

**PERSONAL AND MUTUAL PROTECTION OF CITIZENS
IN THE LOCAL COMMUNITY**

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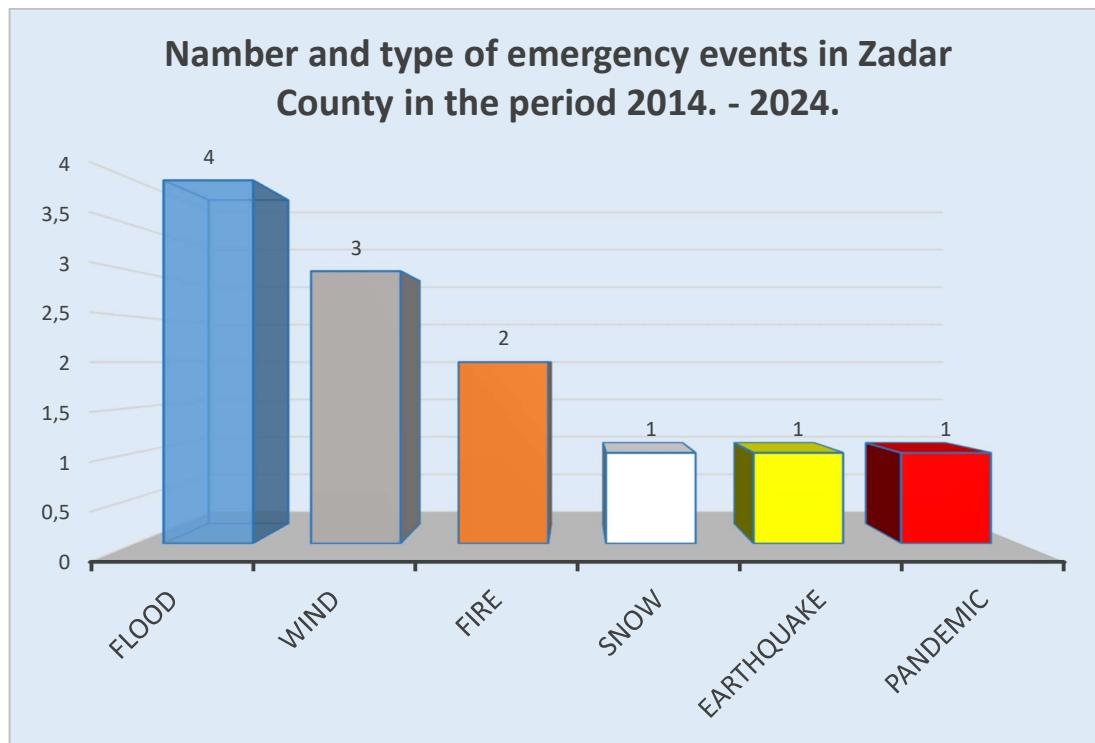
Abstract: *Analyzing the data on extraordinary events that marked the past decade in Zadar County, the necessity of increased communication and strengthening of awareness of all the county residents about the risks with which we live and share the living space has been established. New challenges for the local community conditioned by extreme weather phenomena, as well as the increase in the consequences of known risks to human life, material and cultural assets, agriculture, plant and animal life, represent the necessity of intensifying the cooperation of the Civil Protection Directorate with all levels of those legally obliged to establish civil protection. In this context, we will briefly focus on emergency events in Zadar County in the period from 2014 to 2024 as a reference period of 10 years in which a significant number of emergency events occurred. Emergency events confirm the necessity of the continuous efforts of the Civil Protection Directorate to prepare the local community for potential risks and reduce the risk of disasters through preventive and preparatory activities. In most of the analyzed emergency events, the civil protection system was activated through the activities of the civil protection headquarters and its work contributed to a timely response and elimination of the consequences of the emergency event. It is necessary to think about the self-sufficiency of the local community in responding to the consequences caused by emergency situations. Can the local community, using exclusively the operational forces of the civil protection system, provide a quick and effective response in the area of its territorial jurisdiction? Are the available human capacities of the operational forces sufficient? Is there an interest among citizens in participating in activities in response to emergency events? This professional paper will provide answers to the previously raised questions by analyzing the state of the available operational forces and reactions to emergency events in the observed area. At the same time, it is intended to draw attention to the importance of knowing the risks and dangers and the procedures for citizens to behave in emergency situations. Ultimately, the aim of the paper is to explain the importance of implementing citizen education, which is continuously carried out by the Civil Protection Directorate, with the aim of raising awareness and reducing disaster risk, i.e. strengthening the resilience of the local community.*

Keywords: *Emergency event, citizen education, personal and mutual protection*

1. INTRODUCTION

The following part of this professional paper will present the most important crisis situations in the last ten years in Zadar County area (period 2014-2024). The analysis of individual emergency events and the location of their occurrence will focus on the possible predictability of natural events as well as preventive preparations of the citizens in the local community to strengthen personal and mutual protection in the event of an emergency. Below, we highlight 12 emergency events in the observed period. The first in a series of events was recorded on July 30, 2014, when, as a result of heavy rainfall and overflowing water from the Vlačine hydroaccumulation lake, a surface collapse of the outer part of the embankment occurred in a length of approximately 30 m. The cause of the event was human negligence and the non-functioning of the water level control system (the control outlet was not in operation). The specificity of this case is the date of the event and the territorial position of the Vlačine reservoir, which is under the jurisdiction of the City of Benkovac and the Municipality of Poličnik, and in the case of a dam burst, local, county and state roads as well as the A1 motorway are at risk. Residential and commercial buildings in the Municipality of Posedarje are also at risk. Furthermore, in the middle of the tourist season on August 21, 2017, after a long-term drought, extreme heat and strong winds, a large-scale fire broke out in the wider Zadar hinterland. Several houses in the hinterland of Benkovac were evacuated and traffic on the A1 motorway between the Pirovac, Benkovac and Zadar II junctions was temporarily interrupted. Just three weeks later, on September 11, 2017, the wider area of Zadar County, especially the City of Zadar and the City of Nin, was hit by heavy rain and enormous flash-urban floods, as well as floods near the Ričina watercourse, Miljašić ravine and other smaller watersheds. The flood caused major material damage to roads, infrastructure, commercial and residential buildings. In the area of Gračac municipality on February 23, 2018, due to large amounts of snow and the traffic isolation of certain settlements, the Croatian Army was engaged in clearing roads. On July 8, 2019, a strong stormy and swirling wind "leeches" appeared in the narrower area of the City of Zadar in the tourist-popular settlements of Borik and Diklo, which caused considerable material damage to infrastructure facilities, electric poles, parks and campsites. We remember the beginning of March 2020, specifically March 11, 2020, due to the fact that a pandemic of the COVID-19 virus was declared in the Republic of Croatia. It should be noted that all civil protection headquarters of local self-government units in the Republic of Croatia were activated in order to prevent the spread of the disease and reduce the consequences of the disease. There was exceptionally high engagement of all operational forces of the civil protection system as well as services and institutions responsible for implementing epidemiological measures and recommendations. For the needs of accommodation in Zadar County, 6 hotels were mobilized at that time, 5 legal entities were mobilized to perform certain services. 8 housing containers were delivered and installed for the needs of the Zadar General Hospital, as well as the continuous procurement and delivery of protective face masks, disinfectants, equipment and other hospital needs. The end of the pandemic was declared on May 11, 2023. During the duration of the pandemic, more precisely on November 1, 2020, a strong earthquake with an epicenter in the Starigrad Paklenica area occurred, and its magnitude was 4.7 on the Richter

scale. There were no injuries or significant material damage. An unusual weather phenomenon in the hinterland of Zadar County, more precisely in the town of Novo naselje in the town of Benkovac, occurred on February 7, 2022 as a strong storm wind "leech" that damaged the roofs of about 40 family houses and caused significant material damage. Immediately after the end of the pandemic, on May 14 and May 15, 2023, a flood occurred in the area of Gračac Municipality and the Town of Obrovac. Due to heavy rainfall, groundwater erupted and the Otuča River in Gračac and the Zrmanja River in Obrovac overflowed their banks. Significant material damage was caused, especially in the area of the Town of Obrovac, where the Zrmanja River flooded the city center, some local roads were partially destroyed, bridges and businesses, family houses and residential buildings were damaged. Due to strong winds and snow drifts on November 29, 2023, road traffic on the A1 motorway section was interrupted in both directions, southwards from the interior and northwards from the coastal area. As a result, all traffic was directed via Gračac and Obrovac, where, due to deteriorating weather conditions and the impossibility of further road traffic, there was a need to accommodate a large number of passengers who could not continue their journey. The Gračac Municipality organized the accommodation of passengers in three shelters for approximately 500 passengers. On July 30, 2024, a large fire broke out in Zemunik Municipality near the airport. Family homes and transport infrastructure facilities (Zemunik airport) were threatened.



Graph 1: number and type of emergency events

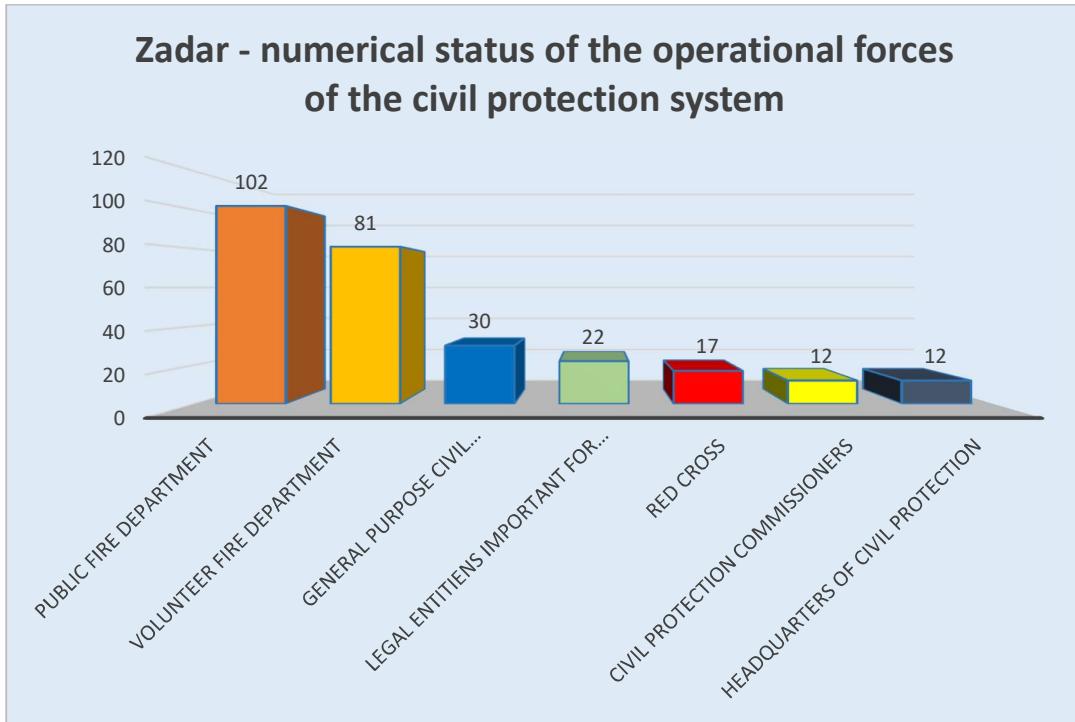
In the observed ten-year period, the most significant extraordinary events in Zadar County area were related to floods in watersheds, torrential and urban floods. This information is emphasized by taking into account the fact that this is a karst relief with Mediterranean climate and poor surface flows. Taking into account the consequences of floods as the fact of the most significant extraordinary event, in further work we focus our attention on the analysis of the sufficiency of the civil protection system operational forces of the local governments where such an extraordinary event occurred. Furthermore, the brief information will provide basic data on the observed local communities and the numerical status of the civil protection system operational forces.

2. SITUATION ANALYSIS - OBSERVED LOCAL COMMUNITIES

2.1 The City of Zadar

Zadar, as the city and center of Zadar County, has a total of 15 settlements: Babindub, Brgulje, Crno, Ist, Kožino, Mali Iž, Molat, Olib, Petrčane, Premuda, Rava, Silba, Veli Iž, Zadar, Zapuntel. The settlement consists of 22 local committees (neighborhoods), and is spread over an area of 192.4 km². According to the 2021 census of population, households and apartments of the Central Bureau of Statistics, 70,779 inhabitants were recorded in this area. The specificity of the territorial distribution of the city of Zadar is that in addition to the mainland part, the city also includes 7 islands, which makes the civil protection system more challenging and specific for operating in emergency situations. The Ričina watercourse, about 3 km long, flows through part of the city of Zadar, which flows into the Adriatic Sea. The flood event that hit Zadar County in 2017 caused extreme material damage to the entire affected area. Particularly large damages occurred along the Ričina watercourse in the densely urbanized area of the city of Zadar, where a previously unrecorded water wave occurred. In the following, an analysis of the available and submitted data on the operational forces of the civil protection system of the city of Zadar provides an overview of the numerical status of individual operational forces, which can be seen in the graph 2.

It should be noted here that the graph of all observed local communities does not show the numerical status of the operational forces of the HGSS Zadar station members, because the HGSS Zadar station operates in the entire Zadar County and its numerical status is 49 members.



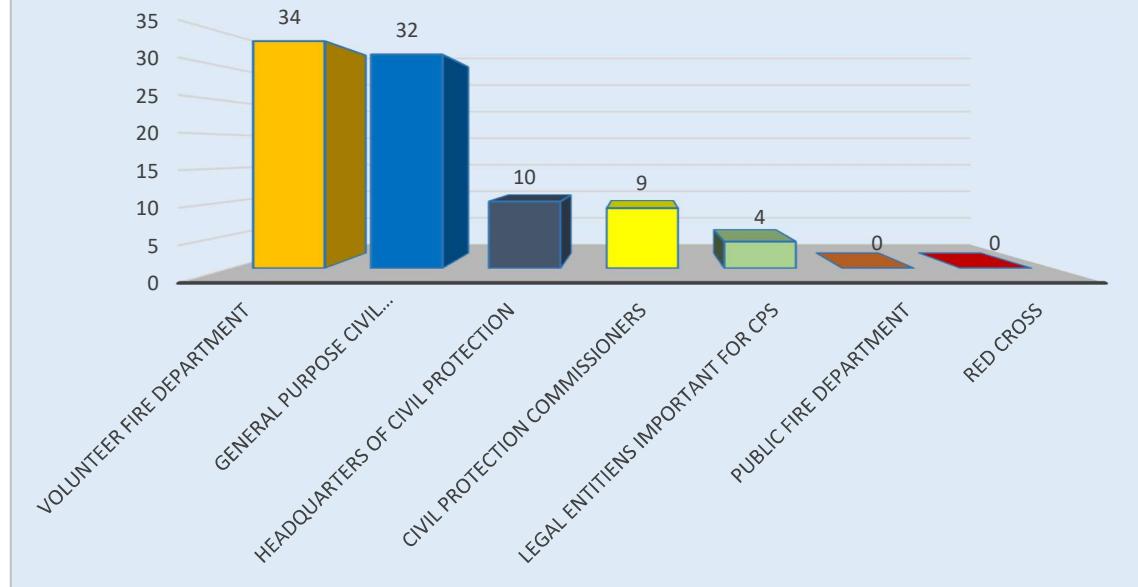
Graph 2.: Numerical state of operational forces of the City of Zadar – 2024

2.2.The City of Nin

Nin is a town located 15 km northwest of Zadar. It consists of 6 urban settlements: Grbe, Nin, Ninski stanovi, Poljica-Brig, Zaton and Žerava, and is spread over 53.3 km² of area. According to the 2021 census of population, households and apartments of the Central Bureau of Statistics, 2,705 inhabitants were recorded in this area. The specificity of this town is that in the area of Zaton settlement there is a famous camp and tourist resort Zaton, with the capacity of over 7,800 guests and an area of over 100 ha. The local stream Miljašić jaruga runs through the area of the City of Nin, which flows into the Adriatic Sea and consists of a large number of tributaries. This watercourse caused extreme material damage in the Nin area in 2017. Particularly great damage occurred along the Miljašić jaruga watercourse, where there are commercial and residential buildings nearby with a previously unrecorded water wave.

Below, by analyzing the available and submitted data on the operational forces of the civil protection system of the City of Nin, an overview of the numerical status of individual operational forces is provided, which can be seen in Graph 3.

Nin - numerical status of the operational forces of the civil protection system

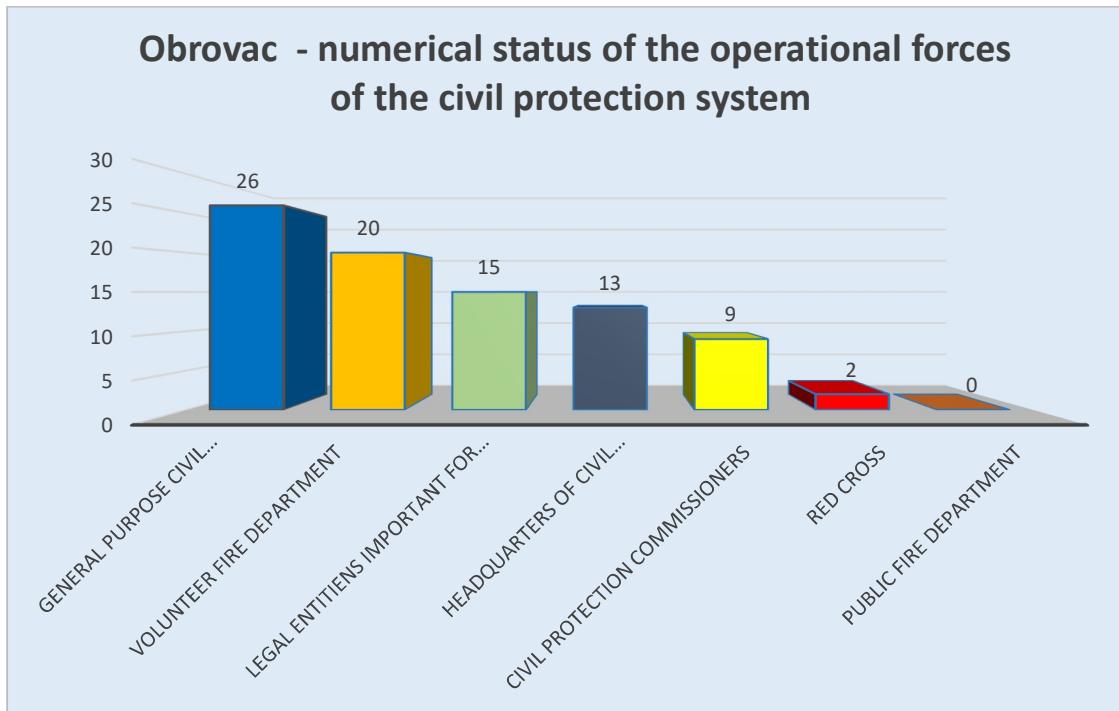


Graph 3: Numerical state of operational forces of the City of Nin – 2024

2.3. The City of Obrovac

Obrovac is located on the banks of the Zrmanja River, 12 km from the mouth of the Adriatic Sea. There are 12 settlements in the area of the city of Obrovac: Bilišane, Bogatnik, Golubić, Gornji Karin, Kaštel Žegarski, Komazeci, Krupa, Kruševo, Muškovci, Nadvoda, Obrovac and Zelengrad. The total area of the City of Obrovac is 353 km². According to the 2021 census of the population, households and apartments of the Central Bureau of Statistics, 3,387 inhabitants were recorded in this area. The specificity of this city is the Zrmanja River with its well-known torrential flow character in a short period of time. Such characteristics of the river consequently have limited flood protection measures that are implemented as preventive and preparatory activities, and active flood protection measures are very rarely implemented, which are implemented in the form of timely notification and removal of people and property from areas of possible flooding. The flood event that hit Obrovac on May 14, 2023 caused extreme material damage throughout the affected area. Particularly extensive damage occurred along the Zrmanja watercourse in the city center on the left bank of the Zrmanja, where a previously unrecorded water wave occurred.

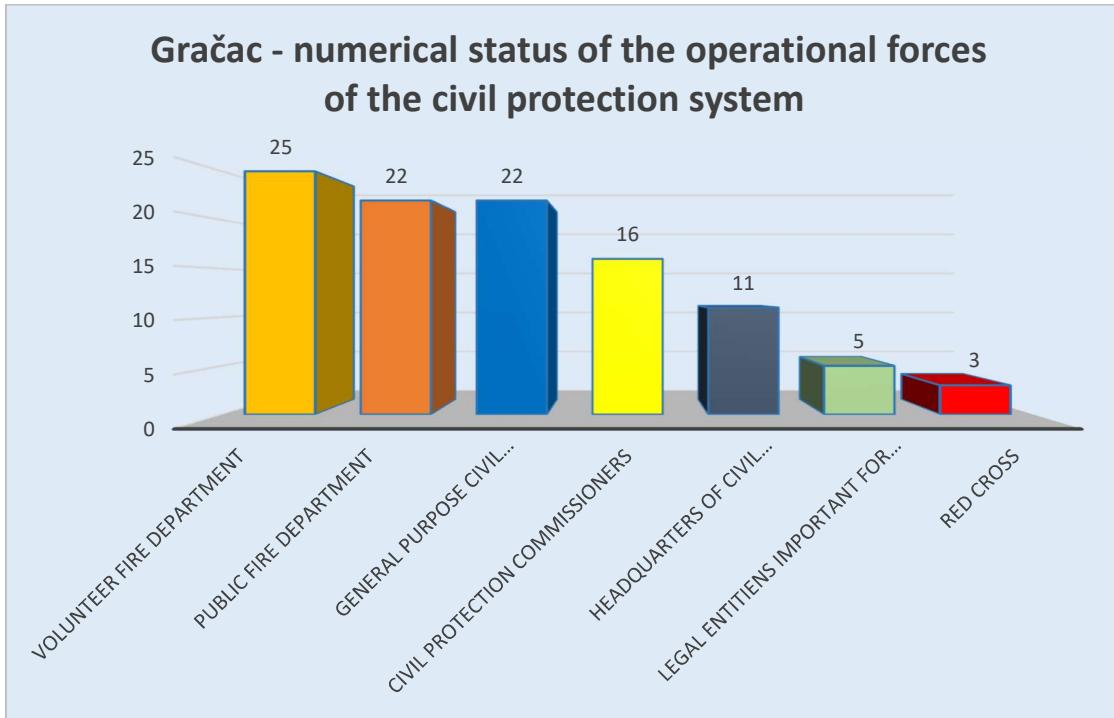
Below, an analysis of the available and submitted data on the operational forces of the civil protection system of the city of Obrovac provides an overview of the numerical status of individual operational forces, which can be seen in the graph 4.



Graph 4.: Numerical state of operational forces of the City of Obrovac - 2024

2.4. Gračac Municipality

Located in the southern Lika region, it is the largest municipality in the Republic of Croatia and covers an area of 958 km² with 39 settlements. According to the 2021 Census of Population, Households and Apartments of the Central Bureau of Statistics, this area has 3,136 inhabitants, or 3 inhabitants / km². The specificity of this municipality is the underground river Otuča, which flows through the center of Gračac. On May 14, 2023, the Otuča River caused major material damage to residential buildings as a result of overflowing from the riverbed due to an unprecedentedly high water wave. Below, an analysis of the available and submitted data on the operational forces of the civil protection system of Gračac municipality provides an overview of the numerical status of individual operational forces, which can be seen in the graph 5.



Graph 5.: Numerical state of operational forces of Gračac Municipality - 2024

Based on the previously mentioned analyzes of the state of the civil protection system and the territorial characteristics of local communities, there is an unquestionable need to strengthen the human and technical capacities of the operational forces of the civil protection system. At the same time, it is necessary to educate citizens about the importance of self-protection, personal safety and the acceptance of knowledge and procedures for proper response to possible emergency situations. For these reasons, in this paper we draw attention to the importance of personal and mutual protection of citizens, legal provisions and lessons learned from previous actions.

3. CITIZENS' AND LOCAL COMMUNITIES' OBLIGATIONS

Personal and mutual protection of citizens is prescribed by Article 43 of the Civil Protection System Act (Official Gazette No. 82/15, 118/18, 31/20 and 20/21), which stipulates that "Every citizen is obliged to take care of his or her personal safety and protection and to implement personal and mutual protection measures and to participate in the activities of the civil protection system". Furthermore, the same article stipulates that "Personal and mutual protection measures include in particular: self-help and first aid, relocation of persons, care for children, sick and infirm persons and members of other vulnerable groups, as well as other civil protection measures that cannot be postponed, and which are implemented by order of the competent civil protection headquarters and the civil protection commissioner, including forced evacuation as a preventive measure taken to reduce the possible consequences of a major accident and disaster". In addition to legal regulations, there are numerous instructions and recommendations in the literature for handling and self-protective action in case of emergency situations. Rational action, calmness and speed of decision-making in disasters can be crucial for survival. In the collection of papers "How do we protect ourselves from disasters" (Toth,

Boričević, Topić, 2007:193) under the title Seismology in search of the third answer, it is stated: "A key role in reducing the risk and consequences of earthquakes to the smallest possible extent, in addition to organizing, equipping, professional training and training of professional and volunteer organized forces of the protection and rescue system, is played by education and preparation of the population for self-protective action and providing lay help". Despite the fact that this paper does not deal with the consequences of an earthquake and preventive preparations for an earthquake, it should be remembered that an earthquake is a comprehensive and sudden event that causes the greatest fear in people, and by strengthening preparedness and preparation for rational action in the event of an earthquake, we also strengthen preparedness for all other extraordinary events. The state has a moral, legal and constitutional obligation to take all measures and activities to establish an effective civil protection system. At the same time, the local community should be aware of the necessity of urgently providing human and technical assistance to those operational forces that are in the immediate vicinity until the arrival of specialized operational forces and the start of a more complex organized intervention. The success of the response to emergency events is closely linked to the mutual relationship between the profession and members of the local community within which it operates. The involvement of citizens in the security thinking of the local community should be an imperative of today, especially when it comes to disaster preparations. In order to improve prevention and educate as many citizens as possible for self-protection and mutual assistance, the Civil Protection Directorate continuously conducts citizen education on the civil protection system. Education is carried out in cooperation with local communities based on the Citizen Education Program on the Civil Protection System, which was adopted by the Ministry of the Interior in 2023. You can see an example of citizen education in Zadar in Figure 1.



Figure 1: Education of citizens

At the same time, in addition to the theoretical part of the education, the practical part of the education of citizens is carried out with the support of the operational forces of the civil protection system. The operational forces, as part of such education, contribute to the acquisition of new skills and knowledge through practical examples and exercises that can be useful in various emergency situations and minor injuries to the bodies of injured persons. If we analyze emergency events in the area of a local community, we can conclude that these are events that are repeated and concentrated in certain places. This is the reason why we have reason to believe that an emergency event is predictable, and the main goal of crisis planning is to reduce the risk to life from current and potential disasters. In addition to the moral obligation of citizens, we have seen that there is also a legal obligation, and in brief, the obligations of citizens in the civil protection system can be seen in diagram 1.

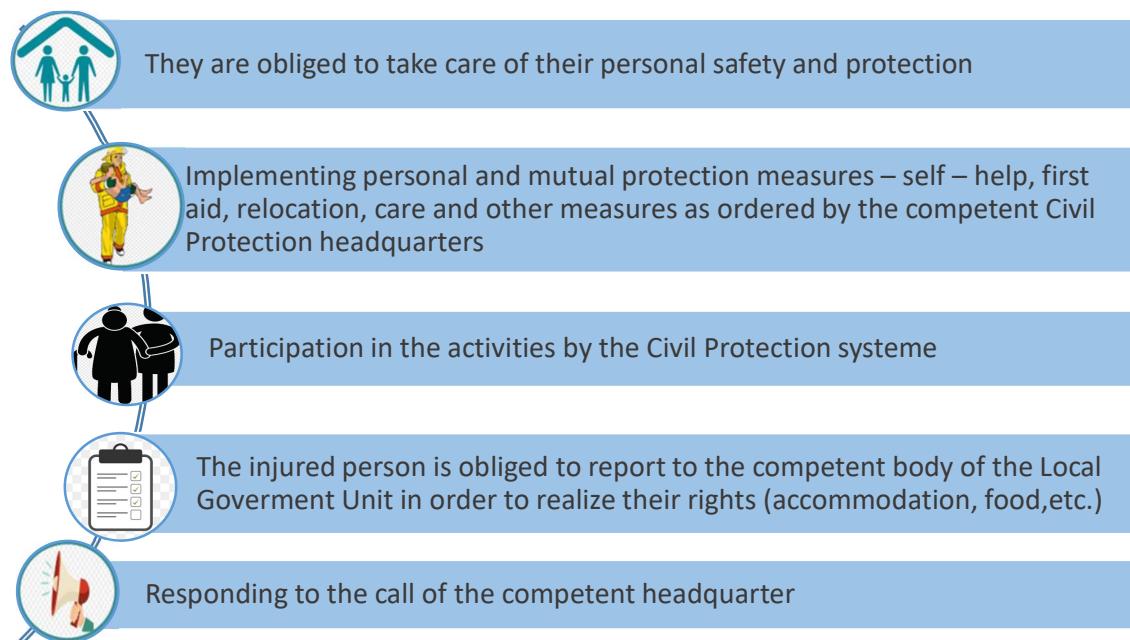


Diagram 1: Citizens' obligations in the civil protection system

4. CITIZENS' REACTIONS IN THE LOCAL COMMUNITY – EXPERIENCES

The introductory chapter of this paper lists the extraordinary events that marked the period from 2014 to 2024 in the Zadar County. With the exception of the COVID -19 pandemic, the greatest financial consequences for residents and infrastructure facilities, as well as residential and commercial facilities, were caused by damage caused by high water levels, floods and flash floods - urban floods. None of the local communities observed in the introduction had sufficient operational forces available at the initial moment of the extraordinary event. The reason is the large territorial area of the local community and the event that occurred in a large part of the territorial jurisdiction. The well-intentioned reactions and availability of citizens required a quick organizational response and support at the scene of the event in order to avoid improvised planning that leads to confusion and errors in the field. As a positive example of citizens'

awareness of the danger and possible consequences of an extraordinary event, an example of the reaction of a private entrepreneur in the area of the city of Obrovac after the flood threat of the Zrmanja River due to high water levels on October 3, 2024 will be cited. In response to a call from the Obrovac Civil Protection Headquarters via social media for citizens' help in defending against the impending flood, a private entrepreneur responded with machinery and about 15 workers who were filling sandbags and assisting Croatian Waters in the construction of a rabbit embankment on the banks of the Zrmanja River. The described activities of the citizens can be seen in Figure 2.



Figure 2: Citizens' assistance in flood defense - Obrovac 2024

5. CONCLUSION

Extreme weather events caused by climate change are becoming an increasingly common reason for the operation of the civil protection system. The speed and intensity of the development of emergency events require strengthening citizens' awareness of the risks as well as of the ways of active organized involvement in the implementation of civil protection measures. Here, the necessity of organized citizen action in cooperation with the competent local civil protection headquarters is emphasized in situations when operational forces are unable to respond to an emergency event with their own human capacities. Namely, extreme weather events can require the engagement of a much larger number of operational forces in a short period of time than the local community has at its disposal.

From the lessons learned in the previously described extreme emergency events, it is not realistic to expect an effective response from the local community using exclusively operational forces from the area of its territorial jurisdiction. Until the arrival of assistance from other operational forces, based on the principle of solidarity and assistance from a higher hierarchical level, citizens can greatly assist operational forces in the field with prior coordination with the local civil protection headquarters. Citizens are interested in helping in emergency situations, but coordination and communication with citizens in emergency situations is a challenge for local communities. Civil protection headquarters in local communities face a major task in terms of strengthening human resource capacities, specifically in terms of accepting volunteers, secure communication and coordination in the field. The more citizens are familiar with the procedures and activities of the civil protection system, the more realistically they can be expected to mitigate the consequences of any emergency. Through targeted training, promotional thematic days, educational workshops and thematic round tables, it is necessary to explain to citizens the place and role of citizens in the civil protection system.

REFERENCES

Citizen Education Program in the Civil Protection System, Ministry of Interior 2023.
Law on the Civil Protection System ("Official Gazette" No. 82/15, 118/18, 31/20, 20/21, 114/22).
Toth,I., Boričević,M., Topić, Z., Collection of Works „How we protect ourselves from disasters" (2007.), - Seismology in Search of the Third Answer - Velika Gorica Polytechnic.