Wang, Y. [99]	China		✓				✓	✓
51.	2025	Nasir, A. [100]	Turkey	✓					✓	✓
52.	2025	Aning-Agyei, P.G. [101]	Africa				✓		✓	
53.	2025	Díaz-Fernández, M. [102]	Latin America					✓	✓	✓
54.	2025	Yang, Y. [12]						✓	✓	✓
55.	2026	Uğurlar, A. [103]	Turkey	✓					✓	✓
56.	2026	Cinque, A. [104]	Indonesia					✓		✓
57.	2026	Swe, K.N. [105]	Vietnam		✓					✓
58.	2026	Yang, Y. [106]	South Korea		✓				✓	✓
Total									32	54

Literature review summary. The “✓” symbol indicates “Yes”, which is a positive presence.

The contributions from internationally recognized academic institutions and research organizations showcase the global importance of the study of natural disasters and their impact on social and economic perspectives. The scholarly article distribution confirms that North American and Asian research organizations are actively generating scientific literature in the field, more precisely by collaboration and interdisciplinary studies. The affiliations with fewer than two documents are excluded from the diagram below to maintain a clearly visible output.

2.3.4. Keyword Analysis

Figure 7 illustrates the co-word network (CoWordNet) analysis created using “R Studio” version 2024.12.1+563 as a schematic representation of the co-occurrence relationships between authors’ keywords in the selected articles under study and their most frequent occurrences. The figure shows two main clusters (distinguished by the colors blue and red), representing two main themes, “Natural disaster” and “Human”, and their association with keywords within and between these clusters. In the first theme, the blue cluster, “Natural disaster”, appears as the most dominant keyword (note its high density), representing the main theme keyword of the study (appearing approximately 41 times, or 9%), and is highly connected with other keywords not only within its cluster but also with keywords in the other cluster. Moreover, the analysis shows strong associations between these two themes and “Socioeconomic impact” (highly frequent, appearing approximately 28 times, or about 6%), “disasters” and “disaster management” (19 times, also representing 4%), “human gender” (“male” and “female”), “public health”, and “mental health”.

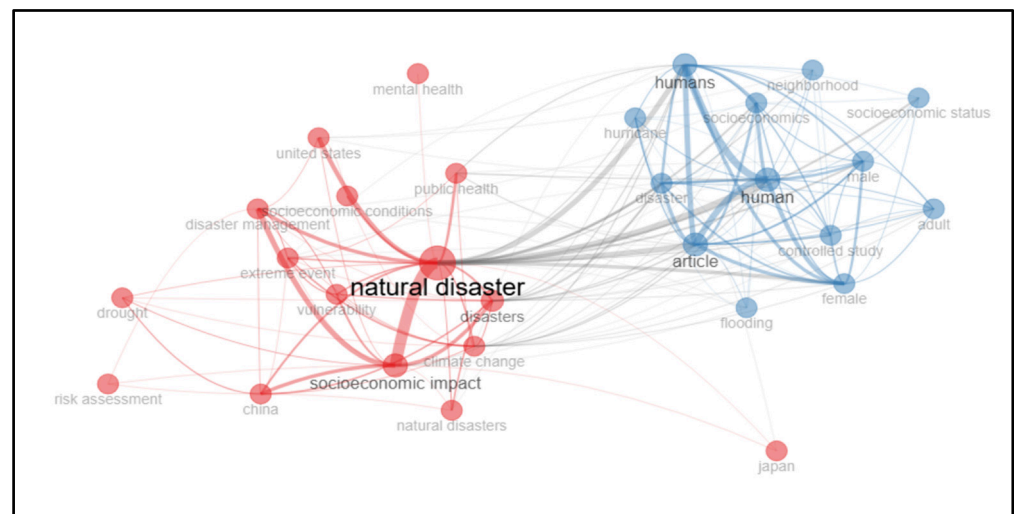


Figure 7. Co-word network analysis. Source: Author’s creation using R Studio.

Additionally, other terms that were region-specific and socially oriented, such as “China”, “United States”, “vulnerability”, “public health”, and “mental health”, frequently appeared, which indicates a focus on studies related to geographic exposure and human-related consequences.

Other keywords that were hazard-specific were “flooding,” “hurricane,” “drought,” and “earthquake”, which were also frequently sighted, notably proving that even with the diverse field of study in disaster types, climate-related and weather-induced events are visible prominently. Furthermore, social identity keywords such as “adult”, “female”, “survivor,” and “neighbourhood” depict the population-specific analyses in the literature.

Conversely, peripheral keywords (those at the edges of the network) refer to topics that require further scientific research. They may point to more specialized topics, such as Japan, earthquakes, hurricanes, tropical storms, floods, and natural hazards, or emerging

keywords (topics) such as risk assessment, hazard assessment, health impact, mental health, and climate change, or isolated keywords such as drought, Brazil, Indonesia, and Puerto Rico.

Overall, the distribution of keywords indicates that current research in this domain is strongly oriented toward understanding natural disasters within the context of climate change, socio-economic vulnerability, and public health implications, reinforcing a multidimensional perspective in disaster studies.

3. Discussion

Human lives and infrastructure are not the only things affected by natural disasters; they also lead to the loss of biodiversity. Species lose their habitats and try to move to new places during floods, wildfires, and earthquakes. Environmental degradation due to disasters leads to changes in the ecosystem, and it also accelerates the extinction of species. The impact of the Kumamoto earthquakes on future ecosystems due to the loss of grasslands and forests was examined by [64]. During a landslide, usually, the debris flows over short distances, and wood can be accumulated in the head areas. In the future, this can be posed as a risk for natural habitats, rural roads, and pasture management. It was suggested to have sustainable development policies to avoid long-term socioeconomic loss in affected economies. Moreover, human activities play a significant role in exacerbating natural disasters, particularly un-engineered road construction in surrounding villages and the risk of instability in mountainous areas [75,78,81].

Eastern China is impacted by heat waves, and it has been projected that in the future there will be an increase in these waves [92]. This phenomenon shows that, due to global warming, it is important to have various planned initiatives to combat these hazards. Drought is a frequent kind of natural disaster, and it has a huge effect on water scarcity. Due to a lack of water supply, people have a kind of social economic drought due to the unavailability of water [98].

Most disaster risk assessments are in the form of damage and loss to physical assets, but it is equally important to consider distributional impacts and recovery policies. This is further justified as a direct impact, as the destruction of infrastructure is seen as a physical loss. Meanwhile, there is an indirect impact on affected families as they suffer with well-being, emigration, social inequalities, and equity at various levels, especially low-income groups [70,79,82–84,86,88,90,94,102,104–106].

The socioeconomic impact of rainfall in Brazil based on the Social Vulnerability Indices is captured in [55]. It was suggested that rainfall data can be used for various policy implications to design several policies to reduce the vulnerability of populations at risk. It is highlighted that if we consider the underlying causes of disasters, this can help manage prevention through dedicated actions. They study the impact of floods in the city of Grimma, Saxony, in Germany. The risk factor was considered to capture the socioeconomic impact and various causes [66]. Ref. [89] mentioned that due to heavy rain, the socioeconomic impact of landslides in China has severely affected the major population. In some regions, people have midterm and long-term impacts.

Natural disasters are associated with huge socio-economic vulnerabilities, with a huge mass of migration and change in location. After Hurricane Katrina, specifically the low-income group was affected severely, and there were challenges of neighborhood mobility from racial and ethnic diversity [51]. Another study [53] suggested that after the hurricane, New Orleans faced a challenge with migration. This means that in the post-disaster phase, it takes a long time to return to or move to a new place as compared to the recovery stage. There is displacement in the initial phases, and at a later stage, some people choose to

come back, while others might stay away for a longer period. A survey shows that due to Hurricane Matthew, 46% of children stopped going to school due to income constraints [67].

Weather-related disasters need immediate responses, warnings ahead, preparedness, and ample time for recovery. The last stage is the most sensitive one, which is related to emotional and physical trauma, and is the rehabilitation stage. Mainly, public recovery efforts include rebuilding houses and places, and physical health aspects. But it is equally important to consider the changes in mental health perspectives due to individual experiences. Trust and patience were affected by the tornado in Moore, Oklahoma, in 2013. On study collected survey data for about 3.5 months after the tornado and compared the trust and patience of individuals impacted by the tornado with those who were not [54]. The results disclosed high trust of people in government officials, the fire department, and neighbors. The people who were impacted had less patience compared to those who were not directly impacted. Overall, this study suggested that in the future, if the public sector wins the people's trust, this can help to cope with sudden events, and encourage patience regarding traumatic situations.

China suffers from various natural disasters due to its vast territory and complex geographical environment. Every year, the Chinese economy has huge socio-economic losses and severe human health impacts. With the passage of time, China has developed various precautionary measures, but still, agricultural loss is part of its economic growth. Time series disaster data were used by dividing the disasters into various categories, namely storms, extreme temperature, wildfires, landslides, droughts, and forest fires, from 1985 to 2014 [52]. It is concluded that with the passage of time, China is facing more disasters, and this has resulted in huge economic losses. There are various policies of natural disaster management, but they still face some challenges due to geographical variations. Furthermore, the impact of extreme warming was examined, resulting in drought, particularly in the northern regions of China [65]. The authors concluded that there is large-scale population exposure due to increased warming. There are short-term and long-term impacts of earthquakes in the Chinese economy, and these effects vary with fiscal and monetary assistance from the government [71,72,76,85,93].

The agriculture sector has been critically impacted by natural disasters, including loss of livestock, harvest, susceptibility to disease, and destruction of the irrigation system and crops. This further poses various challenges to food security and puts immense pressure on this sector in various economies. With the passage of time, it is necessary to invest in farm-level disaster risk reduction and mainstream it into the planning and policies of agricultural institutions. Most farmers are self-employed, so they have a significant loss of income due to natural disasters and potentially face closure of businesses [69,77,80]. Due to a natural disaster in India, there was a huge impact on mental health as people had post-traumatic stress disorder, adjustment disorder, and depression [73]. Various health trajectories were identified post-disaster due to severe mental distress, frustration, and resource access pressure [90]. Households in more flood-affected districts were highly affected and had no food access [96].

Ref. [56] explores the personal, community, and medical needs of vulnerable populations amid Hurricane Sandy. Self-identified personal impacts through interviews revealed that the evacuated people received urgent support. At the same time, despite warnings, the people who did not evacuate had more medical needs. Furthermore, the respondents agreed that these storms are part of climate change, and that it is necessary for the public to follow the warning instructions given by local authorities. In the context of government-led responses and policy implications, Ref. [57] presents an interesting finding about the Wenchuan Earthquake. The authors mentioned that this earthquake hit a poor mountain area province, and the Chinese government allocated a huge stimulus package on an

immediate basis. This did not just provide relief and rehabilitation support, but it also resulted in increased per capita income in the post-disaster period. It further sheds light on the important fact that government subsidies or financial aid support amid these natural disasters can make people better off and will further reduce the poverty rate. In this regard, Ref. [99] mentioned that global warming and extreme events have a serious impact on both natural and socioeconomic structures in China. But for the past few years, due to effective disaster prevention strategies, direct economic loss due to rainfall and floods has significantly decreased.

Natural disasters pose a wide range of threats to geographic locations and have a huge impact on various communities and populations. The insecurity, disruption, and social and economic loss led to a debate over understating specific social dimensions to understand vulnerability. In Indian coastal areas, there are some short- and long-term challenges that need to be addressed regarding women in fishing communities [58]. By using Socioeconomic and Gender Analysis (SEAGA), it is concluded that the high death toll in coastal families was due to unawareness, as women are not allowed to participate in community meetings. There is also a huge loss of earnings for fishers, which has a direct and indirect impact on their livelihood. The vulnerability of rural households of Odisha in the Indian drought during 2015 is explored in [59]. They determined that the rural communities that were already low-income and facing poverty were vulnerable. There is an urgent need to formulate effective coping strategies to combat the severe effects of these disasters. Moreover, poor economies experience huge impacts as a result of natural disasters, as their households mainly depend on natural resources for their livelihood [63]. Vulnerability means the capacity to cope, resist, and recover from disasters, which is critical for poor households due to their low per capita income.

Overall, the devastating impacts of natural disasters, from fires to cyclones, can change life in a moment. In the context of human well-being, these can cause an overwhelming mix of emotions that take populations more time to recover from compared to emergency relief recovery times. Recently, data insights emerged as a crucial tool in emergency management as they can provide insights for future preparedness and enable authorities intimate make accurate decisions. Data-driven methods enable emergency responses to be enhanced and prompt actions in times of emergency. Capturing disaster data and satellite images can also help to assess traffic, the socio-economic status of affected areas, and rescue activities in certain areas. Not only this, but these facts and figures effectively guide recovery initiatives in reaching the right communities [60–62,68,74,87,91,95,101,103]. In the same context, currently, it is mentioned that due to a significant earthquake in Turkey in 2023, the living conditions and well-being of Syrian refugees have been significantly impacted [100]. They have gone through trauma due to war and are marked by significant economic, psychological, and social challenges.

4. Limitations

There are various challenges in incorporating systematic review research, as we used certain inclusion and exclusion criteria in the current research. There are occasionally different datasets and case studies that generate varied economic impact results and policies in various regions. The unavailability of data in some economies restricts us in making firm judgments about ecosystems and socio-economic impacts. Future studies could consider more economic and geographical elements in conducting natural disaster impact research. Furthermore, economic policies should incorporate relief programs and insurance schemes to assist with damage caused by natural disasters.

Additionally, the inclusion of different socio-economic impacts and disaster management strategies is crucial in terms of region and policies. By understanding the key aim of

this study, confronting the socio-economic impact of natural disasters with the cooperation of the public and private sectors, preparedness strategies can be improved globally. In summary, nations around the globe need to have effective reforms and policies to combat natural disasters. The severity of extreme events has catastrophic consequences on infrastructure and human life, and requires the responsiveness of governments in managing these events.

There are still mixed views on whether the public is responsible and accountable for providing and assisting citizens during an emergency, or whether the community needs to mitigate itself. However, it is suggested that there should be a balance between individual and government responsibility, so that all actors within a society must work together to reduce the impact of natural disasters. The public sector as a center in disaster management risk can also result in community empowerment by having disaster management prepared to manage socio-economic impacts. The author compares varying approaches to the collection and use of evidence and how researchers may influence policy decisions and their implementation. Drawing on large- and small-scale studies conducted in different regions of the world from a range of disciplinary perspectives, this article seeks to unravel the triangular relationship between research evidence, policy, and impact, while paying attention to the tools used to assess impact on, and of, policy. In conclusion, the author considers how coordinated efforts by academics, public, private, and third-sector practitioners across disciplines and national borders might produce stronger evidence and knowledge with which to inform decision-makers, empower citizens, and achieve sustainable development, thereby supporting the needs of present and future generations.

5. Future Scope of Research

This research showcases a detailed understanding of the social and economic after-effects and disturbances due to natural disasters and highlights the necessity of disaster preparedness policies for recovery and rehabilitation. The research findings lead to directions for future research and practical applications, precisely in the context of developing countries. Communities in these developing countries are often most vulnerable. One of the main reasons for further study is to explore the long-term social and economic impacts across different sectors and regions. Future studies can investigate the effect of disasters on housing, education, healthcare, small businesses, and their livelihoods. Future studies have the potential to lead to the design of highly effective strategies that are more targeted towards disaster recovery and sustainable development in post-disaster states. Future studies can include an extension to the European context, which can focus on Italy, which is affected by both floods and earthquakes. Regio-specific or sector-specific studies on sectors such as real estate or retail can be undertaken. Ref. [107] examined how small states can formulate an effective strategy to manage sustainability during natural disasters. The author suggested an innovative fiscal rule to handle climate change that affects long-term debt dynamics. This rule can be applied during disasters, and climate change can be applicable in developing economies to foster the rehabilitation policies and social welfare of communities.

The future scope of this research includes comparing and evaluating policies and programs for disaster management. Rehabilitation initiatives, policy frameworks, and institutional approaches can determine the best practices that may improve post-disaster recovery and lower vulnerability with enhanced resilience. The latest technological integrations, such as Big Data analytics, Geographic Information Systems (GIS), and early warning systems, can give more accurate predictions of the impacts of disasters. A better utilization and allocation of resources can thus be implemented with this powerful system during the recovery and response phase.

Beyond their academic contributions, these research insights may serve policy makers, community leaders, humanitarian organizations, and urban planners to create enhanced and more effective disaster preparedness programs.

By showcasing the relation between natural disasters and sustainable development, this research promotes global efforts towards promoting social equity, economic stability, and environmental stability. This research promotes collaboration among the private and public sectors, leading to innovative approaches towards community enhancement, long-term sustainability, and adaptive potential. The study lays a foundation of evidence-based management of natural disasters by stressing the urgency of addressing social and economic disturbances. This study has the potential to refine policy implications and policy revisions, create policy frameworks, adapt technology, and effectively implement disaster planning and post-disaster management. This, in turn, will support sustainable development worldwide.

6. Conclusions and Policy Implications

It is quite challenging to smoothly manage the effects of natural disasters globally; this relies on disaster preparedness and needs a prompt response. It was highlighted that to cope with the challenges of climate change, it is important to have an advanced urban resilience system [108]. In this context, community awareness plays a very important role, as this will enhance the process of implementation and will lead to better town planning. One study examined the role of participation in managing sustainable urban drainage systems in three case studies of Italy. It was concluded that a participatory approach drives innovation into planning practices and will lead to a literacy path in generating new ideas to combat climate challenges. River floods cause significant socio-economic impacts in Europe. Ref. [109] estimated flood losses between 1990 and 2013 using event-based and integral method approaches. The study concluded the major severe flood losses and proposed a new model to capture the large-scale impact for future disasters. Emergency plans promote a risk resilience culture among the community, which helps to develop risk perception behavior [110]. In addition, various vulnerability factors such as housing quality, socio-economic status, gender, and institutional support can shape perception about risk and affect people's capacity to respond [111]. In this regard, it is mentioned that global warming and extreme events have a serious impact on both natural and socioeconomic structures in China [99]. But for the past few years, due to effective disaster prevention strategies, the direct economic loss due to rainfall and floods has significantly decreased.

Countries within the Southeast Asian region face enormous challenges of floods and their aftermath effects. The Philippines is the world's most high-risk country according to the World Risk Poll (WRP) due to its location [112]. Furthermore, this study concluded that rural areas experienced a greater impact from disasters due to their limited resources and infrastructure. Community resilience and public policies have generated equitable outcomes, but still, there is a huge challenge of income disparities when considering high- and low-income groups. The process of recovering disaster victims through collective action can reduce these inequalities, and this further requires post-disaster socio-economic aspects. Vulnerability during natural disasters always causes socio-economic impacts. The United Nations (UN) has adopted and set clear priorities in light of devastating natural disasters worldwide, known as "the Sendai Framework for Disaster Risk Reduction (2015–2030)". This outlines the targets and priorities in handling natural disaster risk by understanding, strengthening, investing, and enhancing disaster preparedness to reduce their socio-economic impact among nations [113].

To counter the challenges of climate change, sustainable behavior is required. Pro-environmental behaviors and managing eco-anxiety can help to promote problem-solving

and can be used in the adoption of a sustainable lifestyle. One study [114] suggested that there should be educational and awareness programs to foster readiness to change and promote sustainable engagement in any community.

There are an abundance of studies related to disaster management in terms of socio-economic impacts, but still, there is ongoing debate about the link between disaster management and attaining long-term sustainable economic growth. Disaster management leads to enhanced economic growth by reducing economic damage and loss [30]. The recommendations advocated in this study, based on the coastal areas in Bangladesh, suggest that tracking and community-based warnings can greatly reduce damage. Incorporating the correlation between sustainable development and sustainable economy will lead to the development of sustainable infrastructure. Currently, there are various disasters happening globally, so it is important to have in-depth analytical research to document the impact in order to assess the impacts and risks. It is warned that in the coming decades, there will be increased frequency, severity, and duration of extreme events that will pose a huge risk to biodiversity loss [115]. It is necessary to invest in early warning systems, and countries can accelerate the positioning of resilience systems as a key policy implication. The destructive weather in Jamaica, the Philippines, and Vietnam has had lasting impacts on their communities, economies, societies, and ecosystems [116].

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