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# Analysis and Evaluation of Trends in Natural Disasters

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## Abstract

**Aim:** The aim of this article is to examine the terminology behind natural disasters and to group them together to give readers an insight into the world of natural hazards. The author also aims to describe the quantitative changes that have occurred in recent years.
**Methodology:** The definitions are based on the presentation of concepts used by key authorities. Categorisation and trend analysis is based on international discourse, databases and reports from relevant bodies and organisations.
**Findings:** The security environment is changing dramatically. One reason for this is that there is a clear increase in a number of categories of natural events (disasters). As regards definitions, there is no uniform concept, but disasters are exceptional events with significant material damage.
**Value:** Through the author's analytical and evaluative work, the reader will gain insight into the world of natural disasters, a broad knowledge of the relevant literature, and valuable insights into global vulnerability and changing trends.

**Keywords:** security, natural disasters, trend analysis, disaster typology

## Introduction

The 20th century was the century of ecological[1] and human[2] *(*world) crises (Wolfers, 1952; Bundy, Pfarrer, Short & Coombs, 2017; Vőneki Tamásné, 2020)

1 Depletion of non-renewable natural resources, finite reserves of fossil fuels and minerals, degradation due to overuse, limitation of freshwater resources, loss of biodiversity, the accelerating rate of climate change, increasing trends of natural causes, etc.
2 Overpopulation, unequal distribution of population – demographic pressure, (extreme) poverty, famine, illiteracy, lack of education; increasing mass of refugees, armed conflicts, urbanisation, dependence on critical infrastructures, etc.

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that came to the centre of attention (Matthews, 2011) with critical voices and the disintegration of the bipolar order (Buzan, 1991; Rothschild, 1995). These have become one of the centremost issues of the 21st century. Crises, threats, risks – they all have an impact on security and can generate several civilisational conflicts and disasters. In spite of the technological and technical progress of the 21st century, it has not yet been possible to reduce the factors affecting safety (Siposné Kecskeméthy, 2014). The reason for this lies in the radical and unsustainable need to maintain human living standards (see consumer society – 'homo shopiens'), the necessity of continuous economic growth and development (based on Maslow's motivational theory), which result in newer and newer problems (Maslow, 1943). This is a so-called 'vicious circle', which is not only self-stimulating (so-called positive feedback), but also incoherent and incapable of fulfilling global goals, as a result of which the loss of human control over global processes increasingly prevails.

Humanity is threatened by a series of natural and civilisational disasters that can only be averted or addressed on a global scale through joint action programs (Hetesi & Kiss, 2018). It should be noted that human beings will be the ones who, through their activities, will (a) amplify natural influences, (b) cause anthropogenic crises, (c) create hybrid challenges (Hajnal, 2006; Teknős, 2015; Fülöp, 2018). The occurrence of events of natural origin has a significant impact on everyday life in itself, however, the following questions must be asked: with the expansion of the built environment, is not man the most responsible for the increase in damage caused by natural disasters, since with the construction, the modern order of life, they own or occupy places whose risk of disasters is already high? Is it right to blame everything on natural disasters? Or can human activity itself be the input to the growing trends of natural disasters? Can it happen that we are our own enemies by the anthropogenic 'control' of natural processes, by the wrong choice of location, by the way of life? There are several questions to which this publication seeks the answer.

The purpose of this publication, taking into account the analysis of the relationship between natural disasters and security, the identification of individual typing methods, studying the causes of the global and European vulnerability which cause individual disasters, and the analysis of them, the international trend changes, theoretical and practical issues, the presentation of risk-based approaches.

## Terminological study of disasters

Before analysing the trend changes of disasters, it is essential to study the conceptual background, on the one hand, as their properties are easier to identify, typing is easier to implement, on the other hand, the effects on security, society and the economy can also be identified, and on the whole, they help to make the structure and content development of this publication more transparent. The first related question is, what are we dealing with?

The interpretation of the concept of disaster also differs from continent to continent, and from region to region (Scanlon, 2005; Palaganas, Sanchez, Molintas & Caricativo, 2017). The debates around the definitions of disasters, and the various aspects related to the definition help to fine-tune the concept, which supports itself. The methodological understanding of disaster science research methods for the interpretation of the concept of disaster, several internationally recognised experts have already laid down in relevant works several decades ago, which are quite different in content, of which the following examples can be mentioned (Quarantelli, Boin & Lagadec, 2017). Disasters or serious events that have influenced the social, and subsistence conditions and chances of survival of a community for a long time, easily upset the social order (Teknős, 2022). A sudden major disaster, the date of which is unexpected and has serious consequences, can take several years to restore and rebuild the affected area.

Natural disasters occur under the influence of natural forces and are generally inevitable. Perhaps the 'most unexpected' and overall the most costly in terms of loss of human lives and resources (Sena & Woldemichael, 2006; Sawasa & Zen, 2014). Natural disasters are complex events in which people are exposed to several risks and threats. The list of natural disasters includes events and causes such as tropical storms, extreme heat or extreme cold, winds, floods, earthquakes, landslides, and volcanic eruptions. Man-made disasters include traffic accidents, industrial accidents, emissions of hazardous substances, accidents of nuclear nature, and, in general, effects due to anthropogenic activity (pollution of environmental elements, wars, mine explosion, soil, extraction, urbanisation, etc.). Each disaster scenario is unique in its own way and presents new and unusual challenges for victims, rescuers, and governments alike.

## Examples of disaster typing

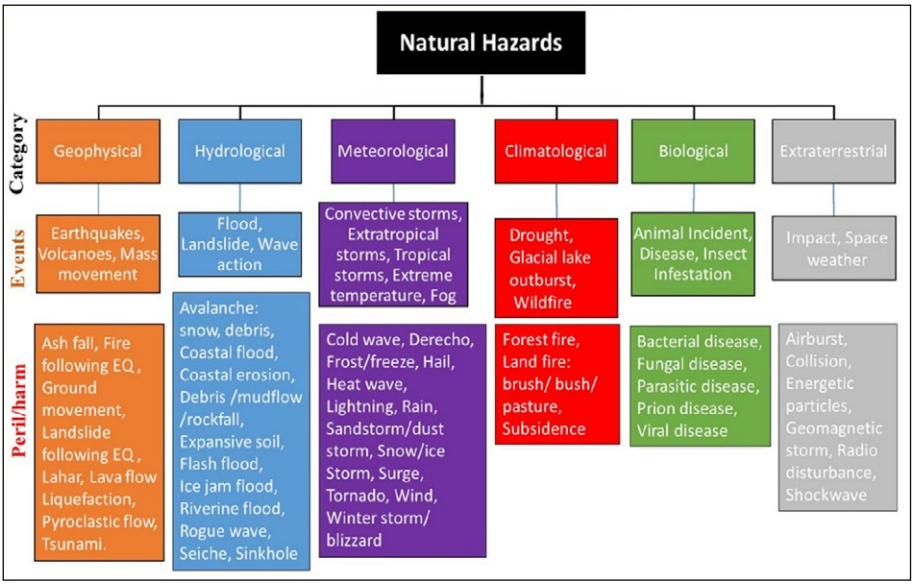
The threat itself is the root cause of a disaster. In this context, a threat is an event or phenomenon, or its more extreme variants, that can have a negative impact

on the economy, society, and the environment, involving both natural and related human factors (Strömberg, 2007).

An extreme phenomenon basically means an unusual event. For instance, climate extremes are considered when the value of a given weather or climate variable falls towards (or below) the threshold value (significantly different from the usual one), close to the upper (or lower) limit of the value range of the observed variable. A climate hazard is a hazard arising from long-lived atmospheric processes that can be interpreted on a meso-macro scale, the duration and nature of which can be intra-seasonal or even several decades. In addition, the geophysical (geological) hazard should be mentioned, which is a hazard derived, for instance, from surface or mass movements. Its most well-known types are volcanic eruptions, earthquakes, etc. A hydrological hazard is a hazard arising from the distribution, movement, and occurrence of fresh and brackish waters above and below the surface of the Earth. A biohazard is a hazard caused by exposure to living organisms and/or to toxic substances caused by them, or to diseases transmitted by vectors. An extra-terrestrial hazard is a hazard caused by asteroids, meteorites, and comets passing near the Earth, entering or impacting the atmosphere, or an interplanetary condition that affects the magnetic field, ion- and thermosphere of the Earth.

According to Sawada (2014), disasters can be divided into four groups. The first group is of natural categories, which can be further divided into sub-categories, which are as follows: hydrological (floods), meteorological (typhoons, storms), climatic (droughts), geophysical (earthquakes, tsunamis, volcanic eruptions) and biological (epidemics, insect invasions). The second group includes technological disasters, such as industrial accidents or traffic accidents (air, rail, road, water). The last two disaster groups are classified as man-made, including economic crises (hyperinflation, banking, and currency crises), and acts of violence (terrorism, civil strife, or war) (Sawada & Zen, 2014).

**Figure 1**
*Example of the International Classification of Natural Hazards*




*Note.* Chaudhary–Piracha (2021).

Figure 1 shows an example of the international classification of natural hazards. The creators of the figure are distinguished faculty members from the University of Kuwait, as well as the University of Sydney. Considering their division, natural hazards can be divided into six parts, to which additional, specific events are also assigned. According to Chaudhary and Piracha, natural hazards can be classified as geophysical, hydrological, meteorological, climatic, biological, and extra-terrestrial. The right column of the figure may still seem alienated, however, the effects of space weather, solar activity, and events generated outside the last sphere of the Earth all affect the rest of the atmosphere.

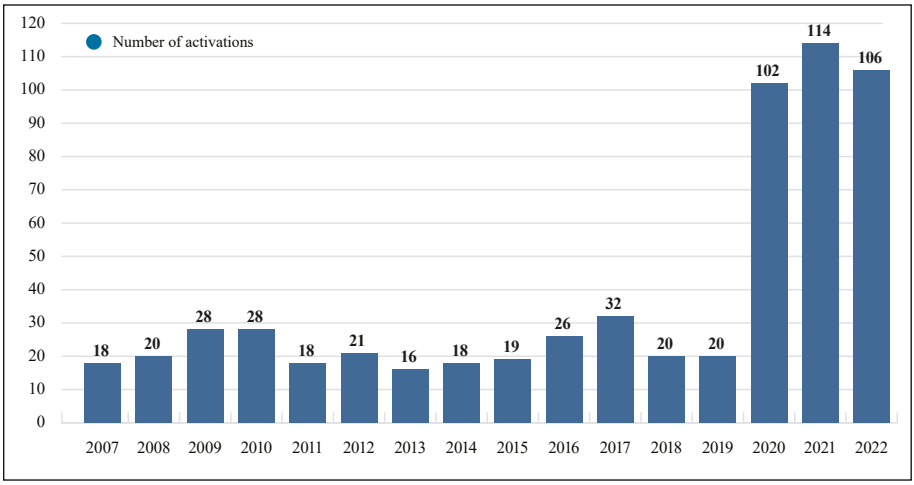
## Analysis and evaluation of trends in natural disasters

The quality of disaster registration and data collection has also improved in recent years (Kopcsó & Balázs, 2016). Certain organisations and researchers refer to databases containing disaster events, their analytical and evaluation activities, and risk assessment procedures to declare that disasters occur more often in space and time, with greater destruction.

The author conducted the trend analysis along the lines of the activation of the EU civil protection mechanism, based on the database of EM-DAT reliefweb/ UNDRR on a global and European level.

**Figure 2**

*Activation of the EU civil protection mechanism according to hazard categories, 2007–2022*



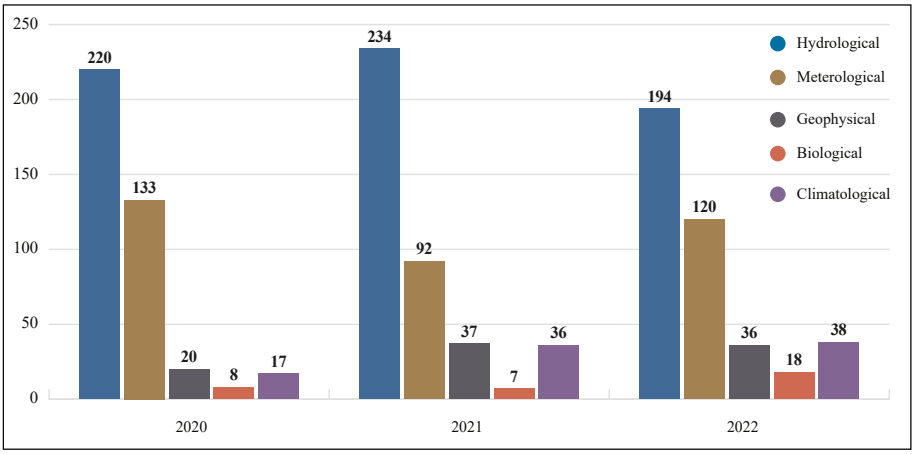

*Note.* Author's edit (URL1).

Figure 2 shows the activation of the EU civil protection mechanism between 2007–2021. The mechanism is based on the Treaty of Lisbon, which aims to support the civil protection tasks of the member states. In addition, resolution no. 1313/2013/EU of the European Parliament and of the European Council on civil protection mechanism adopted in 2013, covering the protection of people, the environment and property, including cultural heritage, in the event of any natural or man-made disaster occurring inside or outside the EU, including environmental disasters, marine pollution, and acute health emergencies (Nováky, 2019). For each of these disasters, civil protection and other emergency assistance may be requested under the EU mechanism to complement the response capabilities of the country concerned. In the case of disasters caused by terrorist acts or nuclear or radiological accidents, the EU mechanism should only cover disaster preparedness and response measures covered by civil protection.

The individual years in the figure show the years 2020 and 2021 having a significant number of activation compared to other years. Although it is not shown in the figure, in 2020, out of 102 cases, 85 (meaning 83.33%), and in 2021, out

of 114 cases, 73 (meaning 64.03%) are related to the COVID–19 epidemiological situation; in 2020, 17 cases (meaning 16.66%), and in 2021, 41 cases are due to other causes of natural and anthropogenic origin. Looking at the average for the 2007–2019 period, it represents 23.66 cases of activation, the 'Other' category of 2020 with its value of seventeen is even considered below average, although the year 2021 (with 43 cases of activation) already shows the highest number of activations for 'Other natural events' since 2007. The increase in 2020 is 85 cases, while in 2021, it is 73 cases. As a reason, forest fires, volcanic eruptions, and marine pollution can be noted. In 2022, there were 106 activations registered, of which 56 were linked to the COVID–19 pandemic. The remaining activation value of fifty can be considered a record. In addition to the 106 cases, there were also 126 requests for assistance due to the Russian-Ukrainian conflict, as in 2022, Ukraine submitted 126 requests for assistance to the Emergency Response Coordination Centre (ERCC) after activating the Union Civil Protection Mechanism (UCPM) shortly before the start of the Russian attack. Due to the current epidemic situation, all three years are considered extreme and extraordinary from the point of view of protection and crisis response measures (as a result of ordinary natural events, the COVID–19 pandemic, and the Russian-Ukrainian conflict). Should anything positive be mentioned in relation to the coronavirus, it may certainly be related to the development of guidelines for the civil protection mechanism, since in the current budget period, a number of tasks (prevention, preparation, intervention, recovery) have been assigned, to which financial resources have been allocated. This clearly increases the availability and effectiveness of assistance at the member-state level (within Europe) and globally (outside of Europe).

**Figure 3**
*Breakdown of natural events by category in 2020–2022*




*Note.* Author's edit based on EM-DAT data.

Figure 3 shows the breakdown of the natural events that occurred in 2020–2022 by category, according to the EM-DAT database. Hydrological events clearly occur the most often in all three years, however, in general, the distribution rates of the examined years are approximately the same. Adding up the events shows 398 events of natural origin in 2020, and 436 events of natural origin in 2021. On the one hand, this confirms the topicality and relevance of the research topic, as well as the claim that hundreds of natural disasters occur every year around the globe. Between 1900 and 2022, a total of 16,529 events were recorded, which, considering the average, is 135 events per year, nevertheless, Figure 5 also depicts that it was not yet possible to describe so many events in the initial period of recording, which is (a) likely due to the methodology of recording the events in the database, (b) more relevant due to the increasing trend. Anyhow, most events are related to the hydrological group (mainly floods or flash floods), which is followed by the meteorological (e.g. storms), the geophysical (earthquakes, etc.), the climatic (temperature, drought, forest fire), and eventually the biological groups.

Figures 2 and 3 show that an international disaster assistance system is absolutely necessary, i.e., in terms of risks and requests for assistance. It is essential that (a) the given country has its own power, which means its own system of protection against disasters, (b) from its own power it is able to offer certain internationally standardised modules and capabilities in order to achieve success of joint action against a disaster that occurs (Fleischer, 2007; Petz, 2016).

Global statistics include EM-DAT, Sigma, and NatCatSERVICE (Kron, Steuer, Low & Wirtz, 2012; Kousky, 2014; Etkin, 2016). As seen based on the above, there is no uniform terminology methodology for the concept of disaster, and no two disaster management methods are the same, so there will be no identical methodology for global databases.

**Table 1**
*Examples of databases containing data on international disasters*

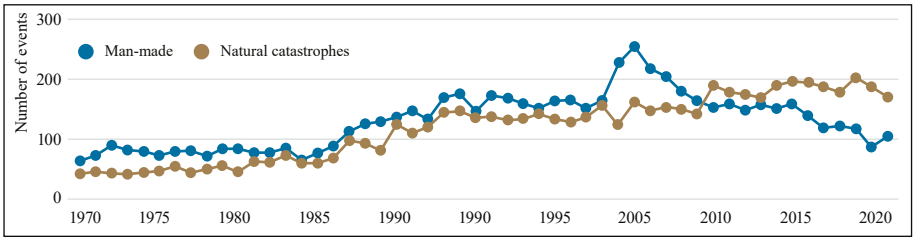
| Database name | Collected data, characteristics | Database accessibility | Availability |
|---|---|---|---|
| CRED (Centre for Research of the Epidemiology of Disasters) EM-DAT (Emergency Events Database) | Disaster events, where: at least ten deaths were reported; more than a hundred people were affected (who needed emergency assistance); a state of emergency was declared or international assistance was requested | publicly available | www.emdat.be |
| Swiss Re-like Sigma | Disaster events, where: total loss exceeded 86.6 million USD (on the value of USD in 2010); insurance loss exceeded 43.3 million USD (on the value of USD in 2010); at least twenty people disappeared or died | publicly not available (statistical analyses only) | www.swissre.com/sigma |
| Munich Re-like NatCatSERVICE | Disaster events, where: people were injured or property damage occurred | publicly not available (statistical analyses only) | www.munichre.com/natcatservice |

*Note.* Kiss, 2015.

The table shows that there are three international databases available for the analysis of disaster data. EM-DAT and open, accessible data from NatCatSERVICE were used. Unfortunately, Sigma requires a subscription, so this publication does not deal with it in detail. A review and statistical analysis of the data of EM-DAT and NatCatSERVICE provide sufficient information on the frequency of occurrence of the causes that brought each disaster about, as well as the losses of the population and material assets.

The Explorer database, maintained by the Swiss Re Institute, provides quantitative data on natural and man-made disasters, the number of victims, insurance, and other losses (Papp, 2020). The database uses data from newspapers, the so-called Lloyd list, primary insurance and reinsurance journals, internal reports, and online databases.

**Figure 4**
*Annual distribution of natural and man-made disasters between 1970 and 2021*

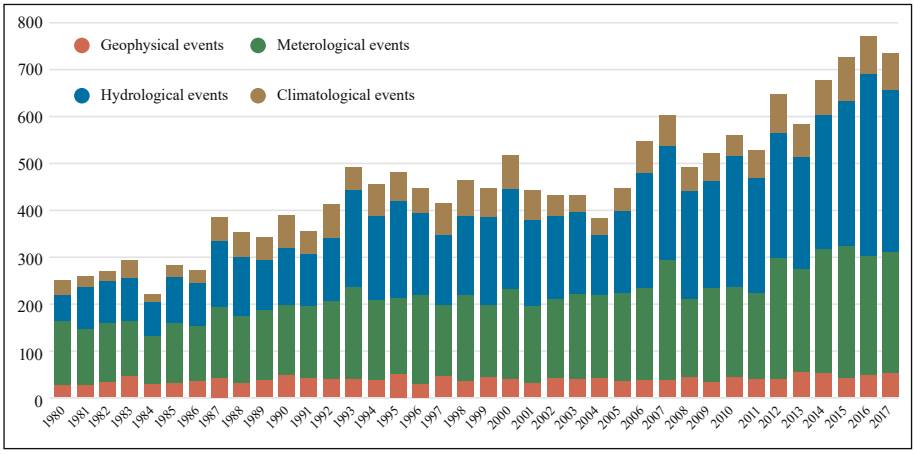



*Note.* Swiss Re Institute: Sigma. Swiss Reinsurance Company.

Figure 4 shows the annual occurrences of natural and man-made disasters. In 1970, there were 43 natural disaster events and 63 man-made disaster events according to the database. In 2021, these numbers were 170 for natural events and 105 for man-made events. In the case of natural disasters, they clearly occur more often, i.e., it shows an upward trend.

The following database belongs to the Munich Re Institution's NatCatSERVICE database. It contains far more events (at least 15,000) than Sigma. NatCatSERVICE takes its data from insurance-related media and publications, agencies, governmental and non-governmental organisations (Reuters, IFRC, OCHA, USGS, etc.), media reports, related literature, as well as customers and branch offices of Munich Re.

**Figure 5**
*Number of natural disasters registered worldwide (pieces - pcs) between 1980 and 2017*



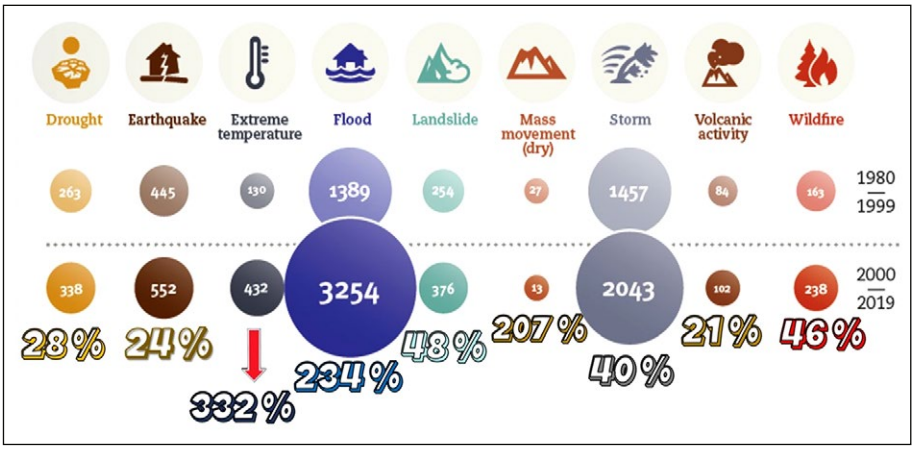

*Note.* NatCatSERVICE (URL4).

Figure 5 shows the numbers (pcs) of natural disasters registered worldwide between 1980 and 2017, based on NatCatSERVICE data. For the studied data series (years) of nearly four decades, different event numbers are indicated, based on which *it can be stated* that all natural events since the beginning of the recording itself (1980) have tripled by 2017. Although looking at each year, there are outliers (1987, 1993, 2007, 2012, 2016), a year with fewer events (1984, 2004, 2008, 2017), however, the figure clearly indicates an upward trend. Considering the individual categories, however, there are differences. For two of the four disaster groups, absolute elevations can be measured, with the dominant nature of hydrological events, followed by those of meteorological origin. As for hydrological events, between 1980 and 1986, there were about a hundred events per year; as of 2015, this number exceeds three hundred. While meteorological values between 1980 and 1992 are between one and two hundred, from 2012, it no longer falls below two hundred, and as of 2014, it rises above three hundred. A constantly growing trend can be seen here as well. There is a slight increase in the climate category, however, in the geophysical category, the years seem stagnant, sometimes more and sometimes fewer recorded events. 43 percent of all events are concentrated in Asia, and for Europe, it is 12 percent. According to the Munich Re Insurer, losses from the natural disaster rose in 2020 to $210 billion worldwide, compared to $166 billion in 2019 (URL2).

The following database is the International Disaster Database (EM-DAT) coordinated by the Centre for Research in the Epidemiology of Disasters (CRED). It obtains its data from UN organisations, the US government sources, the IFRC, research centres, the Lloyd list, as well as reinsurance sources. In terms of obtaining data, EM-DAT is the most reliable source; relevant international publications also prefer to use EM-DAT data (as it has more than 25,000 items). The database considers a disaster (event to be recorded) where one of the following criteria is met: (a) at least 10 deaths, (b) at least 100 affected, (c) a state of emergency (or a special legal order in accordance with the specific legal framework) is declared, (d) an international request for assistance has been made.

According to the analysis provided by EM-DAT, the four most common types of disasters in Europe and Central Asia are floods, windstorms, earthquakes and extreme temperatures (Kiss & Ambrusz, 2021). Climate change is a natural phenomenon whose current, accelerating pace (in terms of change) is affected by human activity (O'Brien, O'Keefe, Rose, & Wisner, 2006). According to the reports of the Intergovernmental Panel on Climate Change (IPCC), this natural process is influenced by human activity (air pollution, logging, technosphere, surface transformation, urbanisation, globalisation, the lifestyle of developed countries, etc.) and has an impact. Climate change – is one of the greatest challenges of the 21st century, as well as a global issue.

**Figure 6**
*Figures (pieces - pcs) of natural events and their relative proportions in the periods between 1980-1999 and 2000–2019*




*Note.* Author's edit based on UNDRR data (URL3).

As Figure 6 shows, certain events of natural origin depict growth. In the period 2000–2019, there is a quantitative increase for all types of events studied. This is significant in terms of extreme temperatures (332 percent), floods (234 percent), and rock falls (207 percent). During both periods (i.e. nearly forty years), floods and storms occur orders of magnitude more times than the other seven types of disasters (Teknős & Debreceni, 2022).

In 2020, according to Sigma data, natural disasters caused 81 billion dollars (about 25 thousand billion Forints) of insurance loss. The value of all damages is $202 billion (HUF 62.620 billion). Early in the 1970s, insurance companies recognised the need to track the causes of disasters and collect data and aggregate the results of administrative tasks after damage incidents (Jaffee & Russell, 1997). The 2018 UN Office for the Coordination of Humanitarian Affairs (UN OCHA) report lists floods, droughts, earthquakes and storms worldwide as of 2010, of which floods accounted for the highest number of cases until 2016, but as of 2017, storms have outnumbered floods in terms of event numbers. According to the report of the World Meteorological Organisation (WMO) in August 2021, between 1970 and 2019 in Europe 159,438 deaths and $476.5 billion in economic damage occurred due to 1672 disaster events. Floods (38 percent) and storms (32 percent) were the most common causes of recorded disasters, but extreme temperatures also caused the most deaths (93 percent) in the last fifty years, causing the loss of 148,109 lives.

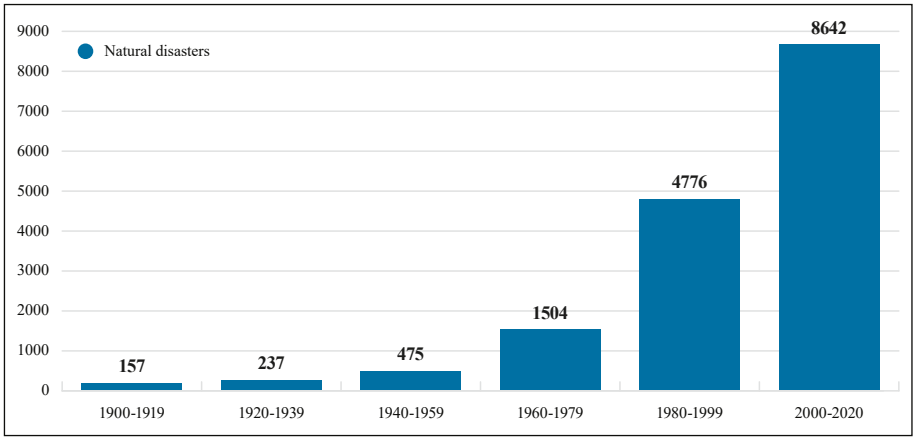
**Table 2**
*Events of natural origins 2000–2020*

| Type of disaster (2000–2020) | Occurrence (pieces - pcs) | Total deaths (persons) | All concerned (persons) | Economic damage (USD) |
|---|---|---|---|---|
| Hydrological | 3858 | 129,138 | 1.68 billion | 614 billion |
| Meteorological | 2611 | 373,762 | 869 million (0.869 billion) | 1340 billion |
| Climate | 595 | 22 871 | 1.45 billion | 216 billion |
| Geophysical | 688 | 723,294 | 125 million | 555 billion |
| **Total** | **7748** | **1.35 million persons** | **4.15 billion persons** | **~2700 billion** |

*Note.* Author's edit based on EM-DAT data.

Table 2 shows disasters that occurred between 2000 and 2020, sorted by type (excluding the biological). The data was retrieved from the International Disaster Database, in which the four most common variables were assigned to each subtype, such as *occurrence, total deaths, all affected,* or *economic damage*. High mortality figures *can be seen*, with an abundance of property damage. This absolutely realises, for example, the disaster risk reduction focus set out in the Sendai Framework Convention as an implementation task.

**Figure 7**
*Presenting the quantitative variables of natural disasters that occurred between 1900 and 2020*



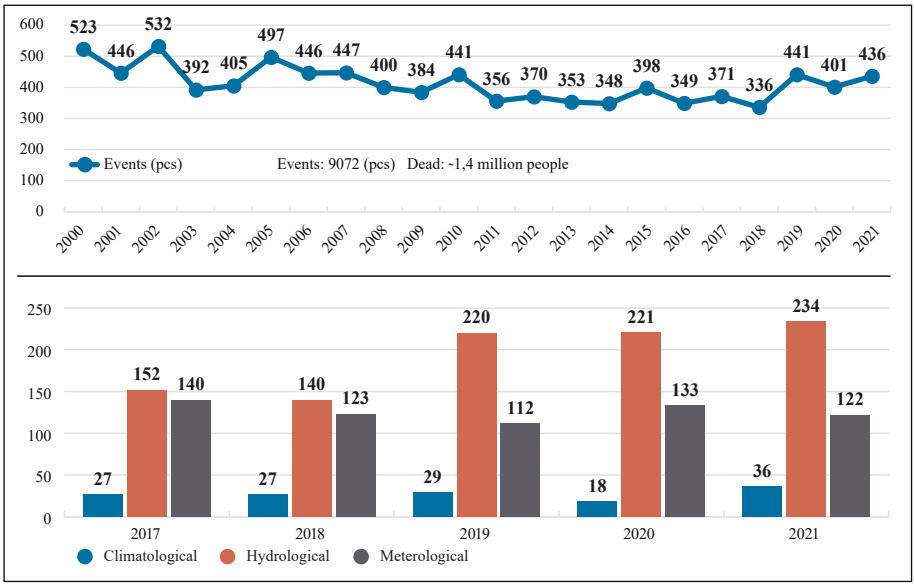

*Note.* Author's edit based on EM-DAT data.

Figure 7 shows the quantitative changes in natural disasters that occurred between 1900 and 2020, broken down into twenty-year phases. In addition to the

bar chart, the degree of the upward trend can be better seen in the line chart. This is an increase of about fifty-five times. Of course, these statements should also be treated with caution, since the immersion (120 years) is very large, and the level of development and data collection of the 1900s is not necessarily the same as today, so it is likely that the methodology of data collection and the willingness to register the event has also changed over the decades. Nevertheless, if the data does not give a completely real picture, since, for instance, let us take a look at it from 2000 (see Figure 6), then as many natural events were annually recorded as in Figure 7 between 1900–1940, the possibility of growth itself is still demonstrated. This is supported by data from both NatCatSERVICE and UNDRR, and therefore, the trend is rising on the basis of data drawn from either database, especially over the last twenty years. The quantitative indicators increase several times compared to each chosen period.

**Figure 8**

*Number of events of natural origin between 2000 and 2021 (up) and their distribution in the last five years, looking at three categories (down)*




*Note.* Author's edit based on EM-DAT data.

The upper figure, after analysing the data obtained from the EM-DAT database, shows the events of natural origin recorded worldwide in an annual breakdown between 2000 and 2021. The topicality of the research is definitely supported

by Figure 8 since – slightly rounded – at least 350 events occur around the world every year. In terms of the average of 22 years, this means 412 events, in terms of the last years they can be considered above average, in fact, looking at the years 2000, 2002 and 2005, the average of the three years is already 517 events, which is an increase of 125 percent compared to the whole average. However, the game of the numbers is not so fictitious, as the accelerating rate of warming has a number of physical consequences, as further temperature increases in the upper layers of the seas and oceans result in tropical cyclones and hurricanes; drought can result in forest fire risks; changes in cyclone activity can sometimes result in extreme precipitation, sometimes in a different heat than the average. The intensity of tropical storms can increase, causing problems in coastal settlements due to the larger waves, yet with the rise in sea level, even the force of storms does not need to increase, since a current medium storm with a rise in sea level of about one meter can have extremely destructive effects. What is currently challenging is the number of people who died. In the twenty-two years studied, about 1.4 million people died as a result of an event of natural origin (in the EM-DAT there is no distinction between the number of people who died immediately or those who died weeks later due to injuries). Both the 2005 Hyogo and the 2015 Sendai Framework Agreements aimed, and still do, to reduce this astonishing number on both national to global levels. This is the basis for the transformation, modification, and further development of more prevention-centric disaster management and disaster management systems that seem commonplace. Although a positive thing can be read from the bottom figure, namely that there are apparently periods when fewer events have occurred. The formation of those of natural origin, as the name implies, can be associated with natural processes, that is, it is formed independently of human activities so that prevention or coordination of the probability of formation is not as simple as anthropogenic (technical, industrial, social, etc.), therefore, the preparation, preparation period and task of the disaster management cycles described several times in the previous chapters will be given special attention. Focusing on such research is also recommended. Unfortunately, natural processes are certainly influenced by humans through their various activities, the maintenance of the quality of life has an impact on the micro and macro environment, so the author is of the opinion that there are already human factors in the development of several natural disasters. On the upper part of Figure 8, three categories (types) were selected by the Author, the last slightly more than five years (i.e., from late 2017 until 9 June 2022), in addition to the ratio of hydrological, meteorological and climatic events to each other, examined their annual occurrence

figures. It is clear that, in line with the usual trends, hydrological events occur most often on Earth in the form of serious events or disasters, followed by meteorological and finally climatic events. In the case of hydrology, from 2019 it shows slightly increased values compared to previous years, which realises the importance of protection against water damage and the real risk of water-related conflicts, and the importance of other environmental crises (Wolf, Stahl & Macomber, 2003; Teknős & Kóródi, 2016; Falkenmark, 2022; Szöllősi-Nagy, 2022).

## Conclusion, results

The present publication dealt with examples of the causes of natural disasters. It can be concluded that at the international level, the division into two categories is accepted. Although at the international level, the civilisational origin used in Hungary is called technology by several authors dealing with typing, according to the classification example created by the author of this publication (Figures 3 and 4), technology can only be a sub-part of the civilisational, the artificial (civilisational) itself has a larger framework of interpretation, one of the elements of which are the dangers of technological, industrial origin. If we break down anthropogenic events into technological (accidents) only, those of a social nature, armed conflicts, other biological hazards, etc. can be excluded.

After the typology, the author turned to the study of trends in natural disasters and events. The author analysed thousands of data from several databases and presented the results through tables and figures. Based on the analysed data of the years studied – from 1900 to 2022 – it is ascertainable that there are increasing trends in the case of hydrological disasters (floods), in the case of meteorological disasters (storms) and in the case of climatic (forest fires and extreme temperatures). In the geophysical category, there is no increase in earthquakes, yet it is ascertainable that most deaths are caused by this type of natural event.

The author states that the fact that there is an increase in the number of natural disasters and events on an international level is confirmed more specifically for the following types of events: floods, rock falls, forest fires, earthquakes, droughts, and storms.

In the case of natural disasters, while disasters in poorer regions usually cause more deaths with less material loss, in the case of richer countries it is the opposite: there is a more significant loss of economic and material assets, the number of deaths is orders of magnitude less than in the case of poorer countries. This is

due to three reasons: (a) different protection capacities, i.e., different protection options against disasters, (b) different official and regulatory measures taking into account the previous one, (c) demographic and property characteristics related to the standard of living.

The achievement of international targets for disaster management and disaster risk reduction in itself entails significant financial expenditure and resources, conflicts and other security policy events affecting security, and national defence spending all raise funding issues that may delay the feasibility of disaster management prevention-centric measures.

Overall, a disaster is an event that, in the vast majority of cases, is sudden, unexpected, and has significant destruction and/or harmful consequences. The incidence of disasters worldwide is constantly increasing, with their devastating effects affecting more and more people, causing death, suffering, and significant economic damage (Kopcsó & Balázs, 2016). One of the reasons for the increase (but not always) is climate change. There is a likely link between climate change and natural disasters (Macapayag & Misic, 2015), with some types having excitatory effects in terms of incidence and intensity (Teknős, 2015). There is also a link (Busby, 2007; Mach et al., 2019); between climate change, armed conflicts (Barnett, 2003) and security, which affects the effectiveness of disaster resilience. A number of ecological and human world crises have been identified that, without global actions, reduce the conditions for survival in addition to the standard of living of humanity.

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