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## NATURAL DISASTERS AS A CAUSE OF EMERGENCY SITUATIONS FROM THE SECURITY AND LEGAL ASPECT

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**Abstract:** *Nature strikes back at us, that is now completely clear. Since the emergence of civilization, man has sought to subordinate nature and to restrain its indomitable temperament, subordinating it to his own, often opportunistic needs. Also, nature has often been exploited beyond its limits of endurance, to its detriment and with open and often unjustified nihilism. Nowadays is the time for nature to collect its claim from humanity. Payment is made through frequent natural disasters and catastrophes, which begin to affect the whole world equally. There are more and more frequent weather disasters, earthquakes, fires and floods, and the reason for that should be sought in climate change, which occurred as a direct consequence of human actions.*

*The paper will not go into the problem of natural disasters, but the way to act in case of their occurrence. Humanity must build defense mechanisms against new weather conditions and protect itself from great consequences in the sense of human sacrifice and material damage. Also, adequate measures must be taken to prevent unforeseen weather situations and harmful consequences.*

**Key words:** *Disasters, floods, fires, crops, emergency, damage.*

## INTRODUCTION

Natural disasters are those events that are directly affected by natural forces. They manifest as floods, fires, storms and hurricanes, avalanches, landslides and landslides, volcanic eruptions and the like. All natural disasters can be classified into geological, hydrological and meteorological.

Geological disasters include avalanches and landslides, earthquakes, sinkholes and volcanic eruptions. Hydrological disasters include floods, limn eruptions and tsunamis, while hydrometeorological disasters include blizzards, cyclonic storms, major droughts, thunderstorms, hailstorms, heat waves and tornadoes.

Avalanches and landslides involve the movement of large amounts of land, rocks and other contents that are on the surface soil. Movements usually take place from higher to lower areas, carrying everything in front of them and doing great damage. Earthquakes can be defined as seismic vibrations, caused by the sudden release of energy within the Earth itself. They arise as an underground activity, with a point of focus, called the epicenter. The sinkholes are a direct consequence of human exploitation, mostly mining, which contributes to the creation of severe erosion of surface soil layers. They are especially affected by higher and more abundant precipitation, which accelerates the formation of sinkholes. Volcanic eruptions include volcanic exploding, which are very dangerous for people and property, as well as flora and fauna. On that occasion, the so-called volcanic clouds, which over time settle in nearby parts of the earth, near the eruption, and in combination with water form a hard mixture, which resembles concrete. The resulting mixture is very dangerous for buildings, it is harmful to human and animal health and the soil, as well as sources of drinking water.

Hydrological disasters include floods, as a very dangerous problem, which causes emergencies and danger to human lives and flows. Flood can be defined as temporary covering of the soil with water, and it occurs due to the increase in the amount of water in rivers, seas, oceans and other streams. Floods usually occur seasonally and are directly conditioned by certain natural phenomena, such as melting snow or atmospheric precipitation on a larger scale. Floods can be smaller,

when they affect mostly uninhabited or less populated areas, and they can be larger, when they endanger the safety of larger settlements and urban areas.<sup>1</sup>

Limnic eruptions are caused by the action of carbon dioxide, which erupts in large quantities near water surfaces, thus polluting the water and endangering the fish world, but also others who use water. As a much greater danger of limnic eruptions, tsunamis occur, which cause large waves, the height of which exceeds several meters, and which are suitable to cause greater consequences for the safety of people and property.

Meteorological catastrophes are increasingly present nowadays and represent one of the most real dangers of modern humanity. They are usually manifested through extreme weather conditions, which are characterized by either extremely low or extremely high temperatures, as well as unconditional weather conditions, suitable to endanger the safety of people and property. Here, the so-called blizzards, or winter storms, accompanied by more snow and very strong winds. Blizzards can have a very dangerous effect on people's lives and health, but they can also have serious consequences in agriculture, destroying winter crops and can lead to paralysis of people's economic activities, interruption of electricity supply, flooding of roads and the like. On the other hand, cyclonic storms, tropical cyclones, hurricanes and typhoons are common in ocean areas. They are characterized by extremely strong winds, as well as rotating action with low pressure and spiral thunderstorms with heavy rain. They develop in the ocean areas under the action of hot water evaporation, as a result of which cloud massifs develop in the process of condensation. However, especially lately, cyclones are starting to appear in areas that are not characteristic of them, such as the area of Europe and the northeast of the planet. The reason for their occurrence should be sought in large horizontal temperature contrasts.

Strong thunderstorms also correlate with cyclone storms, which can be caused by certain geological activities. These storms are characterized by extreme thunderstorms and lightning strikes, which can significantly endanger the safety of people, property and agricultural products. Also, hailstorms are a dangerous

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<sup>1</sup> Dimitrijević, S. *Poplave kao ekološki i tehnološki rizik*, Fakultet zaštite na radu, Niš, 2019, str. 20-21.

natural phenomenon, characterized by a storm accompanied by ice, which is suitable to endanger the safety of people, property and agriculture.

Meteorological changes that are directly related to human activities and their nihilism towards nature are the greenhouse effect, which raises the air temperature on the planet from decade to decade. Therefore, droughts and heat waves occur as a consequence. Drought is caused by rare and irregular precipitation, which leads to significant drying of the soil, water supplies and constant evaporation of moisture from soil structures. This phenomenon has the direct consequence of the disappearance and extinction of certain plant and animal species, which are not adaptable to such living conditions. In the long run, droughts lead to a shortage of drinking water, which directly threatens the survival of humanity. Heat waves have been appearing more and more lately. They are characterized by extremely high air temperatures and are limited by a certain duration. While they are present, they cause extreme heat, which lasts day and night (tropical nights), and are usually accompanied by a strong hot type of hot wind. These are temperatures that exceed 40 degrees Celsius, and during these waves, forest fires usually occur that endanger people's lives and property.<sup>2</sup>

## 1. CIVIL PROTECTION - CONCEPT AND MEANING

The very notion of civil protection is mostly related to the period of communism and socialism in our country, because this principle worked best at that time. It was established in that period and functioned very successfully. Civil protection could be defined as the protection of collective interests through the application of measures and tasks by civil protection commissioners, their deputies and civil protection units.<sup>3</sup> The activity is realized through observation, informing and alerting. In order for the activity of civil protection to be performed in an adequate way, it must have trained and competent staff, which consists not only of natural persons, but also certain organizations, such as rescue, humanitarian and

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<sup>2</sup> Milošević, M. *Šumski požari i mere zaštite*, Fakultet bezbednosti, Beograd, 2016, str. 12-14.

<sup>3</sup> Miletijev, Z. *Civilna zaštita kao faktor smanjenja posledica katastrofa*, Univerzitet u Beogradu, Geografski fakultet, 2020. godina, str. 8-9.

organizations ready to mobilize more people at a given moment. Therefore, the basic postulate of civil protection is personal, mutual and collective protection.

In order for this postulate to be realized in practice, state bodies, units of autonomous provinces, local self-government units and other legal entities are expected to maintain the correctness of funds and equipment for personal, mutual and collective protection and regularly train employees in the civil protection sector. The obligation on the part of citizens and owners of residential buildings is also to maintain and keep in good condition the means and equipment for personal, mutual and collective protection, as well as protection from natural and other disasters.

Entities in charge of implementing civil protection measures have the duty to carry out certain actions, such as the implementation of prevention measures, taking all protective measures in case of imminent danger of natural disasters, taking measures in case of these disasters, as well as mitigation and elimination possible harmful consequences that may occur due to the outbreak of these hazards. In order for the measures taken by the subjects of civil protection to be applied, it is necessary that the facilities, which are, among other things, protected objects, be built according to appropriate standards, urban plans and to ensure safety of life and health of persons who stay, live and work there. Here, special attention is paid to facilities of special importance, the safety of which is taken care of by the competent ministries and services.

Civil protection, in order to prevent great consequences for human life and health, material and cultural goods, takes the necessary actions, such as public alarm, evacuation of the population, displacement and removal, care of injured and endangered, chemical, radiological and biological protection, protection against technical and technological accidents, protection against demolition and ruins, protection against flood hazards, taking protection measures in hard-to-reach areas, protection against fire and explosion hazards, providing first aid, rehabilitation of terrain, preservation of vital goods, as well as keeping emergency services on standby.

Alarm should include taking the necessary measures for protection and rescue. For that purpose, alarm systems are used, which include the activation of certain

sound signals, which should warn citizens of the danger. The evacuation of the population is also carried out in order to protect the endangered population. Evacuation can be complete or partial, depending on whether the danger spreads over a larger or smaller area. Priority for evacuation is given to mothers with children under the age of 15, pregnant women, the sick and people with special needs, as well as all persons younger than 16 and over the age of 65. The extent to which the evacuation will be carried out, ie whether it will be complete or partial, is decided by the emergency headquarters of the local self-government. They are assisted in the evacuation by the bodies of the local self-government unit, as well as the district and city headquarters for emergency situations.

Removal and application of urban measures by civil protection are measures that are applied in order to provide adequate shelters for citizens in which they could hide until the causes of danger cease. For this purpose, public shelters are being built and maintained, which must be functional and ready for possible emergencies at all times. Citizens are accommodated in shelters first, and then material and cultural goods. Various underground passages, subways, basements, depots and warehouses can be used as shelters in emergency situations, which must be specially arranged for this occasion. The already built shelter capacities are permanently taken care of by a special company whose job description is. In regular circumstances, shelters can be used for various, even commercial purposes, but their alteration and adaptation that would make them unusable for the purpose of sheltering the population in emergency situations is not allowed.

Injured, refugees and endangered persons in emergency situations must enjoy special protection. The Red Cross service keeps records of these persons, and the care and disposal of these persons is carried out by local self-government units in cooperation with the emergency headquarters in accordance with the established Emergency Protection and Rescue Plan. All available accommodation facilities in public ownership must be made available for the purpose of temporary accommodation of these endangered persons. This refers to educational, sports -

recreational, catering - tourism and similar institutions. If the accommodation capacity is owned by natural persons, the fee for its use is paid at market prices.<sup>4</sup>

In the case of radiological, chemical and biological radiation, which can have a detrimental effect on human life and health, appropriate measures must be taken to minimize the harmful effects of these radiations. This primarily refers to the prevention of the consequences of environmental contamination caused by the use of chemical, nuclear and biological weapons. The bodies of civil protection are in charge of control, reconnaissance, as well as taking all necessary measures for collective protection and decontamination. In addition to emergency headquarters, citizens themselves must take personal protection measures, while collective protection measures are entrusted to companies whose activities include, among other things, taking measures to protect against nuclear accidents.

Protection against technical-technological accidents implies taking the necessary measures required to prevent and eliminate the consequences of accidents in the manner prescribed by law. The dangers that threaten technical and technological accidents mainly endanger human lives, human health and material goods. Measures to protect against such accidents are on the side of those legal entities that are engaged in activities related to hazardous substances or have facilities for specific purposes in terms of safety of life and health. These measures often include measures to prevent possible terrorist attacks, potential accidents that may occur, as well as to take all necessary measures that would result in the consequences, if an accident does occur, to a minimum. Special obligations are on the side of those legal entities that are engaged in mining activities, ie that deal with radioactive materials in which possible accidents could have catastrophic consequences for the environment.

All listed legal entities with risky activities have the obligation to make an Accident Protection Plan, which they must submit to the Ministry of Environmental Protection for approval. The plan must contain all preventive mechanisms for protection against the occurrence of potential harmful consequences and accidents with a fatal outcome, contain measures to remedy the

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<sup>4</sup> Jakovljević, V. *Civilna zaštita Republike Srbije*, Univerzitet u Beogradu, Fakultet bezbednosti, 2011. godina, str. 52-56.

consequences and keep them under control, as well as take measures to prevent harmful consequences for the ambience - people and the environment.

The legal entity is obliged to timely inform the ministry about the existence of the danger of a possible accident. The Ministry, on the basis of information and data collected in accordance with the law, as well as established risk assessments of activities of companies and other legal entities that may cause accidents, informs the competent authorities of the Republic of Serbia and the Autonomous Province and bodies of local self-government units competent in the area that may be affected by the effects of the accident.

If an unfortunate event has occurred, it is necessary to inform all competent bodies and institutions in a timely manner. Also, the legal entity is obliged to submit to the authorities information about realizations that has been obtained, which concerns information on the reasons for the occurrence of the accident. The analysis of the accident should follow within sixty days from the day of the accident.

The already mentioned accident protection plan must contain: organization and actions in notification, activation of bodies and structures for reacting in case of accidents, damage assessment and decision-making. Measures are being taken to reduce the risk in certain workplaces that are at risk of an accident. The protection plan also includes keeping the early warning system in good condition, so that they are effective and help eliminate the danger in a timely manner.<sup>5</sup>

## **2. DISASTERS CAUSED BY NATURAL CATASTROPHES**

Disasters caused by natural factors are those accidents which, due to their intensity and suddenness, which characterize them, have the potential to endanger the health and lives of a larger number of people, as well as to cause more serious material damage. Their occurrence is difficult to predict, and it is impossible to prevent them from happening. Acting in order to prevent the consequences of

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<sup>5</sup> Mihajlović, E. *Civilna zaštita*, Univerzitet u Nišu, Fakultet zaštite na radu, 2017. godine, str. 82-85.

natural disasters exceeds the regular actions of the competent authorities and requires emergency actions and treatment, more precisely actions as in emergency situations. Natural disasters can also be defined as a global threat that is permanently present and that endangers the security of people and property.<sup>6</sup>

These accidents can be caused by geophysical factors, such as earthquakes and volcanic eruptions, then meteorological factors such as storms, heavy rains, blizzards, extreme heat and the like, then hydrological, which include floods, climatic factors caused by climate change and they are the result of harmful effects of man on the environment. Biological threats come from bacteria and viruses, and the whole world is under the impact of a major epidemic caused by the COVID 19 virus, which has caused enormous damage in terms of human casualties around the world.

The authors will give several reviews of the expressed risks of natural disasters, which most often affect our region. The danger of floods is especially present in the spring months, when the water level of rivers increases due to frequent precipitation and melting of snow from the mountains. The Republic of Serbia, Bosnia and Herzegovina and Montenegro was hit by a large flood wave in 2014, which caused great consequences for the lives and health of people and their property. Entire settlements were flooded, and a large number of people were evacuated who were temporarily housed in makeshift accommodation in schools, barracks and hotels. The floods were caused by a strong cyclone that hit the central part of the Balkan Peninsula. In just 24 hours, 100 liters of rain per square meter fell in Serbia, and Belgrade, Valjevo and Loznica were the hardest hit. In addition to the flood, as the most severe consequences, landslides also occurred, and a state of emergency was declared on the territory of the entire country.

The cyclone that caused a natural disaster on the Balkan Peninsula in 2014 was named Tamara.<sup>7</sup> In addition to the Balkans, the consequences were felt in Central Europe. It was formed over the Adriatic Sea when the cold and humid polar air reached the Mediterranean region. There was a collision of the polar and pro-

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<sup>6</sup> Jovanović, K. *Ranjivost društva na prirodne katastrofe*, Univerzitet u Beogradu, Fakultet bezbednosti, 2018. godine, str. 11-12.

<sup>7</sup> The Croats called it "Donat", while in Europe it was called "Ivet".

European fronts, as a result of which low pressure was formed. It was the main cause of heavy rainfall in the Republic of Serbia and the surrounding countries, which then caused floods and landslides, which killed thirty people. There were torrents and rivers overflowing from their beds. Kolubara, Ljig, Kačer, Bolečka reka, Skrapež, Jadar, Zapadna Morava, Sava, Štira, Lovačka reka, Kolubara, Ostružnica, Ljubostinja, Drina, Ljubovađa, Tamnava, Toplica, Ribnica, Bogaštica, Čađevica, Kržava, Simića potok overflowed. , Ciganski potok, Trbušnica, Bosut, Topčiderska reka, Dunav, Crni Timok, Timok, Mlava, Vitovnica, Pek, Jasenička reka, Trgoviški Timok, Petrijevski potok, Gročica, Begaljički potok, Velika Morava, Južna Morava, Bjelica, Čemernica, Đetinja, Jasenica, Lepenica, Rača, Ralja, Despotovica, Belica, Jezava, Bulinjak, Lugomir, Uglješica, Crnica, Ravnica, Jovanovačka reka, Sikirički potok, Resava, Kubrušnica, Mučava, Laništanski potok, Veliki Lug, Mali Lug, Bojana, Drenovčić, Točak , Ibar, Veternica, Nišava, Toponička reka, Skrapež and Vlasina. The total material damage caused in the Republic of Serbia is estimated at around one million euros.

When talking about floods as a natural disaster in general, a distinction should be made between floods in the plains and hills. Plain floods are developing more slowly, while torrential floods, which hit the Balkan region, have a faster pace of development. What still characterizes torrential floods is that they often occur suddenly and without signs of announcement. The main cause of floods is rising river levels, which can be caused by groundwater, as well as poor defense mechanisms against floods, which is especially due to undefended or poorly defended parts, as well as the negligence of the local population towards embankments and dams.<sup>8</sup>

When it comes to landslides and escarpment, which also took place in 2014, the Republic of Serbia is one of those countries that are largely endangered by this natural danger. Of the total soil area of the Republic of Serbia, about 30 percent are high-risk areas, which are in immediate risk of landslides and escarpment. The causes of landslides are in the oscillations between surface and groundwater and

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<sup>8</sup> Novaković, B. "Poplave u Srbiji tokom 2014. godine – uticaj na zajednice akvatičkih makroinvertebrata" U: *Voda 2015- zbornik radova 44. godišnje konferencije o aktuelnim problemima korišćenja vode*, Kopaonik, 2015. godine, str. 43-44.

the reduction of soil resistance to displacement. The depth of the landslide is between five and ten meters, and shallower secondary landslides appear within them. In climates with rocks, landslides occur in parts of decomposed rock mass and deluvial zones, and in Neogene zones they are more widespread with greater depths.

The most active and deepest landslides occur on the banks of the Sava and Danube, on the northern slopes of Fruška gora, the stretch of Umka and Duboko, the Belgrade settlements of Karaburma, Vinča, Ritopek, Grocka and Smederevo. The biggest natural disaster caused by the landslide happened in our country in 1933 in Berkovac, on the slopes of the Maljen Mountain. Very active landslides include landslides on Stara Planina, as well as near Vladicin Han. The greatest damage from landslides is suffered by buildings that have been built, and there is a very expressed danger to human life and health and their safety. Landslides can endanger entire apartment blocks, and Belgrade itself, apart from Karaburma, as the largest and most active landslide, has this problem with its settlements Mirijevo, Medaković and Miljakovac and suburbs Barič, Umka, Mislođin, Veliki and Mali mokri lug, Ritopek, Vinca and Grocka.

Landslides occur in rocky parts of our country and appear as a problem caused by breaking rock mass, limestone and serpentine. They occur in the gorges of rivers, such as the Ibar, Lima, Drina and West Morava. They can be caused by natural processes, and can be the result of human activities, due to inadequate work in rocky areas. It was in 1983 in the Jerma Valley that a major accident occurred during the widening of the road, when a landslide was caused with a large number of human casualties. A similar accident had previously occurred in 1976 during the construction of a tunnel near Ovčar Banja, when due to a landslide, traffic on that section was completely suspended for a long time.

Currently, there are landslides near Ovčar Banja in our country, which occurred in 1896, the Chortanovci landslide, which occurred in 1942, the Zavoj landslide, which has been active since 1963, the Glišine Voda landslide since 1973, the Joc landslide from 1973, landslide Jovac from 1977, landslide Jerma, landslide Kutlavica, landslide Mramor and landslide Duboko - Umka.

Earthquakes are considered to be very serious security risks of natural origin. The European continent is particularly affected by this security risk, and high-risk countries include Greece, Italy and Turkey due to the primary collision of the Eurasian and African continental plates. The Republic of Serbia is not one of the countries that are in a high degree of earthquake danger. The earthquakes that hit our country were up to 5.9 on the Richter scale. These earthquakes of this magnitude can be categorized as destructive. In the past period, Serbia has experienced four strong earthquakes with human casualties. It is the earthquake of April 8, 1893, with the epicenter in Svilajnac, with a magnitude of 5.8 on the Richter scale, in which three people lost their lives. On May 15, 1927, Gornji Milanovac was hit by an earthquake measuring 5.9 on the Richter scale, when seven people lost their lives. On April 24, 2002, a 5.2 magnitude earthquake shook the Gnjilane area, killing one person. On March 11, 2010, Kraljevo was hit by an earthquake measuring 5.5 on the Richter scale, which resulted in the death of two people.<sup>9</sup>

The areas with the strongest seismic activity in the Republic of Serbia are the stretch between Kopaonik in the south and Arandjelovac in the north, which includes the hotspots: Svilajnac, Lazarevac, Rudnik, Kopaonik, Mionica, Jagodina and Trstenik. In southern Serbia, the most active areas are in Kosovo and Metohija (Gnjilane and Vitina) and the vicinity of Vranje. In western Serbia, areas with moderate seismic activity are Priboj, Nova Varos and Bajina Basta. Eastern Serbia has low seismic activity. In Vojvodina, there are terrains with active seismic in the area of Fruška gora, as well as the Plandište stretch, where the first earthquake was recorded in 1901, and the most recent was in 2018 with a magnitude of four on the Richter scale.

Extreme weather events also pose a very significant security risk. Such weather phenomena include extreme precipitation, stormy wind, hail, snowstorms (blizzards and drifts), ice and heat waves.

The Republic of Serbia is one of the regions that are very favorable in terms of the formation of storm - thunder clouds followed by hail, stormy wind and a large

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<sup>9</sup> Krstić, S. *Zemljotresi i mere zaštite u Republici Srbiji*, Univerzitet u Beogradu, Fakultet bezbednosti, 2016. godine, str. 20.

amount of precipitation. They occur mainly in the summer months in the afternoon and evening, which has to do with the fact that this is the time of day when warm and humid air rises. Particularly dangerous are the situations when the penetration of cold air occurs in the warm period of the year, which favorably contributes to the creation of storm - thunder clouds. The city most often occurs in the area of Šumadija, on Fruška gora, in Srem and southern Bačka, on Kopaonik and along the whole of southern Serbia.

The strongest gusts of wind were recorded in the framework of thunderstorms during the existence of the so-called supercellular clouds. In Sombor, Tordi and Jagodina, mini-tornadoes with low space and intensity have been reported. The strongest wind in Serbia is Košava, which occurs in the Danube region, Pomoravlje and southern Banat.

The problem of heavy rainfall is conditioned by the influence of cyclones over our country. When thunderstorms occur, they are the result of instability in the atmosphere. These phenomena are most harmful to agriculture and farmers. During 2015, the greatest damage occurred in agriculture, where as many as 10,950 hectares were destroyed by thunderstorms, while in 1993, 245,740 hectares suffered from the same cause. The municipality of Osecina suffered the greatest damage.

### **3. EMERGENCY SITUATIONS**

According to the definition of the Law on Emergency Situations, an emergency situation is a situation when risks and threats or consequences of catastrophes, extraordinary events and other dangers to the population, environment and material goods of such scope and intensity that their occurrence or consequences cannot be prevented or eliminated by regular services. and organs, due to which their mitigation and elimination can be done by using special measures, forces and means with an intensified regime of work. The law classifies emergency situations according to the criterion of the nature of their occurrence, and thus distinguishes between natural disasters, technical and technological accidents, the consequences of war and the consequences of terrorist acts.

If the criterion is the space in which the emergency situation extends, they can be local, national and global. Emergencies can also be divided according to whether they could have been foreseen or not. Then, we divide them according to whether they last a moment, a few hours, a few days or months. Also, emergencies can be categorized according to the criterion of whether they were evitable or unavoidable.<sup>10</sup>

In order to adequately deal with the occurrence of these emergencies, it is necessary to properly and adequately manage them. In order to be able to do that, it is first necessary to identify all possible modalities of occurrence emergency situations. Elaboration of potential scenarios of occurrence and development of adverse events, analysis of interdependence of situations and events, analysis of the impact of various factors of persons working on emergency management and finally taking preventive measures and mechanisms, ie repairing damage, if it has already occurred, are the main tasks of emergency management. 11

As a rule, emergency management is performed before their occurrence, which ensures preventive work on preventing the occurrence of emergency events. Also, management can be performed when a state of emergency occurs, when an attempt is made to prevent the occurrence of severe consequences resulting from negative social phenomena. The most important here is prevention, which is reflected in the prevention of emergencies through the development of communication relations, the creation of an effective system of early alerting and warning, as well as control and enhanced supervision of accommodation and storage facilities. This is followed by preparedness in the prevention of emergencies, which means preventing the consequences of emergencies. Responding to an emergency situation means timely engagement of emergency services and engagement of labor and manpower. When the danger is eliminated, then the rehabilitation of the consequences is approached through their mitigation and normalization of everyday life. The damage is first ascertained and assessed, and then the aid organization is approached, in terms of its collection and allocation according to priority.

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<sup>10</sup> Arsić, M. *Civilno – vojna saradnja u aktivnostima vanrednih situacija*, Univerzitet u Beogradu, Fakultet bezbednosti, 2020. godine, str. 18-19.

<sup>11</sup> Marić, P. „Novi institucionalni okviri prevencije vanrednih događaja i njihov značaj“, *Bezbednost*, broj 4, Beograd, 2006, str. 589-597.

#### **4. PREVENTION OF DISASTERS CAUSED BY NATURAL CATASTROPHE**

The issue of prevention of disasters caused by natural catastrophe is an essential issue in the discussion related to emergency management. Natural disasters are mostly characterized by unpredictability, which makes it significantly more difficult to work with them and almost makes it impossible to create a preventive strategy. This issue has been the subject of interest of many legal acts, which have been adopted at the national and global level. However, they all lacked an implementation element, which means that they were mostly insignificant with no great chance of turning from words into deeds. One of the first acts of this type was the Convention for the Protection and Development of the Sea Environment throughout the Caribbean, which was adopted in 1983. The aim of this Convention was to force all states that have accepted it and incorporated it into their legal order to take all necessary measures to respond to the threats and challenges of pollution in the Caribbean. The Convention provides a very arbitrary distinction between the types of natural disasters, as well as the imprecise determination of the sources from which they originate.

A good example of a poor determination of the origin of a catastrophe is the problem of uncontrolled oil spills. This problem is specifically regulated by the Protocol on Cooperation in Combating Oil Spills in the Greater Caribbean Region with Annex No. 3 of March 24, 1983, which put into effect only three years later. The first world conference was held in 2005. on disaster reduction organized by the United Nations. At that conference, the issue of building and creating a normative basis for forecasting and preparedness for natural disasters was raised. It was, in fact, an introduction to the establishment of an international early warning program, which would enable all countries in the world to prepare for the coming catastrophes in time at the international level.

Until the very beginning of the 21st century, there were no international acts or international standards that would prescribe procedures, rights and duties to act

in case of emergencies.<sup>12</sup> The first beginnings of creating legal standards in the field of dealing with emergencies caused by natural disasters were made by the Red Cross, which in 2000 began drafting a legal project to respond to disasters. The idea was to integrate different policies, legal solutions and instruments that regulate the issue of natural disasters. This mainly includes international agreements and resolutions that totally constitute international regulations on disaster response.

The starting point in resolving the issue of dealing with emergencies caused by natural disasters is the Law on Human Rights, which starts from the fact that the right to life is a substantial right of every human being. In addition to that fundamental right, this act also guarantees the rights to food, water, housing, clothing, health, support and freedom from discrimination. At the international level, the International Covenant on Civil and Political Rights and the International Covenant on Economic, Social and Cultural Rights were adopted in 1966. Also, the United Nations Office for the Coordination of Human Rights Affairs was established, whose primary task is to provide assistance to the endangered population from natural disasters and catastrophes. The Food Aid Convention was adopted in 1999, and the Principle and Practice of Good Humanitarian Donor Relations in 2003. This practice of donation immediately came to life in 2004, when aid was provided to victims of tsunamis and earthquakes in the Indian Ocean. In the later period, ending in 2010, the practice of humanitarian donation has become established all over the world. Private funds and their share are growing from 17 percent to 32 percent, with a tendency for new growth.

The most difficult, but very dominant question is what happens to the victims that inevitably die as a result of natural disasters. International instruments, which rely mainly on the distribution of international responsibility, and not on a mechanism that would recompense the families of the victims, deal with this question. Compensation for personal injuries, as well as property losses, is generally lacking. Insurance funds, with special purposes for disasters, can be used for the purpose of compensation. They are mostly established as a form of public - private partnership, which provides insurance coverage in the amount of three to 23

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<sup>12</sup> Klajn – Tatić, V. „Upravljanje prirodnim i nuklearnim katastrofama: pravni i etički pristup“, *Strani pravni život*, broj 1, 2016, str. 49.

percent, excluding certain forms of natural disasters. Assistance to victims and their families is provided by the governmental and non-governmental sectors, and sources can be public and private donations.

## 5. EPIDEMICS AS A CAUSE OF EMERGENCY

The latest example of the epidemic and pandemic of the infectious disease COVID 19, caused by the corona virus of animal origin, brought the whole of humanity to its knees. Currently, there are 515,973,458 people infected with COVID 19 in the world, a total of 6,272,483 people died, while 459,516,183 people were successfully cured of this disease. The most suffered and died from this disease was in the United States, followed by India, Brazil, France, Germany, the United Kingdom, Russia, South Korea, Italy, Turkey and Spain. Then there are countries with a smaller number of sick and dead.

The essence is that the development of infectious diseases and their rapid spread can be a reason for an emergency situation. The Law on Protection of the Population from Infectious Diseases regulates the issues of emergency situations caused by epidemics of infectious diseases. This Law regulates the protection of the population from infectious diseases that endanger the health of the population of the state, and the suppression of which contributes to the protection of the development of diseases, which could endanger the life and health of the population. The law specifically regulates the issues of conducting epidemiological surveillance, taking epidemiological measures, the manner of implementation of measures and surveillance, means for implementation, supervision of applications and other important issues for the protection of citizens from infectious diseases.

Infectious diseases are diseases caused by a special reagent, which occurs due to their transmission or the transmission of their products. Transmission can take place from an infected person to an infected person, and it can also be an indirect transmission through some other reservoirs, such as contaminated water, food, items of general use, inanimate environments and others. Also, transmission can be from animal to human, when the animal is a carrier of an infectious disease. These are the diseases that can lead to a significant infection of a larger number of people

who can be fatal. Until the outbreak of highly contagious COVID 19, the World Health Organization had a list of infectious diseases that were subject to epidemiological surveillance and against which prevention and suppression measures must be taken. These are diseases that can be prevented by immunization (diphtheria, hemophilic influenza, smallpox, mumps, whooping cough, polio, Rubella, Variola vera, Tetanus), then sexually transmitted diseases (chlamydia, gonococcal infections, syphilis, human immunodeficiency diseases), then hepatitis viruses (A, B and C categories), food and waterborne diseases (Anthrax, Botulism, Capilobacteriosis, Cryptosporidosis, Lambilosis, Enterohemography, Leptospirosis, Salmonellosis, Shigellosis, Toxoplasmosis, Trichinosis and Yersinosis, as well as Yersinosis, diseases caused by transmission by unconventional causes, such as airborne diseases (Legionellosis, Meningococcal disease, Pneumococcal infections, Turbeculosis, SARS, COVID 19), zoonoses (Brucellosis, Echinococcosis, rabies, Q fever, Tularemia, Western influenza) Nile, Hemorrhagic renal fever), serious imported diseases (Cholera, Malaria, Plague), vector-borne diseases royal encephalitis) and special health issues (nosocomial infections and antimicrobial resistance).

At the level of the Republic of Serbia, a program for suppression and prevention, removal and eradication in accordance with the law and international agreements is adopted. Measures to protect the population from infectious diseases can be divided into general and special. General measures include providing proper drinking water, providing healthy food, providing healthy water in public baths and swimming pools, providing sanitary and hygienic conditions in facilities under sanitary supervision, carrying out preventive disinfection, removal of human and animal excrement, corpses, tissues, wastewater and other hazardous substances. Measures are implemented in order to reduce and stop reproduction or completely eliminate and remove source of infection.

Special measures for protection against infectious measures include: early detection of sources of infection, epidemiological research and testing, laboratory research, diagnosis of infectious diseases, reporting, home isolation and treatment, quarantine and surveillance, immunization, disinfection, disinsection and deratization, medical examinations employees, protection against infection and regular informing of the population and employees in health institutions.

In the spring of 2020, emergency measures were introduced in the Republic of Serbia due to the danger of infectious disease COVID 19. The mass infection, which came from the Chinese province of Wuhan, derives from animal origin, from a bat that entered the human food chain without prior heat treatment . The infection spread en masse, and it had flu-like symptoms, with a much more severe clinical picture and much more severe consequences for human life. The virus was particularly deadly to the elderly population and the population suffering from accompanying comorbidities. High mortality from COVID 19 was recorded in Italy, USA, Austria, Germany, Latin America, India, Spain, while a total of 16,033 people died in the Republic of Serbia from the beginning of the pandemic until the first half of 2022.

## CONCLUSION

Considering the changes in modern circumstances, which had a certain reflection on nature and the natural environment, we come to the conclusion that the circumstances directly related to nature and origin from nature have turned drastically against man and humanity, and significantly endanger the survival of mankind. Increased land activities, extreme weather conditions, strong winds, forest fires and floods are considered direct consequences of man's actions on nature and man's contribution to subordinate nature to himself, in fact turning it against himself and making him his worst enemy.

The essence of the consideration is in the question, how to act in case of emergencies caused by natural disasters. Co-authors give an overview based on the provisions of the Law on Civil Protection, give a historical - legal overview of the concept of self-organization of people in case of emergencies, then give an analysis of natural disasters in later and recent history in our country and give a retrospective of events in connection with the epidemic of communicable diseases, with special reference to COVID 19.

The conclusion that emerges is that humanity is increasingly threatened by dangers of various sources, which can be classified as natural disasters and catastrophes. Human life, security of human lives and property are becoming

increasingly endangered, and the source of danger lies in the invisible enemy that threatens from nature. The characteristic of natural disasters is that they occur suddenly, act destructively in a short period of time and cause great damage to human lives and property.

The essential issue is the issue of prevention. How can we and can we predict a certain catastrophe, can we influence it not to occur or, if it has already occurred, to try to reduce the consequences to the minimum. These are the main issues and at the same time the starting point of any strategy for combating natural disasters. Timely alert systems, as well as warning systems, must always be operational and must always provide timely information, so that a disaster can be avoided or its consequences minimized.

We must not neglect the natural causes of disasters. They must be looked at with special care and significance because predictions for the future are not at all optimistic. It is believed that these natural factors of accidents will multiply and that over time they will become more dangerous and more common. Certainly, this can be seen as retaliating against the blow of nature to man and compensating for the ruthless adaptation of nature to human selfish needs. Man must count on this factor because with the reduction of the factor of surprises the possibility of natural disasters causing unforeseeable consequences minimize.

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