Chapter 6
Preparing for the Flood – the City of Sisak in the Midst of COVID-19 Crisis and the Devastating Earthquakes of 2020

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I compare fortune to one of those great rivers, which when in flood covers the plains, sweeping away trees and buildings, bearing away the soil from place to place. Everything flies before it, all yield to its violence, without being able in any way to resist it. But although its nature is like that, it does not follow that people, when the weather becomes fine, should not make preparations, both with canals and defenses, so that in the future the rising waters are directed away, and their force is not so unrestrained and dangerous.

Niccolo Machiavelli, *The Prince*, Chapter 25

Introduction

In modern business, it can be difficult to predict changes occurring in a volatile and dynamic environment, all the more so if such changes happen globally. In the age of the digital economy, rapid technological and communication innovations, the growth of enterprises and other types of organizations demand a highly competitive environment. The COVID-19 crisis has had a significant impact on the stability and even survival of many organizations in both the public and the for-profit sectors. In the spring of 2020, Croatia faced an unprecedented situation caused first by the global health crisis and followed by a series of earthquakes that began with the massive Zagreb earthquake in March 2020. The same natural disaster hit Sisak and Petrinja in December of the same year. The two towns sustained extensive material damage. In an emerging crisis, due to the unpredictability of nature, effective crisis management of the local community is vitally important. Responsible management, based on high-quality strategic planning, should be well- equipped for various situations. It proved to be extremely effective in the case of Sisak. The solidarity shown by the citizens of Croatia in times of COVID-19 crisis and earthquakes is an indication of how formal and informal volunteering activities, as well as numerous organizations (humanitarian but also for-profit), can work together for the local

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community in an attempt to reduce the social and economic problems caused by the crisis /earthquake.

Sisak is one of the most important towns in Croatia, and represents the economic, political, and social center of Sisak - Moslavina County. In the final days of December 2020, a strong earthquake struck not only Sisak but also nearby towns Petrinja and Glina. The disaster had grave material and social consequences. Unfortunately, there were human casualties, too. The ready answer to the emergency – a high-quality strategic plan and good crisis management, which the city of Sisak had, ensured a relatively quick and successful recovery. The local administration undoubtedly played a key role, but the immediate response from the rest of the country (material, financial, informational, etc.) both from various Ministries and from private, public, and non-profit organizations, helped significantly.

The topic of crisis management is hugely important in a time of rapid technological and communication advances, where progress has been noticeable in all domains of life and business. Despite that, the general feeling of unease, fear, and insecurity has lately also been prevalent. The majority of people in Europe have experienced those negative emotions for the past three years, especially during the peak of the COVID-19 pandemic, the consequence of which was an economic and energy crisis. The latest in the series of crises has been the Russian aggression on Ukraine. In addition to the global epidemiological crisis, devastating earthquakes struck Croatia, namely the capital in March 2020, and then Sisak, Petrinja, and Glina, in December of the same year. The recovery from crises caused by natural disasters requires top-quality management and the careful preparation and implementation of such sensitive projects.

Crisis management demands a lot of knowledge and skills, harmonious teamwork, and cooperation between different organizations. It presupposes coordinated engagement of numerous civil services, volunteers from humanitarian organizations, and competent management of donations to overcome the crisis as painlessly as possible. The case study of the city of Sisak is exemplary in its successful management of the crisis, the effective implementation of strategic plans, and the coordination of many stakeholders. The aim of the paper was to show the importance of crisis management, the role of management, in other words, its adequate preparation and implementation by responsible individuals and political bodies. Due to changes in today's world, crises of different origins are quite common occurrences. Therefore, we ought to learn to live and do business anticipating, but also preparing to overcome them with a strategic approach and systematic solutions.

Keywords: risk management, crisis management, crisis leadership, inward resilience, outward resilience

Defining crisis, crisis management and crisis leadership

Paraskevas (2006) mentions the word "crisis" derives from the Greek word *"krisis"*, which in its English translation would be "choice" or "decision". The word "crisis"

has been used interchangeably with a number of other terms, including disaster, business interruption, catastrophe, and emergency (Herbane, 2010). So, analyzing crises according to these and many other definitions, there are several terms that come to attention - choice, and decision. Hence it doesn't immediately imply discomfort or an unfortunate event, but it surely requires prompt and coherent action appropriate for the situation.

Au contraire to that, a congruent definition of a business crisis is most often defined as *"... an unplanned and unwanted process of limited duration and the possibility of influence, which harms the primary goals, with an ambivalent outcome"* (Osmanagić Bedenik, 2010, Birker & Pepels, 2000, Töpfer, 1999). It appears that there is no single solution to a situation as "decision" and "choice" is involved. These call for trade between critical options and acting accordingly, where strategic plans are essentially important. Mikušová and Horváthová (2019) cite Venette when describing the crisis as a process of transformation where the old system can no longer be maintained. Therefore, they stress that there is a need for qualitative change - so, if the change is not needed, the event could more accurately be described as a failure or incident, but not a crisis situation. The **definition of crisis** may differ from country to country and organization to organization due to variations in the level of turbulence in different situations in different corners of the globe (Eliasson & Kreuter, 2000). Hart, Heyse, and Boin (2001) refer to crisis as a progressive process that may not be restricted to one area within a common border, that may ensnare rapidly and emerge with other crises, and its consequences are extended. Generally, three elements are common to a crisis: a threat, surprise, and a short decision time. Coombs and Hollady (2012) highlight the fact that not every crisis is triggered by a "problem". So, we come to two possible crisis modes: normal and in-crisis mode. **Normal-mode** definition of crisis as the Harvard Business School states, is: "a change – either sudden or evolving – that results in an urgent problem that must be addressed immediately" (Luecke & Barton, 2004).

On the other hand, the **crisis-ready-mode** definition of crisis comes forth from political science researchers. Their views are different because they are not constrained in the way that business researchers are by the limitations of organizational or economic thinking. Boin, t'Hart, Stern and Sundelius (2005) considered that construed threat was subjective and arrived at the following definition based on input from other researchers (Rosenthal et al., 1989, Stern, 2003). One definition of a crisis attempts to be all-inclusive, but reads like a narrative and is incredibly prescriptive and limiting: Crises will normally be "triggered" by an incident or another set of circumstances (these can be internal or external to the organization), that exposes the inherent vulnerability that has been embedded within the *system* over time" (Smith & Elliott, 2006) - (1) "a serious threat to the basic structures or the fundamental values and norms of a system, which under time pressure and highly uncertain circumstances necessitates making vital decisions" (Boin et al., 2005). (2) "an unstable or crucial time or state of affairs in which a decisive change is impending" (Merriam-Webster Inc, 2008). (3) "An uncertain

situation possessing latent risks and opportunities that must be resolved within a given timeframe." (Canyon, 2020, p. 6).

In the context of observing the phenomenon of crisis and the need to "manage" the crisis, i.e. to keep the crisis "under control" in some way, we come across the terms of crisis management and crisis leadership. **Crisis leadership** can in general be defined as the capacity of an individual to recognize uncertain situations that possess latent risks and opportunities to ensure systematic preparedness, to discern necessary direction, to make critical decisions, to influence followers and to successfully eliminate or reduce the negative impact while taking full advantage of positive aspects within a given timeframe (Canyon, 2020, p. 7).

Part of the crisis leaders' job is to manage the crisis. There is far more agreement on what crisis management involves, however, there are still two major camps. Some definitions describe **crisis management** as a comprehensive approach involving a cycle that starts with preparedness and prevention and extends through response to recovery and learning (Drennan & McConnell, 2007). Canyon (2022, p. 8) further states that the roles differ considerably and proposes a definition of crisis management that focuses on the measures and methodologies used to recognize, control and limit the damage of a crisis, and its ripple effects. Also, when considered as a process, successful crisis management is presented through several stages (Osmanagić Bedenik, 2010, p. 108):

1. anticipatory crisis management, i.e. preventive action, crisis prevention (introduction of precautionary measures, prevention);
2. identification of the crisis (has it occurred, how to recognize it, how strong is it?);
3. reactive crisis management, i.e. crisis management (what to do in order to "get out" of the crisis successfully?).

Furthermore, crisis management is the process by which an organization deals with a disruptive and unexpected event that threatens to harm the organization, its stakeholders or the general public. Bernstein emphasizes that crisis management is not a single activity. There are several levels of activity, like crisis prevention and preparation (the pre-crisis); planning, training and response (the crisis); recovery, learning and revision (the post-crisis) (Mikušová, Horváthová 2019, p. 1847, Coombs & Hollady, 2012). Observing the crisis through certain stages, the management should approach and manage these processes responsibly and systematically. Related to this, it is necessary to recognize each of the stages and properly understand the challenges the organization faces. Connected to that is the importance of **creating a crisis management process within an organization.**

As Burnett (1998) concludes there seems to be a general agreement (and some empirical support) that the crisis management process contains five basic components: (1) a set of antecedents (internal/external), seen as conditions that determine the degree of control the organization has over its environment, as well as its susceptibility to crisis, (2) a typology of crises (based on susceptibility, control, positive or negative consequences, and structural similarities) that serves as the

initial crisis-detection system, (3) a crisis assessment mechanism that considers the following criteria: (a) the relative threat level, (b) time restrictions, (c) the decision makers involved, (d) the quantity and quality of information, and (e) the short and long-term implications if action/non-action is taken; (4) establishment of an organization structure for managing crisis, that suggests a response pattern both at the individual and organizational level, and (5) a mechanism to assess the success of solutions.

Table 6.1 gives a clear and logical overview of the different elements of crisis management formation. As visible in Table 6.1, there are four consecutive levels of elements where every next level gives more detailed information about the whole crisis management process.

The elements in a crisis management formation

Table 6.1

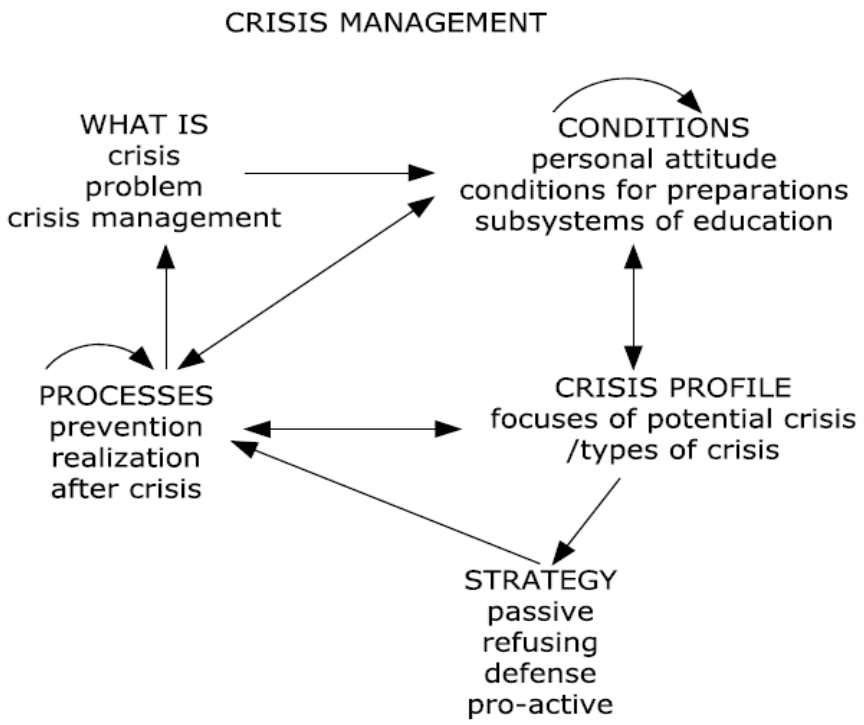
Basic first level	Second level	Third level	Fourth level
What is	Crisis; Problem; Crisis management		
Conditions	Personal attitude;	Relationship to the surroundings; Truth and reality; Human nature; Human activity; Relations between people	
	Conditions for preparation; Subsystems for education	Top management Communication; Plans creation; Strategy, structure; Functional skills; Team work; Psychological resistance	
Crisis profile	Focuses/sources of potential crisis	Types of crisis	Impact; Probability; Time
Strategy	Passive; Refusing; Defence; Pro-active		
Processes	Prevention;	Risk management; Crisis team; Crisis plan; Early warning system; Organizational culture	
	Realisation;	Sources; Tools	
	After crisis	Audit; Credibility	What? Why? Punishment; Change

Source: Mikušová, Horváthová (2019), p. 1850

Figure 6.1. explains crisis management as a network and interprets the connection of the individual elements shown in Table 1. It visually expresses the relations between components of crisis management. Hence, it shows what is the definition of crisis or problem, then what are the conditions or circumstances present in that specific moment. Also, the network shows the crisis profile, strategy and processes that will be taken.

Therefore, crisis management should not be understood as something undesirable, but as an essential and integral part of responsible company management, in which risks and chances are assessed in a multitude of business decisions, and in which crisis situations cannot be excluded, especially with increased uncertainty and rapid changes (Osmanagić Bedenik, 2010, p. 109).

Figure 6.1 Network in crisis management formation



Source: Mikušová & Horváthová, 2019, p. 1851

Rationale for selection (area of activity, COVID-19 Impact)

By the end of the year 2020, marked by the COVID-19 pandemic, another crisis event took place in the central part of Croatia. On Tuesday, 29th December 2020 just before 12:20 p.m. local time, a heavily damaging and destructive earthquake hit central Croatia, causing major human and material damage in Sisak Moslavina County and specifically the cities of Sisak, Petrinja, and Glina. The European Mediterranean Seismological Centre reported the magnitude of the quake to be 6.3 Mw (Associated Press, 2020). The satellite images provided by the European Space Agency showed that the disaster caused shifts of soil with an amplitude of up to 70 centimeters (HINA, 2021). The earthquake was felt in Bosnia and Hercegovina, the Czech Republic, Germany, Hungary, Italy, Montenegro, Romania, Slovakia,

Slovenia, Serbia, and Austria. The maximum felt intensity was estimated at VIII (heavily damaging) to IX (destructive) on the European macroseismic scale, and it is the worst earthquake in Croatia in the last 140 years (UNICEF, 2021). According to the European Mediterranean Seismological Centre, the quake epicenter occurred 10 kilometers (6,25 miles) from the city of Sisak. There has been extensive damage to buildings and infrastructure, traffic as well as disruption of electricity and water supply. In the aftermath, 2,467 buildings have been categorized as unusable and 4,144 are temporarily unusable. Damage was reported to almost 45,000 buildings (Lozančić, 2021). The damage was also extensive on the region's largest hospital and a variety of other public institutions like schools, primary care centers, kindergartens, etc.

Thousands of people have been internally displaced, many in hotels across the country or within relatives. Unfortunately, eight people died, including a 13-year-old girl from Petrinja. Also 36 persons have been seriously injured, and 30 persons were saved from the rubbles UNICEF, 2021). The response to the crisis situation was swift and included local and national government but also many volunteers from different parts of Croatia as well as Europe.

Institutional descriptive statistics

The city of Sisak is historically one of the most important cities in this part of Croatia. The modern town is built on the ruins of the first settlement, under the name Segestica, founded by the Illyrian-Celtic tribes and after that, the Roman town of Siscia was established, at one time being the capital and the most important town of the Roman province of Pannonia (Ministry of Culture of Croatia, 2010). It is one of the largest industrial cities in the history of Croatia thanks to the oil refinery, ironworks, river port and mill, and bakery production.

According to the last census that took place in 2011 the city's total population was 47,768 of which 33,322 live in the urban settlement (DZS, Popis stanovništva 2011.). Sisak is the administrative center of the Sisak-Moslavina County. The city administration is led by Kristina Ikić Baničeк who has been mayor of Sisak since 2013. She is a member of the center-left Social Democratic Party of Croatia. The city administration contains five governing bodies (Upravna Tijela, n.d.), namely: (1) administrative department for administrative, property legal and general affairs, (2) administrative department for budget and finance, (3) administrative department for economy and communal system, (4) administrative department for education, culture, sports, veterans and civil society, (5) administrative department for physical planning and environmental protection.

Inward Resilience Evaluation (risk management, capacity to react to crisis, capacity to adapt to change etc.)

Prior to the earthquake, the city of Sisak had a relatively satisfactory policy of dealing with crisis events. During the second half of 2018, the document "Major Disaster Risk Assessment for the City of Sisak" was adopted and in accordance with

that document, the "Decision on the adoption of the Major Disaster Risk Assessment for the City of Sisak" was enacted (Grad Sisak, 2019). This document analyzes in detail the propositions of action due to possible threats, including earthquakes. Elements elaborated in detail include, but are not limited to: (1) threat warning: an overview of the warning sources, content, warning users, measures, forces, and means per threat; (2) basic parameters of possible earthquakes, (3) role and tasks of the Civil Protection Headquarters of the City of Sisak including relations between the operational forces of the civil protection system, the population of the endangered area and the public, (4) measures and forces determined by the Civil Protection Action Plan of the City of Sisak - human and material resources determined by the Civil Protection Action Plan of the City of Sisak - rescue, evacuation, care, first aid and other necessary care, rehabilitation and more (Grad Sisak, 2019, p. 7).

The earthquake action plan also included an analysis of particularly vulnerable people such as people with disabilities in everyday activities, such as reading and seeing, listening, speaking, moving (walking, climbing stairs, going to the store), dressing, buying groceries or medicines, performing personal hygiene and cleaning living quarters. Furthermore, the plan contained an analysis of residential, business, sports, religious and cultural facilities in which a large number of people may be endangered (Grad Sisak, 2019, p. 39). Furthermore, the capacities and other facilities for shelter in the shelters of basic and enhanced protection were analyzed.

The development of the capacity to react to the crisis predicted an earthquake even more devastating than the one that occurred. In the area of the City of Sisak, relatively intense tectonic movements occur with the highest predicted occurrence of earthquakes of intensity VIII according to the MCS scale. The expected, possible earthquakes of the intensity of VIII MCS would cause, according to the crisis response plan, the following effects: "slight and moderate damage to 8,692 buildings; severe damage to 4,531 buildings and total damage and demolition to 792 buildings. These primary, as well as secondary effects of the earthquake, would have the following consequences: - number of shallow and medium buried persons 1266, - number of deeply buried persons 193, - interruption of electricity, water, gas supply, supply problems and lack of food, - explosions, fires, reduced opportunities in telecommunications, - psychosis, depression and panic of people, loss of safe housing and more" (Grad Sisak, 2019, p. 56). According to these expectations, devastation on the buildings was even higher than anticipated, but luckily with a considerably reduced number of victims. One of the reasons for that was certainly the fact that because of the COVID-19 pandemics schools, kindergartens and similar institutions were closed.

Outward Resilience Evaluation (institutional impact in society, capacity to reach intended goals, collaborative activities etc.)

The overall emergency response and coordination were primarily in the hands of the local authorities, including the city of Sisak, which coordinated civil protection, relief organizations, etc. Good preparation for the crisis event helped the city

administration to decisively act even if they were also affected by the devastation. The City of Sisak undertook crucial tasks for the relief related to the following actions, as defined by the enacted plan (Grad Sisak, 2019, p. 57-62): (1) rescue and clearing organization, including coordination of tasks of all participants, as well as enacting civil protection operational forces system and other data relevant to the operational activities of the Civil Protection Headquarters, (2) organization of protection of critical infrastructure facilities and cooperation with legal entities in order to ensure the continuity of their activities, (3) organization of firefighting (owners, tasks, responsibilities and coordination), 4) organization of traffic regulation during interventions, (5) organization of medical care, (6) organization of veterinary care, (7) organization of evacuation, (8) organization of rescue and evacuation of vulnerable groups, (9) organization of children care, (10) identification of the dead, (11) organization of hygienic and epidemiological protection, (12) organization of providing food and drinking water, (13) organization of information centers, (14) organization of reception of assistance, (15) organization of psychological assistance, (16) taking over the costs of engaged legal entities and regular services.

Besides the city of Sisak two other actors proved to be valuable for the population relief. First is the Government of Croatia who declared a disaster in Sisak-Moslavina County and parts of Zagreb County and Karlovac Country. The Government of Croatia formed the Government Coordination Body, led by the Deputy Prime Minister, to coordinate the national response. Also, the government released 16 million EUR from the state budget for immediate intervention and assistance to the affected areas. Further on, the European Commission pledged to support and the first relief arrived through the EU mechanism of civil protection (UNICEF, 2021, p. 4). In addition to that, the army cleared rubble from the streets and together with firefighters distributed water and food.

Secondly, there was a significant solidarity demonstrated by individuals, associations and companies. Instantaneously after the earthquake an unprompted bottom-up humanitarian movement started in Croatia. Significant support was also provided by the Croatian Red Cross to whom the authorities mostly relied to deliver humanitarian aid to the affected population. Also, numerous volunteers from all parts of Croatia, including ultras groups who support different football clubs, came to the area and helped the population in all possible ways.

Expert evaluation of governance performance in the crisis context

In order to assess the local governance performance in times of crisis we used 4 indicators: preparedness, agility, robustness and impact on society (Gherghina, Volintiru & Sigurjonsson, 2022). Issue of preparedness is especially problematic in the context of earthquakes since these events do not show any periodicity of occurrence, nor do they occur by any particular rule and therefore cannot be predicted with a reasonable certainty. The seismic hazard is thus mitigated solely by prevention. Regardless of that fact, the City of Sisak has anticipated the primary and

secondary effects of the earthquake. The primary effects are demolition of buildings, damage to infrastructure, people trapped in demolished buildings, utility failures, while the secondary effects are fires, floods, landslides, diseases, etc. The city was well prepared for the crisis situation, with an adequate approach to risk assessment and management.

Although the preparation for the crisis situation was systematic and detailed, the shock and the devastation that the earthquake brought managed to paralyze the city in a short period after the event. The initial response was therefore not so agile as it was indicated in the preparation phase. The main reason for that was the fact that the city infrastructure suffered heavy devastation. This is perhaps best described by the words of the mayor Kristina Ikić Baniček who exclaimed that: "half of the city hall has collapsed". Some of the homes of the people in the city administration were also damaged and members of their families suffered injuries.

In respect to the issue of robustness, once the first shock was over, in a matter of hours, the city administration established crisis headquarters and conducted procedures as defined by the response plan in the Major disaster risk assessment document. The organization of the relief was efficient and the role of the city of Sisak in respect to this crisis event proved to be robust.

From the perspective of impact on society, the city of Sisak provided strong support to the needs of the citizens after the devastating earthquake, thus raising the confidence of the population in their local government. The preparation and execution of emergency reaction in the case of the city of Sisak can serve as a case for other bodies of local authority who find themselves in the midst of a crisis situation.

The crisis situation caused by an earthquake is in a way different from a health crisis because of its immediate effect which does not allow time for reflection and adjustment of responses. Because of this specificity we could argue that the long-term effects are not so severe as the effects of the COVID-19 pandemic. However, in this case even after three months the constant aftershocks were affecting populations mental health causing strong emotional and physiological reactions. Needless to say, the COVID-19 outbreak complicated the relief operation since the precaution measures and physical distance had to be maintained by the affected population as well as the response teams.

Conclusion

In times of crisis, management faces a number of issues. Challenges and problems require quick and high-quality solutions that have far-reaching consequences. A similar situation occurred during the earthquake in Sisak, which was well-prepared for the coming crisis. This was not the case for the Zagreb earthquake, which happened unexpectedly. Crisis management should be able to deal with unexpected and complex situations of emerging problems. It should involve thorough

preparation and plan, a strategy of people and resources. It is precisely in situations of danger that crisis leadership questions its purpose and effectiveness.

The city of Sisak has demonstrated good preparation and implementation, and the whole of Croatia, i.e. self-organized citizens, individual organizations and state institutions, have acted in an organized and systematic way towards helping the affected individuals, families and areas. The question arises whether we will be more exposed to crises in the future with technological development and overall progress, whether crises will become a part of our daily lives and our reality: the health, economic and energy crisis, etc.

We do not know what the future holds in store for us. Possibly a new pandemic, natural disasters as a consequence of extreme weather conditions, or nuclear war threats. It is obvious that future organizations will be led by the management whose philosophy will be trying to foresee and gain knowledge of "crises" as situations that can be expected. Thus, the future of management and organization leadership will definitely involve the segment of crisis management, but also crisis leadership.

When both changes and crises become expected events, it is imperative to prepare and train the employees on how to act in unexpected situations through teleworking or virtual organizations' teamwork. One should also promote ideas of solidarity and sustainability, which can ensure the growth and development of organizations in precarious times.

Questions/Tasks/Debate topics for classroom discussion

- What is the definition of crisis?
- What are the elements of the crisis or its key phases?
- Define the concept of crisis management.
- What are the specific historical, economic and sociological characteristics of the city of Sisak?
- Who are the key stakeholders in crisis management in the city of Sisak case?
- To what extent does the crisis management of the city of Sisak differ from another city in times of crisis?
- What are the particular features of crisis management in the management of the city of Sisak at the time of earthquakes?
- What are the key factors in the success of the elasticity of crisis management in Sisak?
- What was the role of management or quality planning as a strategic managerial function and preparation for the earthquake and the management of the crisis itself?
- How do you deal with crises in your personal life and to what extent is it possible to prepare for crises?

- What are the key skills and values important for overcoming personal and professional crises?
- Explain how the external environment affects the management of the city where you live and study.
- To what extent has the COVID-19 pandemic affected your personal life and how did you manage that crisis? Explain what benefits you have achieved by developing new skills and new knowledge in that precarious situation.

Further reading

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