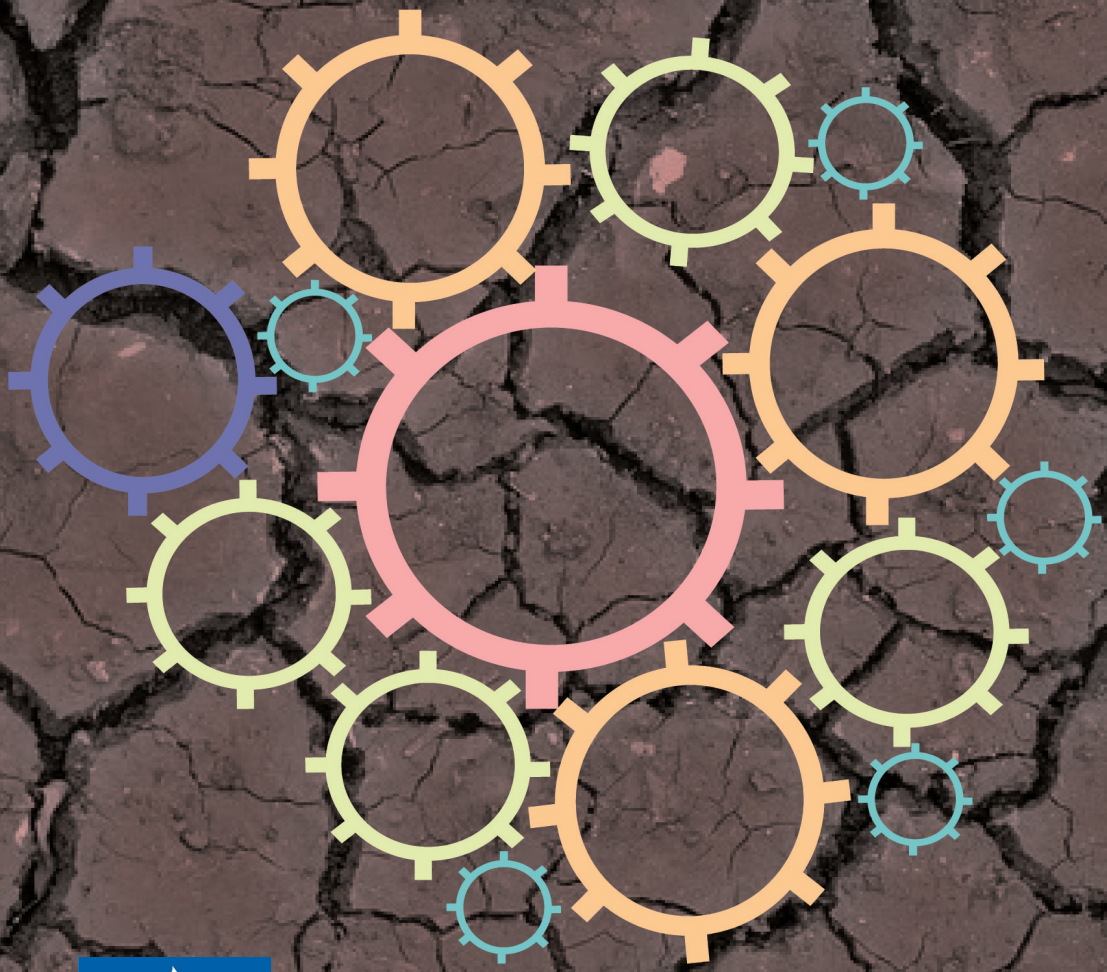
# STRATEGIC MANAGEMENT OF CRISIS AND DISASTER

Dr. Naci BÜYÜKKARACIĞAN



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## PREFACE

Disasters are natural, technological or anthropogenic events that cause people to suffer physical, economic, social and environmental losses and affect communities by stopping or disrupting normal life and human activities. Disasters occur anytime and anywhere in different ways such as earthquakes, bird flu, Sars, avalanches, storms, floods, fire, hazardous materials, ship and plane crashes, and terror. In addition, the Corona virus outbreak that occurred in December 2019 is also considered a disaster. Disasters sometimes take days or weeks to develop, and sometimes they develop suddenly. The strategic disaster plan is important in minimizing the loss of life and property.

Natural disasters occurring in the world have significant negative effects on people, cities and economy. Especially in the world, while costs increase, incomes decrease. However, forest fires, epidemics and disasters of war is affecting people's lives as human origin. Disaster is an event that affects the socioeconomic and socio-psychological status of people. The number of disasters faced by humanity is increasing day by day with the global climate change caused by developing technology and related industrialization

The Marmara and Düzce earthquake disasters that occurred in 1999 and the Elazığ and İzmir earthquake disasters that occurred in 2020 in our country and the large number of flood disasters revealed the importance of a strategic disaster management system. It should be ensured that all public institutions and organizations and non-

governmental organizations within Strategic Disaster Management continue their activities with the understanding of total quality management.

The classical disaster management plan is perceived as first aid and response activities implemented after a disaster, and success is more often evaluated accordingly. Disaster management plans should be reconstructed before, during and after the disaster by abandoning such policies, which are mostly dressing measures. Crisis management requires immediate (conjectorial) behavior since it is mostly post-event, while risk management requires strategic behavior since it is more planning-based. Strategic crisis and disaster management, which are the subject of our study, have been tried to solve these problems.

Dr. Naci BÜYÜKKARACIĞAN

Konya- 2020

**CONTENTS**

## INTRODUCTION

Disasters are the most destructive events that have occurred in our world throughout human history and whose effects have not disappeared for many years. The frequency and number of disasters are constantly increasing due to reasons such as the rapid increase in the human population, the destruction of nature by humans, unplanned urbanization, rapid industrialization with technological developments, and the intense damage to the environment and nature. Disasters can seriously affect the economic, financial and social structure of a country, depending on their severity and the areas they affect. The fact that public administrators do not have sufficient disaster awareness and do not allocate sufficient resources for disaster management due to economic reasons cause disasters to affect these countries at a much more destructive level (Çeber, 2005).

Turkey is faced with disaster and most remaining among the countries receiving large losses from disasters. As a result, natural disasters are one of the constant realities of our country. Especially earthquakes and other natural disasters still threaten a large part of our country. According to the official records of the Marmara Earthquakes that took place on August 17, 1999 and November 12, 1999, 20000 people lost their lives, many of our people were injured, unemployed and homeless, and over 30000 buildings were damaged. One of the main reasons for the large losses is the inadequacy of urbanization policies. In addition to the high population density in the cities, it is observed that security priority is neglected due to various reasons while making

settlement and housing decisions. Undoubtedly, one of the most effective methods in reducing the damages of natural disasters is the minimization of possible losses by risk reduction practices to be carried out before the disaster occurs. (Genç, 2007).

Disasters such as floods, avalanches, landslides and fires are common types of disasters in our country. However, earthquakes take the first place when evaluated in terms of their destructive effects. Our country ranks ninth in the world in terms of human loss due to earthquakes and fifth in terms of the total number of people affected. In our country, an earthquake with a magnitude of 5 to 6 is experienced every year on average. Looking at the earthquake zone map, 70% of its land and 76% of industrial facilities are I. and II. degree is located on earthquake zones. In disasters, on average, 1,000 people die each year and 9,000 houses are damaged (AFAD, 2012).

The magnitude of the disaster, the population density and the distance to the settlement area, underdevelopment, population growth rate, rapid and uncontrolled construction in areas with high disaster risk, lack of technical, material and workmanship, unsafe and unqualified structure, not being controlled, industrialization, destruction of forests, ignorance and lack of education and indifference of society increase the severity of disaster (Wamsler, 2007). The factors other than the magnitude of the event and the distance to the areas where the population is concentrated develop depending on human activities. As a result, the development of human-induced activities in the right or

wrong direction directly affects the impact of disasters. (Ergünay, 1996).

The fact that it lives with disasters in the world has made it necessary to establish a disaster management mechanism. However, in most of the world, real disaster management is still perceived as post-disaster debris removal and daily aid to the victims, and a system that includes totalitarian and pre-disaster has not been developed. The disaster management structure is in a situation where the authorities and responsibilities of institutions are intertwined, disconnected from each other, a little more mixed and renewed after each disaster. Disaster management is a form of management that involves more than one discipline, requires special expertise and resources, has many stages and requires a long time. It is a common acceptance that the countries that want to develop and develop must take precautions against disasters, establish a disaster management model suitable for their management structures, and most importantly, allocate sufficient and continuous financial resources. (Çeber, 2005).

Our country ranks ninth in the world in terms of human loss in earthquakes and fifth in terms of the total number of people affected. In our country, an earthquake of 5 to 6 magnitudes is experienced every year on average. In addition, it causes great damages in our country, especially floods. According to the statistics of the last 60 years; It is seen that direct and indirect economic losses caused by disasters are up to 3% of GNP. This situation reveals the importance of disaster management for our country.

In 2017, according to the Emergency Events Database (EM-DAT) data, 318 natural disasters occurred in 122 countries, 9.503 people lost their lives in these disasters, and 96 million people were affected by disasters. In addition, the disasters that occurred in 2017 caused an economic loss of 314 billion dollars. Although the number of natural disasters decreased in 2017 compared to previous years, economic losses tend to increase. In 2018, according to the report of the Internal Displacement Monitoring Center (IDMC), 11.8 million people worldwide left the region where they lived for the first time in 2017 due to conflict and violence, and 18.8 million people due to disasters. has. Geological, meteorological and topographical structure because of Turkey, is located in a geographical nature often exposed to disasters. This geography, including earthquakes, particularly in Turkey, landslides, floods, leaving some face time with various disasters such as rock falls and avalanches. Turkey earthquake in the world in terms of "high risk" is situated in a geography that could be described as. on average, it experienced an earthquake in Turkey that led to the loss of life and property on a wide range of five years (AFAD, 2019).

It is better understood that the damages that may occur as a result of natural, technological or human-induced disasters can be of enormous dimensions in terms of human life, property and environment. Material and moral losses are required by every society to have an action plan and to give importance to mitigation efforts in the face of disasters.

Crises have become a normal part of human life today. In parallel with the globalization trends in the world, the change in the definitions of state and public administration and the intensive relations system formed, the diversification of crisis situations caused by the shrinkage of the world and the frequency of their emergence have caused crisis management to become important. In countries such as Turkey, communities all or a large part of the negative affects of terrorism, floods, natural disasters such as earthquakes, major fires, the importance of crisis management because it causes traffic and major industrial accidents of life and property losses have increased significantly in the emerging crises in a comprehensive crisis management It has become mandatory. Since crises create chaotic situations and chaos that organizations and societies may encounter, there is no method that can completely avoid the possibility of a crisis (Büyükkaracığan, 2016).

The concept of crisis, which depicts a dangerous period that emerged unforeseen and the situation that is very difficult to take measures during this period, actually includes some symptoms in the pre-crisis period. Crisis period, on the other hand, can be defined as a tense process that, although it gives pre-indications, cannot be prevented completely, often occurs suddenly, causing the asset management of institutions and organizations to be locked, and instability due to the loss of control of administrative functions. Today, crisis periods are constantly experienced in all areas of daily life and these situations are generally; They emerge as crises arising from economic,

psychological, political, social and natural disasters. Of these, the political and especially the social ones are mostly realized in the public sphere. In times of crisis, the general order of the society is disrupted and dangerous situations that cause negative physical, economic and social consequences of the people, a pressure and tension different from the normal occur. In these cases, the administrations have difficulty in making correct and fast decisions and in actively implementing the decisions taken.

Although there are different types of crisis in our country, crisis management causes blockages and problems in various political, social and economic crises due to its focus only on disaster management. Disaster management is a sub-branch of crisis management; crisis management is a more comprehensive process management than disaster management. It includes a more coordinated and planned management covering pre-crisis, crisis moment and post-crisis. (Demir, 2011).

There may be crises in economic and social life, as well as state administration, from time to time, caused by economic and natural disasters, etc. may face crises in different areas. The crises encountered in question may be crises that can be resolved in a short time, or they may be long lasting depending on their effects and dimensions. In crisis situations, the state organization must have the ability to manage the crisis and the management must manage the crisis before the crisis situation turns into a crisis of the management.

Disaster-disaster perception goes together in humans due to its effect on the physical structures important for the environment and humanity. Many legends that have been said since ancient times describe the cities destroyed as a result of the eruption of volcanoes and the countries swept by the floods. In the Noah's Flood, it is mentioned that the whole earth was flooded. According to our Constitution, natural disasters are among the causes of extraordinary situations. In such cases, it aims to mobilize all the means of the state and help those who suffer from disasters. The scope of the legal disaster definition can be expanded or narrowed. People first had to seek and build housing to protect themselves from natural phenomena. (Güler ve Çobanoğlu, 1994).

Today, the cooperation of the civil society, the state and the business world is obligatory in order for a system that is resistant to disasters and focused on reducing risks. In crisis and disaster management, it is important to prepare strategies and plans with a participatory and very different approach, in order to increase their validity and applicability. In the strategic crisis and disaster management plan prepared with a participatory approach and based on a strong ground taking into account the national and international conjuncture; 6 themes and purposes serving these themes should be included as "Coordination and Communication, Risk Reduction, During and After Disasters, Social Awareness, International Effectiveness, Institutional Capacity". (AFAD, 2019).

# 1. CRISIS CONCEPT

## 1.1. Crisis Definition

The concept of crisis expresses the periods such as extraordinary situations, emergencies, disasters and has different definitions, in the Turkish Language Society (TDK) dictionary defined as "the difficult period, crisis, depression seen in a country or between countries, in the life of a society or an organization” (TDK, 2020).

In terms of management science, crisis can be expressed as "special situations that threaten the high-level goals of an organization, endanger the existence of the organization, and where the organization must react quickly."

According to another definition “Crisis; It is a situation of tension that is unexpected and unpredictable, needs to be answered quickly and urgently, and threatens the aims, objectives, plans, strategies and assumptions of the organization by making the prevention and adaptation mechanisms effective. " (Okay ve Okay, 2002).

The crisis can also be described as a situation that creates tension where the organization's crisis prediction and prevention mechanisms are insufficient threatens the high-level targets of an organization, sometimes endangers the organisation's life and requires an urgent response (Can, 1997).

Crisis creates a threat to the goals and principles of the institution, threatens the employees of the institution because the time and how it will occur is unknown, endangers the continuity of corporate activities due to its consequences, can be overcome with the least damage with pre-planned planning and timely intervention, continues for a certain period of time and It is the totality of unpredictable events (Ataman, 2001).

Considering the above-mentioned definitions, a comprehensive definition of crisis can be made as “Crisis negatively affects all kinds of goals and interests of a country, its political, economic, socio-cultural life; arising suddenly and unexpectedly; time pressure to make decisions; highly stressful; It is very difficult to prevent it completely, although precautions can be taken; can be turned into opportunities when managed well; aimed at restoring the normal situation that has deteriorated; it is a process of confusion and difficulties. " (Filiz, 2007).

### 1.2. Characteristics of the Crisis

The most prominent feature of the crisis is uncertainty. The crisis puts the society in a rather uncertain environment, thus creating an environment of great uncertainty for both the society and the administrators. For example; Advanced Earthquake Warning System established in Istanbul in our country: With the help of "Secty Life Boss", although an earthquake disaster that will occur 8-48 seconds depending on the distance from the center, it cannot be prevented but

it cannot be prevented by taking various measures. passable. As with the earthquake warning system, predicting crises is very difficult and costly.

The crisis creates a very tense and irregular environment, and this environment of disorder is effective in the society, starting with the symptoms that emerged in the pre-crisis period and until the crisis damages are eliminated. In addition to creating an environment of uncertainty in terms of management, three basic features of the crisis can be named as threat, time pressure and surprise. Among these, threat refers to the possible losses that may occur as a result of the crisis. The crisis threatens the goals of the bodies governing society and the governance system. The damages of these threats in terms of scope and magnitude may differ according to the crisis types, the formation of the crisis, the state of the administration at the time of the crisis and the reactions of the society to the events.

Society's reaction to crisis is an important factor that determines the development of the crisis, the measures to be taken and its results. Time pressure can be expressed as the difference between the current time and the last moment to be decided. It should not be forgotten that one of the main differences of the crisis from ordinary situations is the intense pressure of time pressure on managers and the responsibility of making decisions quickly. Managers do not have the opportunity to conduct detailed examination, research and consultation during the crisis. Surprise expressed in the characteristics of the crisis can be expressed as unforeseen changes that cause shock in society and have

negative effects. Surprise occurs as a result of errors in the management of the environment for which they are responsible, information gathering, evaluation and reporting system.

Basic features of organizational crisis; The crisis situation is not predictable, the organization's prediction and prevention mechanisms are inadequate, threatens the organization's purpose and existence, does not have enough information and time to decide on the steps to be taken to overcome it, requires urgent intervention and creates tension in decision makers (Can 1997).

Other features of the crisis can be listed as follows:

- Although crises can be prevented in advance, it is very difficult to prevent them completely.
- Crises threaten the existence and goals of the organization.
- There is a shortage of time, information and resources required for action in times of crisis.
- Crises create tension in decision makers.
- When the crisis is managed well, it can be turned into an opportunity.
- Crisis threatens high-level goals and even the existence of society.
- Prevention and prediction mechanisms of the society are insufficient during the crisis period.
- Crisis requires urgent intervention and creates time pressure especially on managers.

- The crisis is very difficult to control.
- The crisis process has the characteristic of being a vital turning point.
- Crisis affects the system psychologically and physically in terms of its current or future work.

Today, developing economic conditions and globalization and economic, social and political crises in a region can cause negativity in very wide geographies of the world. For this reason, it is important for institutions and organizations to develop modern management approaches and to take measures against crises. Whatever the reason may be, calculating the risks, which are the main causes of crises that may occur, and taking measures accordingly are expressed as essential features. Managing risk is easier, cheaper, and has less duration than crisis management. Business managements are required to frequently use information, technology, being open to innovations in the organization, and systematic functional features in risk and crisis management (Yaylacı, 2015).

In order to explain the concept of crisis, one of the concepts that should be emphasized before explaining its dimensions and points to be emphasized is "chaos". Pre-crisis, sudden and after a certain period of time are mostly "chaotic" moments. Considering the natural disasters, especially the crisis displays a "chaotic" appearance after and suddenly. This is such a situation that things get mixed up and the order turns upside down, albeit temporarily. Management is most needed in such situations, and managerial skills such as leadership,

using authority in place, and communication gain their true meaning in such situations (Demirtaş, 2000).

Chaos theory brings different definitions from the defined, coincidental mechanical universe of modernity, from the straight-line geometry. Accordingly, natural systems appear to have fractal features ontologically (supra-sensory, non-material structure, incomprehensible with the senses) and non-linear in terms of dynamics. Chaos theory states that when natural systems meet, there is a state of chaos and it is not possible to talk about controllable causations at this point. When different systems encounter, the interaction between them cannot be measured in a controlled manner.
It is not clear which variable interacts with what. At the same time, the consequences of modernity's intervention in a variable cannot be foreseen. (Aslanooğlu, 1998).

### 1.3. Types of Crisis

Crisis types can be diversified directly depending on the resources that created the crisis. However, in general today, it can talk about two types of crisis. These are the radioactive hazard in the nuclear field, the crises arising from the organization itself, in other words the nature of the business or service, and the other is the crises that are caused by external factors and are very difficult to predict.

### *a) Possible Crises*

Earthquake, fire, occupational accidents, explosion, radioactive leakage, pollution problem, strikes in raw material companies, transport strikes, product decline, competition-lower price, better product, alternative product, government laws, restrictions, tax changes, loss in major export markets Decline in stocks, cost increase, failure to run advertisements due to strike on newspapers or TV, change of government, war, civil war, military coup, excessive imports, price reduction, death of company leader, loss of market or important deals, buyer boycotts.

### *b) Unforeseen Crises*

Sabotage, insurrection damage, earthquake, hostage or kidnapping of the company leader, assassination of the leader of the establishment, newspaper and TV news that may cause indignation in the society, research by government commissions, scandals due to the behavior of the establishment leader, damage to the factory from external factors, industrial espionage, plans, patterns, theft of computer records, competitors passing you in the market with the same product, service, product illegality, independent researchers - claiming low product quality, forcing consumers or pressure groups to change

## 1.4. Factors Causing the Crisis

Factors that cause a crisis in any management are factors that are beyond the control of the management, completely independent,

uncontrollable and mostly accepted as reference by the management. In addition to emerging at an unforeseen time, crises can occur in different ways, sometimes showing symptoms in the pre-crisis period. Crises are events with complex processes that occur with the combination of many factors. Therefore, although the factors that cause crises to occur vary according to the structure of the management and the conditions in which it is located, the most important point to be focused on is the change that is the main source of crises. The most important feature in change is its speed. A rapid change in governance and the inability of the administrations to keep up with this speed are the main causes of the crises ( Demir, 2011).

The main factors that cause the crisis can be considered in three classes as the interaction of other internal and external factors, as well as environmental factors and arising from within the management.

Factors such as rapid environmental changes, insufficiency of the organization's information resources, information out-of-date, unnecessary information, insufficient communication and coordination, lack of planning, existence of different value systems and accordingly increasing administrative conflict can be listed as various reasons that bring about crises (Tutar, 2011).

**a) Environmental Factors**

Environmental factors play the most important role in the management of the crisis. The dynamic and constantly changing environment affects the level of complexity and uncertainty that the

management will face, reducing the accuracy of managerial decisions and may lead to a crisis situation (Demirtaş, 2000).

Since the administrations are in contact with their environment as an open system, the chaos and uncertainties that occur in the external environment cause the management-environment relationship to be locked, which causes crises. Crises that occur due to the relationship between management and environment may arise from the environmental demands exceeding the capabilities and resources of the organization, as well as the failure of the organization to meet its needs and expectations from the external environment. Therefore, in order to keep their organizations away from possible dangers and to benefit from crisis opportunities, they should live in harmony with their environment and closely follow the developments that occur. In other words, the administrations operate by obtaining resources from the environment in which they operate, and they produce and offer goods and services to their environment (Tutar, 2011) .

Elements of the environment such as economic, technological, socio-cultural, legal, political, international relations and the speed of natural developments that occur in any part of the world due to globalization also affect our country and may cause a crisis as a result. Especially traditionalist administrations cannot adapt to such developments and the pace of change. The degree of commitment of administrations to their environment increases the likelihood of encountering a crisis and the severity of crises that will occur. Today, especially the developments in information and communication technologies and the

phenomenon of globalization mentioned above make governments more dependent on the outside.

International relations in the world and the administrative structure of the country, social, political and economic situation, political, military, legal changes, resource scarcity, economic crises such as high inflation, devaluation, unemployment, instability, technological changes and innovations, floods in the country or the region Natural disasters such as earthquakes and fires and large-scale accidents, security and terrorism problems, social explosions and international threats and dangers can be counted as external crisis factors that negatively affect organizations (Demir, 2011).

### a1) Economic Factors

Indicators of instability in the economy such as large price changes, deterioration of the balance of supply and demand, deterioration in the balance of payments of the country, deterioration in the purchasing power of the people, high inflation, continuous increase in the unemployment rate are economic factors affecting the administration. Factors such as the state of natural resources and the level of utilization of these resources, the general structure of the economic system, employment status, and competitive characteristics form the economic environment of administrations. Any negative changes in these factors cause the crisis to emerge (Tutar, 2011).

### a2) Natural Factors

Natural events such as earthquakes, floods, storms, tsunamis, avalanches, landslides, drought cause a crisis by negatively affecting the society due to the negative results they cause. Nature-induced crises adversely affect residential areas, cause loss of life and property, thus limiting social life. Although the main causes of such crises are natural events, the most important factor in the growth of crises is human. Unplanned urbanization and industrialization etc. Human beings change the nature of nature negatively with their activities. Due to its geographical and geological structure, such human activities increase the number and destructive effect of natural disasters that occur in regions such as our country where earthquakes and flood events are common. The main reason why flood events in our country have a devastating effect in city centers is the destruction of green areas due to unplanned and unplanned urbanization and the closure of the stream beds by building on them. As a result, although natural disasters are inevitable, human-induced effects adversely affect the effects of such disasters and their frequency of occurrence.

### a3) Teknolojik yenilikler

Özellikle 19. y.y.da başlayan sanayileşme hareketleri ile birlikte, mal ve hizmet üretimindeki teknolojik değişimler, işletmelerin söz konusu teknolojik yenilikleri takip edip uygulamalarını zorunlu hale getirmiştir. Teknolojiye uyum sağlama konusunda yetersiz kalan kurumlar krizle karşı karşıya kalmaları kaçınılmazdır.

### a4) Social cultural factors

The administrations have to constantly monitor the moral and religious value systems, sociocultural structures and the change of these elements of the societies they are responsible for or operate in and renew their positions in the face of these changes. Otherwise, crises are inevitable when changes are not noticed and action cannot be taken by the management.

The reactions of the society to the events, the reactions they show against the changes in the social structure are the social and cultural factors that increase the severity of the crisis during the crisis. For example, the reaction of the Turkish people to any natural disaster will be different from the reaction of the Norwegian people. Since Turkish people are more emotional, it is easier for panic to occur during a disaster crisis. It is important for administrators to effectively manage the crisis, taking into account the sociocultural structures and sensitivities of the societies before, during and after the crisis.

### a5) International relations

As a result of globalization, crises may occur in administrations due to the disappearance of political borders. In today's world where communication and information dissemination are beyond borders, the phenomenon of globalization manifests itself not only economically but also politically, turning the national states into a small village and creating new common goals and values in the name of the future and order of the world (Kasapçopur, 2006). .

As a natural result of globalization, national organizations can carry out international activities by crossing borders, and at the same time, a foreign organization can be a rival within national borders. In this context, the organization that wants to achieve success has to consider the global situation as well as national and regional conditions while creating its main goals and plans. In other words, in order to be successful and to compete in international conditions, an organization must reach the generally accepted universal standards among all organizations in the world operating in that sector.

**b) Organizational Factors**

In addition to environmental factors, the dynamics within the management itself also cause crises. Especially the structure of the management, its quality, its ability to gather and evaluate information, and its interaction with its environment can be listed as internal factors that cause the crisis.

**b1) Administrative structure**

It consists of many components such as the concentration of the authorities in the center, the use of authority and authority, the organizational mechanism, the size of the control area, the management approach, and the negativities occurring in one or more of these components may confront the management with a crisis situation.

Among these, the increase in the centralization situation is seen as the main cause of the crisis in administrations due to the fact that it causes a cumbersome bureaucracy understanding that does not allow managers to use flexible decision-making power or authority, aggravates the speed of execution of the business and leaves the management in a difficult situation in cases where urgent reactions are required. In addition to this, well-defined or inoperable hierarchical structures are also one of the secondary factors that cause the crisis.

Although strict control of the employees is necessary for the functioning of the organization, the employees feel themselves under pressure, as well as the inability to create a healthy communication environment, it can be a crisis threat because it causes tension, stress, tension and uneasiness in the employees.

**b2) The nature of management**

Failure of senior managers to follow environmental changes, their inability and failure in collecting, interpreting and evaluating data related to developing events can also cause crises in organizations or society. The important thing is the attitude of managers against the crisis, as well as their successful management in ordinary situations. In fact, since crisis situations can occur in various ways for various reasons, managers who are successful in a crisis situation may be inadequate and fail when faced with another crisis (Kasapçopur, 2006).

### b3) Inability to collect and evaluate information

The deficiencies seen in the management of obtaining data and converting the obtained data into information are one of the reasons for the crisis in organizations. Good management should be able to see the pre-crisis symptoms. However, it is not enough to perceive the crisis symptoms alone, but it is also very important to evaluate these data and convert them into information. In some cases, failure to take the necessary precautions is due to the logic of covering up internal and non-management pressures or developments rather than the inadequacy of managers, and managers may be exposed to various pressures (Özmaya, 2010).

Indecision or wrong decisions that arise in times of crisis and are life-threatening for the management are also one of the important evaluation problems. Managements must remove uncertainty or reduce it to the lowest possible level in order to resist the crisis. When the collection and evaluation of information is insufficient, or as a result of a lack of information, the management's decision processes will become difficult.

### b4) Management culture

Today, developments in technology cause an increase in productivity, the human factor in management and negative effects on the social environment. The management culture contains common beliefs and values as well as the relationships of the individuals who make up the management with each other and with the environment. The

deficiencies in managerial ties in the management culture, the problems in the motivation of the employed people, their adaptation to the environment and change, and the inability to take measures against them are one of the crisis factors.

**b5) Life phase of management**

Although the failure to develop behavioral patterns in accordance with the basic dynamics of the administration in the birth, development and maturation, regression and collapse phases increases the risk of encountering a crisis, it has been observed that the crisis phase that the institution will encounter most is the development stage (Tutar, 2011).

The main reason that crises usually arise at this stage is that the exchange with the environment is at the highest level in order to meet the resource needs in financial, physical and social areas, and at the same time to make use of opportunities. In addition, exceeding certain limits without taking certain measures during the development periods of the administrations may disrupt the management balance in the areas of authority, responsibility, decision-making and supervision (Karlık, 2007).

**c) Interaction of internal and external factors**

Internal management factors and environmental factors that cause the crisis mostly affect each other negatively. However, the interaction between internal and environmental factors puts management in crisis depends on the degree of dependence between management and the

environment. In other words, the probability of crises occurring is directly proportional to the severity of the crises and the degree of dependence of the administration on its environment. The harmony of external environmental conditions and management relations, the environment's responsiveness to the needs and enabling administrations to achieve their goals reduce the possibility of encountering a crisis (Demir, 2011).

### 1.5. Stages of the Crisis

Crisis is a process that consists of different phases, but each process is full of chaos and difficulties. The length of the phases that bring about the crisis depends on the type of crisis, its cause and size. It is necessary to analyze crises in stages in order to detect crises, to prevent them from growing and to eliminate them after the crisis emerges and to take measures (Filiz, 2007). The crisis process consists of pre-crisis, moment of crisis and post-crisis stages.

#### a) Pre-crisis

The pre-crisis period is the period before the crisis occurs. At this stage, signals emerged about situations that threaten the organization's purpose and existence. Problems in the organization and its environmental relations have started to appear. However, the information systems of the organization cannot receive the crisis signals sufficiently and do not convey them to the management. Therefore, senior management cannot take the necessary measures for the approaching crisis due to the lack of information flow. Since the

problems do not threaten the life and goals of the organization, the management takes decisions with insufficient knowledge, based on previous experiences. As the severity of the crisis situation increases, organizational problems become more pronounced and management panic begins. Since sufficient information is not available at this stage, the accuracy of the decisions to be taken may not be complete.

During this period, crises give symptoms. In this period, the symptoms of the crisis, which are indicative of the reasons for the formation of the crises, emerge and end with the beginning of the consequences of the crisis to be felt. The pre-crisis period consists of three stages: blindness, non-action and wrong actions (Tuz, 2008).

**Blindness:** It is the name given to the period in which the crisis should be recognized. In this period, insufficiencies, gaps and shortcomings begin in management. Since the administration is insensitive to the problems it encounters, it cannot perceive it as crisis symptoms and therefore cannot produce solutions.

**Failure to take action:** The performance of the management decreases due to the problems encountered, but again, because the crisis is not perceived, measures cannot be taken and action cannot be taken. As a result, the symptoms of the crisis in the organization increase and worsen, productivity and quality decrease. There is low performance management.

**Wrong action:** Problems causing the crisis are perceived by the management, but alternative methods cannot be developed for solutions, ordinary solutions are tried to be applied. Incorrect methods of problem solving decrease the performance of the management, as a result of which motivation, restlessness and tension occur. As a result of this negative atmosphere in the organization, the crisis begins.

“Pre-crisis periods are generally periods of entropy (disorder, non-solution). Unable to keep up with change, the organization is gradually dragged into a deadlock. In the structure characterized as a system, there is a tendency towards disruption of activities, loss of balance, confusion and disruption, and eventually the system's activities to cease. The concept expressing this tendency is "entropy." (Amount, 2011).

Unlike the private sector, entropy is more likely to be seen in bureaucratic life and in the public sector where a closed management system is applied. In organizations where management irregularity and insolvency prevails, signs of crisis cannot be perceived due to the lack of managers' inability to take initiative and the insensitivity of employees to take their jobs. Organizations that fail to perceive the symptoms of the crisis cannot seize an opportunity to prevent the crisis. In this period, it is important to perceive the symptoms of the crisis, to prevent or reduce the severity of the crisis, and to take the necessary measures against the crisis on time.

**b) Moment of crisis**

The moment of crisis is the period when the consequences of the crisis emerge and are experienced violently and activities are carried out to end it. During this period, the crisis makes its impact felt most intensely on managers, employees and citizens. In the same period, after the first crisis shock is over, necessary measures are taken according to the type and magnitude of the crisis, and efforts are made to overcome the effects of the crisis. The moment of crisis consists of the climbing phase, the cessation of climbing and the regression phases. During the climbing phase, order is broken, uncertainty prevails, and there is an atmosphere of total turmoil. In the second phase of the crisis moment, the measures taken to eliminate the uncertainty and chaos in question come into play and the escalation in the crisis is stopped or regressed.29

The first task of managers in a crisis is to determine the situation. In this period, managers should avoid traditional and populist approaches while taking measures that can remedy the crisis. In this period, where negative factors such as uncertainty, stress, interests and the resulting chaos prevail, there is an important responsibility on managers in terms of making correct and fast decisions. The panic, pessimistic and insecure environment caused by the crisis regresses or disappears completely with the correct and fast decisions made by the managers, and sometimes as a result of external factors.

### c) After the crisis

The duration of this period, in which the crisis has ended and its effects on the organization have disappeared, may vary depending on the measures taken and their implementation principles. This period can also be considered as a period in which similar crises that may occur in the future are evaluated. Post-crisis recovery and learning processes are included in this period.

## 1.6. Consequences of the Crisis

The post-crisis period is a process where the wounds arising from the crisis are healed and the organization regains its lost functions. Managers have to work to eliminate the effects of the crisis. For this purpose, managers produce new projects, eliminate the uncertainty and ineffectiveness caused by the crisis and make radical changes in the organizational structure if necessary. For example, it has been observed that the pressures that occur in crisis environments create tension, fear and distrust on the members of the organization and this situation negatively affects the organization in terms of management. Managers need to take the necessary precautions regarding the return of the employees to their former motivations by making moral training and changes in the organizational structure after the crisis.

## 1.7. Characteristics of the Crisis Period

In a crisis period, control is centralized significantly. Greater control of operations is achieved through standardization, strengthening of

control or centralization of authority. At the same time, efforts are made to overcome the organizational limitations created by the environment by increasing the level of leader, structure and control. The central decision-making unit consists of interlocked, homogeneous individuals and is led by a strong leader. For this, the decision-making group is downsized during the crisis. In the face of threats, the leader either gathers all his power or gives up his power. As the crisis becomes longer and more severe, those at the top of the hierarchy take on more decision-making responsibility.

In addition, it was observed that the turnover of management personnel increased during the crisis. Due to stress, the needs for safety, respect, and self-actualization become unsatisfied. During the crisis period, members of the organization tend to withdraw, the amount of production decreases, absenteeism and employee turnover increase, dissatisfaction increases. Managers deal with losses, look for ways out of impasse, decide on short-term solutions by necessity, act with simple logic, and feel panic. Physical and mental fatigue is observed in managers.

In the decision-making process, under high stress, the error rate increases, the problem-solving process becomes more rigid, uncertainty tolerance decreases, and the ability to deal with complex problems decreases. As a result, the quality of the decision decreases. In this period, the organization dissolves and it may become unable to manage itself (Can, 1997).

According to the theory created by Glaesser (2006); The stages of the crisis take place in three stages as potential, latent and acute crises.

- Potential crises: It characterizes a stage in which the crisis is only an imaginary fiction.
- Hidden crises: It describes the stage in which the crisis begins to emerge but has not yet been defined.
- Acute crises: It is the period when the destructive effects of the crisis are perceived. The company strives to deal with the crisis. Crisis perception becomes clearer through company reporting. When a crisis reaches an acute stage, it is important to follow the steps below (Devlin, 2007);
- Quickly taking the crisis under control,
- To determine the real situation,
- To explain the situation to prevent rumors,
- Correct the problem.
- May cause acute crisis;
- Product problem,
- A negative public perception about the organization,
- Financial problem,
- Worker strike problem, employee lawsuits and similar events,
- An adverse international event,
- Workplace violence,
- Death of senior executives and similar events,
- There is a natural disaster (earthquake, hurricane, flood, etc.), accidents (fire, leakage, long power outages, etc.) or deliberate

actions (bomb or arson, etc.) in one of the establishment premises.

### 1.8. Effects of the Crisis

The crisis has positive and negative effects on employees, managers and the organization as a whole; It has some short or long term effects and has consequences. It can also occur in a segment of the organization and in its region or throughout. It contributes to the completion of unfinished projects due to reasons such as the crisis, insufficient funds, political and administrative priorities and preferences in different directions, and thus causes change in the preparation and implementation of certain projects that are determined to be carried out during the crisis period. Since crisis periods cause complex events and interventions, a wide organization and coordination, the communication of the organization and its employees with the external environment increases during the crisis period, and teamwork is strengthened both within and between organizations and between organizations and non-governmental organizations. During this period, employees, managers and the organization as a whole gain experience in crisis (Tuz, 2004). Again, in times of crisis, the problems and weaknesses of the organization are revealed, and new talents are discovered under extraordinary conditions of the crisis period. In addition, the crisis can be used as the "creative destruction" of the crisis by going further in the concepts of change and change management.

In addition to this, the effects of economic crises on the social and social life as well as the effects on macro sizes are not underestimated. As a result, economic decision units are a part of social life. Economic crises bring about some changes in social behavior patterns, especially for individuals. In this global economic crisis, first of all, people will have difficulty believing and will prefer to remain static without knowing what to do with the effect of this event. The "Response Period" following this period is experienced within a few days after the shock period. In this period, comments on the subject, criticism of the system, rejection, rejection and reactions towards the factors that cause it begin to increase. And, after making decisions about what to do, we will exit the stagnation and start moving. As a result of this period, a "Harmonization Period" will occur for this crisis. There will be people who can harm themselves and their environment with the effects of this crisis as well as those who adapt to the situation and continue their life (Budak, 2012).

The change in the individual's behavior will not be limited to himself. It will have some reflections on the social environment it belongs to, especially the family. People affected by the economic crisis may display an angry and aggressive attitude towards family members. The deterioration of the work of the person who contributes financially to the home can negatively affect the behavior of family members towards him. The desire of children to continue their pre-crisis life may lead to family conflicts. The child may react, not wanting to be hindered by his previous wishes. The situation he lives in can also

shake his place and importance among his friends. The child who has been lost can reflect his anger on his family and friends.

Communication with the spouse may be impaired. The individual who has anxiety about the future may lose his confidence. An individual who loses confidence will not want to do anything. Reluctance will affect motivation. The individual who lacks motivation may also have problems with his spouse and the process may extend to the end of marriages. If the expectations reach the level that cannot be met, people distance themselves from each other. Many people can isolate themselves from social life. A person who loses his past financial means can distance himself from other people as well as be abandoned by other people. Negative thoughts about the crisis will increase people's feelings and behaviors in the form of anxiety, fear, anger, anxiety, tension, loneliness, helplessness, not taking risks, unwillingness, inadequacy and insecurity, and decreased motivation. Such behaviors may lead to cases such as suicide (Kanberoğlu & Kara, 2013).

In addition to the positive effects mentioned above, the crisis also causes some negative results in organizations. Decisions taken during this period are not sufficient due to insufficient information. Management becomes centralized according to the nature of the crisis environment psychology and the emerging crisis. In the environment of stress and tension caused by the crisis, tension and conflict within the organization increases, the environment of trust shakes and an authority gap occurs (Tüz, 2004).

## 2. DISASTER CONCEPT

### 2.1. Disaster Definition

Disasters are natural, technological or human-induced events that cause physical, economic and social losses, halt or interrupt daily vital activities, and make it difficult for people to produce solutions with their own means. In order for hazards to turn into a disaster, they must harm life, natural environment, property and business continuity.

In other words, disasters, society or the environment adversely affecting the natural, technological or human-induced impact. Today, disasters are the results of wrong risk management. These risks are the product of dangers and vulnerability. While a more comprehensive concept crisis disaster can be considered as a subtitle of this concept.

In short, disaster management is the aim of preventing events that may result in disasters or reducing their damages.

### 2.2. Characteristics of the Disaster

Regardless of the sources, the size and characteristics of the disaster can be evaluated with the loss of life, injuries, structural damage and social, economic and environmental (property) losses caused. However, in the public opinion, the magnitude and significance of the disaster is evaluated by the magnitude of the loss of life and injuries caused by the disaster rather than economic losses (Ergünay, 2009).

Although natural disasters affect the entire geography, they pose an important risk in densely populated settlements. Therefore, reducing

the risks of natural disasters is more important than other disaster studies. Factors affecting the characteristics of the disaster are the probability of occurrence of the disaster, the danger of disaster, the distribution of human-made elements that are not affected by the disaster, and the vulnerability level that determines the extent to which the society and the environment are affected by the disaster. These three factors are directly related to the extent to which the disaster affects society and the environment during and after the disaster, such as where, in what severity and how often they determine and what side effects.

“Both natural disasters and urban environmental disorders increase the“ risks ”of natural and technological disasters; In addition to this, disasters both destroy natural values and physical environment and cause great financial losses by affecting development negatively. In addition, natural disasters have an important place in the memories of individuals and societies by causing many psychological disorders. Disasters (crisis situations caused by natural disasters) are events that mostly contain negative elements, cause long-term effects in social, political, economic and natural life, occur suddenly, cannot be prevented easily, and affect people and a specific region. " (Yavaş, 2001).

Disasters can be divided into two groups, depending on their rate of occurrence, as sudden and slow-moving disasters. As an example of sudden disasters; earthquakes, flash floods and mudslides, avalanches and rock falls, volcanic explosions, nuclear or chemical accidents,

storms and typhoons. In such disasters, since there is usually no forecasting, early warning, evacuation possibilities or very limited, if the protective and preventive measures that the society can take in advance against disasters are insufficient, large life and property losses and social, economic, environmental and psychological losses are also great. For slow developing disasters; Global climate change, drought and hunger, erosion, desertification, epidemic diseases can be given as examples. Since the damage and losses caused by such disasters develop gradually over time, it is easier to take protective, preventive and risk-reducing measures.

It is possible to divide disasters into three groups according to their origins: geophysical, meteorological, technological and human-induced. Geophysical disasters; earthquakes, landslides, rock falls, volcano eruptions; meteorological disasters; floods, floods, drought, storm, global warming, desertification, technological and anthropogenic disasters; nuclear and chemical accidents, major fires, environmental pollution, terrorist incidents or wars.

In order to define the characteristics of any disaster, the physical size of the disaster, its distance to the settlement areas, the economic development level of the society affected by the disaster, the permanent or temporary losses caused by the disaster, and the level of protective, preventive and risk reduction measures that the society can take before the disaster events should be analyzed together. .

Disasters, loss of life, injuries, infrastructural damages, property losses, loss of cultural heritage and museums, rescue, first aid and temporary shelter, treatment, nutrition, clothing costs, damage to infrastructure, communication and transportation facilities, repair costs and various damages directly affect the state and people in terms of repair costs. Disasters also cause production losses due to temporary or permanent out of service of commercial and industrial facilities, service losses due to the complete or partial closure of health, education and other government services, and other social losses caused by labor, migration, injured people and orphans. is happening.

Development and development plans revised according to disaster hazards and risks will significantly reduce possible damages. Disasters can prevent local, regional and country-scale development and development for a long time with the physical, economic, social and environmental losses and damages they may cause. Development and development programs implemented without considering disaster hazards and risks increase the values in risky areas and as a result, they increase the potential disaster risks.

The magnitude of a disaster is generally measured by the loss of life, injuries, structural damage and social and economic losses caused by an incident. Among these different concepts, there is a tendency to evaluate the magnitude of the disaster with the size of the loss of life and injuries caused by the disaster, since it is the most sacred and most important of all, human life (Erkal & Değerliyurt, 2009). The main

factors affecting the magnitude of the disaster can be summarized as follows (Ergünay, 1999):

- Physical magnitude of the incident,
- The distance of the incident to dense residential areas,
- Poverty and underdevelopment,
- Rapid population growth,
- Rapid and uncontrolled urbanization and industrialization in dangerous areas,
- Destruction or misuse of forests and the environment,
- Lack of knowledge and education,
- The level at which protective and preventive measures that the society can take before disaster events can be reached.

The first two of these factors, that is, all except the physical size of the event and the distance to the settlement centers, are not of natural origin, but of human activities. Thus, the magnitude of disasters increases or decreases in parallel with the development of human activities in the right or wrong direction.

It is important to explain the concepts related to disasters that often cause confusion in terms of understanding the subject. To mention a few of them; Emergency is defined as "sudden emerging power situation, emergency situation requiring assistance or rescue, unexpected, unforeseen events coordination". In fact, the word urgent in the concept refers to the unexpected and unpredictable situation. Epidemics, fires, traffic accidents, industrial accidents, terrorist

activities are examples to be given for emergency situations. The concept of "unexpected event", which is widely known to occur but is used for unexpected events, is described as "probability, probable event or situation". We can cite storms, power outages, forest fires, strikes that have the potential to turn into a social chaos as examples of unexpected events. Unexpected event describes situations that are more important than an emergency (Ertürkmen, 2006).

### 2.3. Types of Disasters and Factors Causing Disasters

In order to explain the factors that cause disasters, it is necessary to focus on the concept of danger first. Hazard can be defined as events of natural, technological or human origin that may directly or indirectly cause physical, economic, social and environmental losses. The types of events that may pose a danger to any social environment are nature-based (earthquake, drought, flood, avalanche, etc.), violence-based (war, terror, internal conflicts, etc.) social disruptions etc.) and lack of training and insufficiencies (technological accidents, traffic accidents, fires, etc.).

As can be seen, the factors causing disasters are directly related to the origins of the disaster. It is possible to divide disasters into three groups according to their origins: geophysical, meteorological, technological and human-induced. Geophysical disasters; earthquakes, landslides, rock falls, volcano eruptions; meteorological disasters; floods, floods, drought, storm, global warming, desertification, technological and anthropogenic disasters; nuclear and chemical

accidents, major fires, environmental pollution, terrorist incidents or wars.

Indeed, the difference between natural and man-made disasters is gradually becoming less clear, and disasters trigger each other with chain effects and have increasingly complex consequences. Therefore, today's risk society has to deal with both types of risks. While these risks can be faced separately, it may also be possible to encounter mixed risks. Beyond the danger of natural disasters, the resilience of the society, which is faced with the produced risks and uncertainties, exceed political borders and can be felt in very wide areas (Beck, 2010). The risks that occur today are not within the boundaries of the country and the situation faced by the societies is effective in wide areas all over the world. Major atmospheric events, global climate change, pollution and depletion of the ozone layer are globally accepted as disasters.

Disasters; They can be divided into two main groups according to their formation rate and origins (Ergünay 2009). Disasters according to their rate of occurrence:

a) Sudden disasters: earthquakes, sudden floods, avalanches, volcano eruptions, nuclear and chemical accidents, storms and typhoons
b) Slow-growing disasters can be divided into two main groups: global climate change, drought, erosion, desertification, epidemic diseases. It is easier to take protective, preventive and

risk-reducing measures over time, as the rate of occurrence of slow-growing disasters is slower than sudden disasters.

Disasters are classified according to their origin by the Disaster and Emergency Management Center as follows:

a) Geological natural disasters: earthquakes, landslides and volcano eruptions.

b) Meteorological natural disasters: flood, avalanche, storm, drought, forest fire, tornado.

c) Technological disasters: dam explosions.

d) Man-made disasters: fires, air, water, environmental pollution and transportation accidents.

However, natural disaster-related crises such as earthquakes and floods are not unpredictable despite their unexpected and sudden occurrence. As a result of developing scientific research, although the timing is not known exactly, their probability is calculated in a certain time interval. In addition to natural disasters, disasters affected by the human factor can also cause crises. Intensive housing construction on river beds and fault lines, lack of participatory practices in producing common solutions, political and financial interests, corruption in the implementation of quality and moral rules can be cited as examples of such disasters.

Natural disaster risks are one of the important factors to be taken into account in the urbanization and city planning process. One of the main reasons why settlements become risky in the face of disasters is the

development level differences between regions and cities (Dinler 2001). Due to the employment opportunities provided by big cities, the population migrates to big cities and this situation paves the way for rapid and uncontrolled urbanization. Rapid urbanization; In addition to causing inadequacies in the provision of housing and public services, it also increases the vulnerability in economic, social and environmental terms due to the increasing use of physical appearance and resources such as uncontrolled urbanization and slums. This situation causes anthropogenic disasters to occur and many green areas are destroyed and filled with buildings and roads. As a result, the water absorption capacity of the soil decreases and the rain flow rates increase, causing flooding and flooding (Güler, 2018).

In addition, the insufficiency of rainwater drainage systems of settlements makes sudden floods inevitable. During the preparation of city settlement plans, the possible climatological and hydrological conditions of the region are taken into consideration.

The selection of suitable land and determination of appropriate construction procedures and principles play an important role in reducing flood risks (Ergünay 2009). Slums are a risk factor in the face of disasters as well as in terms of unhealthy and unplanned urbanization. While many of the big cities in our country are located on the first degree earthquake zone, these regions are natural disaster risks due to the poor quality of construction in the slum areas in these cities, the dangers in the areas where the slum areas are located, the

socio-economic inadequacy of the people, the misuse of the lands in city planning and inadequate rainwater drainage lines (Keleş 2002).

Global warming and climate change caused by greenhouse gases in the atmosphere, due to intense human activities, negatively affect almost all areas of life. Global warming does not cause changes such as melting of glaciers, rising sea level, shifting of climate zones and destruction of flora and fauna that cannot adapt to this shift. Meteorological events such as severe storms, hurricanes, typhoons, sudden and heavy rains due to global warming, and hydrological natural disasters such as floods and floods that occur due to these events, and climatic natural disasters such as drought and desertification processes are also important in the severity, frequency and field of activity. increases (Türkeş et al. 2000).

The effects of global warming may be particularly in the form of a decrease in water resources, drought (famine, heat waves, agricultural, utility and drinking water requirement etc.), sudden floods (heavy and sudden rain and lightning), rising sea water level and related ecological deterioration. . Drought; It is accepted as the most dangerous natural disaster due to its socioeconomic effects, continuity and difficulty of solution. Therefore, in water management, protection of water basins and agricultural lands, drought planning and reuse of water and developing irrigation techniques are of great importance (Türkeş et al. 2000).

### 2.3.1. Nature Related Disasters

They are ecological events that disrupt the normal life order of the society and require external assistance by exceeding its adaptation capacity. The Risk Management Index, INFORM for short, was modeled for the first time in 2012. It aims to measure and rank the risks of humanitarian crises and disasters in 191 countries. The types can be summarized as follows:

#### a. Earthquakes

Earthquake is the phenomenon of vibrations that occur suddenly due to the ruptures in the earth's crust, spreading in waves and shaking the environment and the ground surface (Babüroğlu, 1998). Earthquake is a natural phenomenon that shows that the earth that people consider immobile and safely stepped on will also play and that all the structures on it can be damaged and destroyed in a way that will result in loss of life.

In terms of natural disasters, earthquakes have the highest risk with 9.3 points. The displaced people risk score is another high risk score, noticeable by 9.3. In our country, which is located in an earthquake zone, many earthquakes occur every day, which are recorded by instruments and not noticed by people. Turkey is situated in one of the world's most important Alpine-Himalayan seismic zone earthquake zone. Turkey is located on the Anatolian Plate; It is surrounded by the Eurasian Plate in the north, the Africa and Arabian Plate in the south, the Eastern Anatolian Block in the east and the Aegean Block in the

west. This is a very large part of Turkey's territory is due to tectonic earthquake risk. Number of active faults or fault segments that can produce magnitude 5.5 and higher earthquakes in Turkey is reported to be 485 (Duman, 2015).

66% of Turkey's land area, 71% of the population at the end of 2014 reached 77,695,904 people, 75% of industrial facilities and power plants located in seismic zones 1 and 2. only about 2% of Turkey's population lives in earthquake risk is very low of 5 in seismic zones. Of the population; 20% live in single-storey buildings, 25.5% in 4-5-storey buildings, and 23.1% in buildings with floors 6 or more (Tuik, 2015). In this context, it can be said that as a result of uncontrolled migration, the population increases faster in these regions, which are defined as risky areas, and that more and more people are under earthquake risk every year. A large part of industrial residential areas and most of our power plants are located in this risky area.

More than 70% of Turkey's population live in due to the first and second degree earthquake zone, the region's tectonic features, appropriate measures should continue to increase. Otherwise, precautions are extremely important to avoid loss of life and property in possible future earthquakes as in the past. The reduction of earthquake damages and the lack of pre-prepared plans cause significant losses during and after the earthquake. During a major earthquake; Since people, institutions and other factors will not be able to react properly during the extraordinary events, responses to disasters must be planned well before the disaster occurs. In disaster

management; Planning the mitigation, advance preparation, rescue and first aid, recovery and reconstruction stages is extremely effective in minimizing loss of life and property. In the Kocaeli earthquake, the inadequacies of disaster management and search and rescue efforts, the magnitude of the earthquake and the lack of preparedness for a disaster of this size increased the loss of life and property (Bikçe, 2017).

**b. Floods**

Failure of streams or side streams to carry high flow rates in their beds due to heavy rains and flooding of low-elevation areas is called flood (feyezan). The natural effects that cause floods are a wide variety of random climatic factors. This is why floods are considered random events. As an example, more than one flood events of varying magnitude in the same year can be shown in any stream. The natural effects that cause floods are a wide variety of random climatic factors. This is why floods are considered random events. As an example, more than one flood events of varying magnitude in the same year can be shown in any stream. Failure of rivers or side streams to carry their high flow rates in their beds due to heavy rains and flooding of low-elevation areas is known as flood (feyezan) (Büyükkaracığan, 2009).,

Extreme events such as flood, drought, heat wave, severe storm and the like; It may occur due to weather and climate changes in daily, monthly and annual periods. An extreme climatic event represents a significant deviation from the normal state of the climate system and

is independent of the effects of this system on life and earth ecology. It is possible that greenhouse gases caused by climate change, climatic disasters and extreme events can change the size and frequency of characters (Büyükkaracığan, 2019).

Regional water resources, especially in developing countries such as the middle east countries, are subject to many pressures. Climate change; It will increase the pressures arising from pollution, environment, population, economy and political reasons. Locations best suited for pressures are arid and semi-arid regions, as well as some low-lying beaches and small islands. Although the links between climate change, water resources, food production, population growth and economic development and political structures are many and complex, the effects of climate change will be more economically and politically in regions with few resources. Briefly, the reasons causing floods:

- Extreme and heavy rains
- Sudden Snow Melts

Earthquakes, landslides

Dam failures

- Climate Change
- Human-induced factors (interventions to the stream bed, wrong land use in the basin) can be listed.

Flood is one of the most important natural disasters. Especially due to the global warming occurring on the earth, more evaporation and thus

more and unbalanced precipitation can be effective on the earth. Especially the precipitation that occurs with the melting of snow can cause larger floods. For this reason, it is necessary to take into account the floods that will be caused by the warming of the air in the regions with excessive snowfall and the snow melting that occurs with the spring rains. In order to carry out the built and unstructured flood prevention studies to reduce and prevent the damages of floods, the flood hydrology of the riverbed and basin should be well known.

In our country, flood disasters cause the most economic losses after earthquakes. According to the current casting data, the economic loss caused by the floods reaches an average of USD 100.000.000 every year. On the other hand, the amount of investment allocated for project activities, which are generally carried out in the context of structural measures for the control of floods and reducing their losses, is around 30,000,000 dollars per year.

**c. Avalanche**

Avalanche is defined as the rapid slide down the slope as a result of an initial movement (triggered) that starts with the effect of internal and / or external forces of the snow mass accumulated in layers on the slopes of the valleys in the rugged, mountainous and sloping lands that do not usually have vegetation. Avalanche in short is the flowing movement of the snow layer or layers in the direction of the slope of the slope with the effect of internal and external forces. Since snow layers will have different properties from each other; Avalanche

sometimes occurs with a layer or layers sliding on another layer or as a result of all layers sliding collectively on the ground.

Avalanche risk in permanent settlements; It has been significantly taken under control with its wide observation network, sound forecasting studies, the construction of effective physical precautionary structures and serious development practices. However, the number of people who lost their lives as a result of avalanche disasters in the last 15 years has been over 2000, due to the continuous increase in the number of ski resorts and people interested in winter sports (Ertürkmen, 2006).

Turkey, in particular in the eastern part of the north-northeast and mountainous areas with suitable topography and meteorological conditions avalanches are available. The surface area of the areas with an average height of more than 1000 m and suitable for avalanche formation has a very high percentage in these regions. Mountainous areas, Turkey's land surface approximately 1 / 3rd the thought that if we create, how big it is understandable that the spread of the areas where avalanches occur. Avalanches occurring in these regions threaten settlements, roads, tourist facilities and all other state investments. The impact of avalanches on settlements is socially and economically like any other type of disaster.

The socio-economic effects of avalanche disasters are not limited to loss of life and property. Production and workforce losses are gradually increasing due to the immigration of people who cannot

meet the financial losses in the areas affected by avalanches and the damage caused by avalanches in the region and the tourism potential of these regions is gradually decreasing.

**d. Storm**

Moving air from one place to another is called wind in general terms. A wind speed of 40 to 60 km per hour is defined as strong wind, and an increase above 60 km as a wind storm. Thunderstorms and strong winds usually bring along events such as rain, snow or hail. Thunderstorms are often accompanied by lightning, lightning and thunder (MGM, 2020).

Especially in countries with oceans and seaside, frontal storms are seen depending on the pressure and temperature differences. In regions where sea water temperature is high, tropical storms, hurricanes, tornadoes, tornados and typhoons caused by ocean water and atmospheric events cause serious lives and property containers as they move from the ocean to the land.

Especially elnino, which is the result of global warming, constitutes ocean-derived typhoons. The devastating effects of these typhoons have caused loss of life and property in many countries in recent years, including the United States, Haiti, and Southeast Asian countries. 2018 100 expressed by a place where authorities a year and Italy's Sicily Island from starting Mora peninsula on the Izmir coast to the far reaches of the storm, shows that after Turkey's need to be prepared to such natural events. In addition, in our country, it is seen

that there is an increase in property loss and injuries in the hoses formed due to sea water temperature in the Mediterranean and Aegean (Şahin & Üçgül, 2018).

**e. Tsunami**

Tsunami is the long-term sea wave formed by the bottom collapse as a result of an earthquake that occurs mostly in subduction zones on the ocean or sea floor. It can also occur by displacement and landslides on the sea floor. It is a concept that has taken its place in world languages after the Great Meji Tsunami as a result of the earthquake that took place in Japan on June 15, 1896 and caused the death of 21000 people. It means "harbor wave" in Japanese as it causes damage mostly in port areas. Tsunami is different from other sea waves. With the collapse of the sea floor, the water drawn into the empty space begins to move towards the coast due to its physical characteristics. In this process, its speed and wave height increase. Therefore, it drags in the way of sweeping whatever comes its way. The tsunami, which is not felt in the depths of the sea, turns into violent currents as it reaches the shallow areas. It is stated that this current climbs up to 30 m on steep slopes (Ertürkmen, 2006).

Tsunami usually occurs in oceans and open seas. Mediterranean studies conducted in Turkey occurred in the plunge result under the Anatolian plate of the African Plate Subduction along the zone with the collapse of the seafloor occurred in the past tsunamis have occurred (Yolsal, taymazveyalçın 2007; Yolsal, taymazveyalçın

2008). Tsunami partially occurred during the 6.6 magnitude Bodrum earthquake that took place in 2016. In the 1963 Marmara earthquake, it is seen in the records that the wave height caused by the mass movement on the sea floor caused a tsunami, although it was small. The tsunami, which occurred after the 6.6 magnitude earthquake that took place in the Aegean Sea on October 30, hit the Sığacık District in İzmir's Seferihisar district. The tsunami in Seferihisar district immediately after the earthquake and earthquake in Izmir caused serious damage to workplaces, vehicles and boats, especially residences. While dozens of buildings were destroyed in the earthquake, hundreds of vehicles became unusable; workplaces were either destroyed or flooded by the impact of the earthquake and tsunami.

**f. Drought**

Among the meteorological natural disasters, the drought has the most extensive impact. Drought creates significant social, environmental and economic damages. Drought can be defined as "the natural event that causes the land and water resources to be negatively affected and the hydrological balance to deteriorate as a result of the precipitation falling significantly below the recorded normal levels". Drought, which we roughly describe as the relation of temporary imbalance in the amount of moisture in a region to water scarcity in that region, is a natural climatic event and can occur anywhere at any time. According to many researchers, drought is the most important natural disaster among thirty-one natural disasters (Kadıoğlu, 2001). It can be seen

everywhere from arid to humid climate types. However, arid climates are more susceptible to drought due to lack of moisture and high variability of precipitation. Among extreme events, drought usually develops slowly, often has a long duration, and with the least predicted of atmospheric hazards, its effects are very broad.

Due to the large temporal and spatial changes of meteorological factors, serious fluctuations occur in agricultural production. As a result of the expected climate change, global warming and drought disasters in the 21st century, it is estimated that a large amount of product losses will occur. For this reason, it is a must to obtain the necessary information about the climate structure and production risks of that region before performing agricultural activities in any region. The most important meteorological factors affecting agriculture can be counted as precipitation, temperature, wind, humidity, sunshine duration and intensity.

Turkey has very different climatic zones and microclimate zones due to its geographical location and structure. The climate elements and especially the precipitation factor, which has the greatest effect on production, show great changes in temporal and spatial terms. In Turkey, the average annual rainfall of around 640 mm, although in many regions due to the irregular distribution of precipitation are water shortages and drought (Kapluhan, 2013).

### g. Landslide and Erosion

Landslides, earthquakes and floods take place in natural disasters. This is the fact that the landslide is a disaster rather than a mass movement. Landslides, in general terms, occur due to the deterioration of the slope balance (stability) due to the mass movements, geological-geomorphological-climatological-meteorological factors and processes and the various activities of humans. The main reason for mass movements is gravity. The reasons related to natural and human activities are the factors that trigger the movement of the mass and determine its type. In addition to these, there are many factors that determine the speed of movement on the slope, decrease or increase the slip degree of the mass, and a successive chain of events.

Landslides can cause loss of life and property on the scale of destruction. It is not possible to measure the loss of life caused by landslides economically. Moreover, it is very difficult to evaluate direct and indirect economic losses only in infrastructure and superstructure investments, even in landslides that cause monetary damage. In many regions, opening of landslide-sensitive areas is prohibited in urban plans. However, the unnecessary closure of a non-problematic area for settlement or use actually means economic loss. There is a lot of agricultural damage caused by landslides. The fields, vineyards and gardens and the trees and plants planted on it can be removed by landslides and moved down the slope. Since the soil is mixed during this event, the plant-soil relationship is disrupted, the

products are destroyed by being removed from their places. (Öztürk, 2002).

Erosion is a natural event formed by the effect of wind and water in the geological process. The degraded form of geological erosion by natural disasters or by various effects of humans on land is called accelerated or harmful or soil erosion or simply erosion (Karaoğlu, 2014). Accelerated erosion resulting from improper land use can even be called human erosion (Çelebi, 1981). Soil particles that are transported within the subject of erosion and collapse where the bearing power decreases or encounter an obstacle are defined as sediment. This agglomeration event called sedimentation is an integral part of erosion (Akalan, 1983). Accelerated erosion caused by natural disasters and various human effects; Water is divided into three classes as wind and mass (gravity, avalanche, glacier, wave) erosion (Morgan, 2005). Görcelioğlu (2003) defined erosion as "erosion and transport" or in short, "erosion" in his study.

Since mass erosion occurs in more limited areas than others, researches and studies continue intensely on water and wind erosion (Karaoğlu, 2014). Mass movements, which are generally seen as landslides in our country, have been widely studied by geologists and geomorphologists and are generally neglected in the subject of erosion. Wind erosion is decomposition, transport and deposition of soil. It is an energetic and physical process in which loose, dry and bare soils are transported by strong winds.

### 2.3.2. Unnatural Disasters

In the future, the use of technology, industrialization, developments in land, air, iron, sea transportation, dams cause various events such as “accidents” and this leads to loss of life and property (Geray, 1978).

Nowadays, as a result of the necessity to meet the increasing energy needs, nuclear reactors have started to be a part of social life. The problematic of "whether nuclear energy is produced or not" is no longer a matter of debate. What needs to be done is to take adequate protective and preventive measures during nuclear energy production and train the people of the region to get rid of the fear of radiation and learn to live with it. Turkey is in the earthquake zone industrial zone, roads and railways passing through these areas of transportation, the establishment of the refinery is located unnatural disasters also cause is not well chosen.

Again, the lack of good selection of the establishment sites of the dams or the necessary warning
Failure to install systems also causes disasters (Ertürkmen, 2006).

The disasters that the development of technology and globalization bring along are more human-induced dangers. Industrial accidents and fires, major oil and gas leaks, nuclear accidents, air and water pollution can cause technological disasters.

With each passing day, the development of technology, the increase in industrialization, urbanization, the advances in land, air, iron, sea transportation and transportation, nuclear power plant accidents cause loss of life and property (Geray, 1978).

The necessity to meet the energy needs, which is one of the two biggest requirements of the 21st century, necessitates the use of nuclear technology more (Alevcan, 1995). As a result, nuclear power plants have begun to become a part of social life. Most of the energy needed in developed countries is provided by nuclear power plants. Of course, because of its danger, alternative energy sources are being investigated instead of nuclear energy and energy obtained from fossil fuels. At the beginning of 2017, the share of renewable energy in the total amount of energy needed worldwide is 24.8%. The remaining 75.2% is from fossil fuels and nuclear power plants.

A large part of the industrial area in Turkey can improve the structure of the geography of first-degree earthquake zones. Tectonic shaping the road Vedem road transport exceed the fault of the degree of earthquake damage is intense. However, people can cause industrial-nuclear accidents, dam accidents, fires disasters.

### 2.4. Disaster in Turkey

Finally, the "INFORM Global Risk Index 2018" report containing the data for 2017 was published. The INFORM index score defines 0 to 2 risk as very low, 2 to 3.5 as low, 3.5 to 5 as medium, 5 to 6.5 as high, 6.5 to 10 as very high. According to the 2018 report on Turkey

INFORM index score was calculated as 5.0. which it is a part of West Asia is located in the upper-middle income Turkey ranks 45th of 191 countries in terms of INFORM index points. Turkey's neighboring Greece 2.9, 2.6 Bulgaria, Syria 6,9 6,8 Iraq, Iran 5,0, 4,7 Azerbaijan and Georgia has 3.8 points. Turkey with 5.0 index points of presence in high-risk groups as well as by the trend of the last three years, is also one of the countries that tend to increase the risk.

In terms of lives and property are the types of disasters earthquake that caused the most loss in Turkey. A significant 60 percent of the casualties due to disasters are caused by earthquakes. When earthquakes from the past to the present are evaluated statistically; The average in Turkey is observed that a major earthquake causing loss of life and property on a wide range of five years. Due to these earthquakes, approximately 1,000 people lost their lives and 2,100 people were injured annually; Again, an average of more than 7 thousand buildings were reported to have been destroyed or severely damaged due to earthquakes. (Source: AFAD 2011 Van Earthquake Report).

98% of the 600 million people on earth in terms of earthquake predictions while Turkey's population lived in risk areas are living under the threat of earthquakes. 98% of the industrial establishments are located in earthquake zones and 73% are located in active fault zones. Likewise, 95% of our dams are located on these dangerous soils. On the other hand, the relationship between power plants and earthquakes is a candidate to produce interesting results. According to

a study conducted, in 1996, the number of power plants was 124, 122 of them had an earthquake risk and 65 of them were located in the First Degree Earthquake Zone. Today, as a result of privatization, there are approximately one thousand (1,000) power plants and 419 (41%) of them are located in the First Degree Earthquake Zone. This means that the risk in question is growing. In the 7.2-magnitude earthquake that took place in the Marmara Sea near the Islands during the Ottoman period on September 10, 1509, which was named as Kıyamet-i Suğra (Little Apocalypse), which was stated to shake Istanbul and its surroundings for 40 days, 130 thousand people died and thousand 70 buildings were destroyed. In the earthquake that was felt in Istanbul and its surroundings on May 24, 1719, which caused great damage, many houses and mosques and baths collapsed, collapses in Mihrimah Sultan Mosque and madrasa domes, and damage to the walls and bastions between Yedikule and Ahırkapı occurred. This earthquake also caused damage in Izmit. During the earthquake that took place in Istanbul on May 22, 1766 during the Ottoman period and lasted for 3 months with aftershocks, many mosques, including the Fatih Mosque built by Fatih Sultan Mehmed, were demolished, while Baruthane, Grand Bazaar, Walls, Saraçhane, Damages occurred in Tophane, Janissary barracks and Topkapı Palace. In the earthquake that took place in Istanbul on July 10, 1894 and was known as the 'Great Movement-i arz' because it was felt in a wide area and caused great damage, the buildings in Eminönü and Fatih and the Grand Bazaar were destroyed, while Yalova and Adapazarı were also affected. In the earthquake of 7.9 magnitude that

took place in Erzincan on December 27, 1939 and destroyed around 116 thousand buildings, 33 thousand people lost their lives and 100 thousand people were injured. 3 thousand people lost their lives in the earthquake of 7 magnitude in 1942 in Erbaa district of Tokat. The earthquake of 7.6 magnitude that took place in Ladik district of Samsun on 26 November 1943 was felt in settlements extending from Taşova to Ilgaz. Approximately 2 thousand 300 people lost their lives and 5 thousand people were injured in the earthquake, in which 75 percent of the buildings in the region were destroyed. In 1966, 2 major earthquakes occurred in the Varto district of Muş. 14 people died and 75 were injured in the earthquake, the first of which occurred on 7 March. In the second earthquake that took place on August 19, approximately 2,400 people died and 1,500 people were injured.

1975 Lice Earthquake, 23 seconds of severe earthquake that occurred in Lice district and villages of Diyarbakır at 12:20 local time on September 6, 1975. Kandilli Observatory and Earthquake Research Institute announced the magnitude of the earthquake as 6.6 Ms. 2385 people died, 8149 buildings were damaged or destroyed. Aftershocks continued for 3-4 months, some of which caused material damage. Approximately 3,840 people lost their lives and 500 were injured in the 7.5-magnitude earthquake that took place in the Muradiye district of Van on 24 November 1976 and damaged nearly 10 thousand buildings. In addition to those who fell under the debris in the earthquake, those who died by freezing in the harsh weather that fell

down to 17 degrees below zero with rain and snow were also recorded.

The 1998 Adana-Ceyhan earthquake or the 1998 Adana earthquake was an earthquake of approximately 6.2 magnitude. Earthquake, local time, date June 27, 1998 16: 55 known as Cukurova hit the southern region of Turkey. This event Turkey's fifth most populous regions of the big city on the island and the island, which was Ceyhan and villages which this settled along the river Ceyhan between the two cities, 145 people were killed, 1,500 injured and thousands of people led to the homeless.

According to official records, a total of 18 thousand people died in Kocaeli, Yalova, Sakarya, Istanbul, Bursa, Bolu, Zonguldak and Eskişehir in the earthquake of 7.4 magnitude, which occurred at 03.02 on 17 August 1999, based in Gölcük district of Kocaeli. , 20 thousand people were injured. Thousands of buildings were destroyed in the 45-second earthquake that was felt in a wide area from the Marmara Region to Ankara and Izmir. The 7.2 magnitude earthquake that took place in Düzce on 12 November 1999 was also felt from Ukraine. In the earthquake that lasted for 30 seconds, 710 people died and 2 thousand 678 people were injured. In 2 earthquakes with a magnitude of 7.2 in the epicenter of Tabanlı district in Van on 23 October and 5.6 in Edremit on 9 November 2011, 644 people lost their lives and 1 966 people were injured. Many buildings were also destroyed due to the earthquake. January 24, 2020 Date of occurring local time 20.55't to Turkey's Elazig province and particularly Elazığ and Malatya,

including all areas of earthquake tenth under the influence of East Anatolia Elazığ, Malatya, Kahramanmaras, Diyarbakir, Sanliurfa, Adiyaman and Batman were demolished some buildings . 41 people lost their lives, 37 in Elâzığ and 4 in Malatya.

On Friday, October 30, a shocking 6.9 magnitude earthquake took place off the Seferihisar district of Izmir. 116 citizens lost their lives and more than 1000 people were injured due to the earthquake.

the most severe and wide distribution of drought events in Turkey in 1983 with the period from 1971 to 1974, 1984, 1989, 1990, 1996, and was formed in 2001 (Turkes, 2003). Turkey's effective in many regions of the shortage of water and this drought event, not in terms of agriculture and energy production alone, irrigation, drinking water, other hydrological systems and activities including water resources in terms of management was observed to have reached a critical point.

The post-2001 period (November 2001-November 2006) generally normal boundaries and normal slightly below or rainfall occurred over, alas 2007 winter, spring and summer in Turkey remained below the long-term average in many parts of a new meteorological droughts series agricultural, hydrological and socioeconomic droughts (for example, agricultural product losses, weakening and insufficiency of underground and surface water resources, drinking water shortage and water shortages in some big cities such as Istanbul and especially Ankara, etc.) caused (Türkeş, 2007). The recent drought occurred in December 2006-August 2007 events, especially Turkey's Marmara,

Aegean and Central Anatolian regions with the western Mediterranean and West-Central Black Sea was instrumental in section (Kapluhan, 2013)

Turkey's flood, overflow is detected as a result of the very river bed. Overflows occur as a result of sudden / strong precipitation and snow melting. The misuse of the beds is also very effective in turning the water coming into the river beds into floods. Today, squatting becomes the result of unplanned urbanization böl¬ge the creek bed, reforestation, filling or replacing the riverbed every year as a result of the large property and even loss of life are to be found in Turkey.

As a result of precipitation in mountainous areas and melting of snow on the hills, the stream beds are filled with water that cannot be carried and sudden floods occur. These floods, which also create the risk of landslides especially for settlements on mountain slopes, are very dangerous. Tropical storms and hurricanes with strong winds create strong coastal floods, especially on the shores of the Atlantic ocean. The constant and strong wind causes a big wave and drags the water deep into the land. Similar atmospheric conditions or earthquakes in lake regions cause changes in lake level and floods. When the distribution of flood / water pressure events that have occurred since 1950 is examined, it is seen that Erzurum is in the first place with 425 events. This is followed by Sivas with 315 events, Van with 265 and Bitlis with 247 events. On the other hand, in provinces such as Uşak, Kilis, and Yalova, very few flood incidents occurred. When the map is evaluated in general, it can be said that the flood /

flood events increase as one goes from west to east and from south to north (AFAD, 2018).

It occurred on August 24, 1553 during the reign of Suleiman the Magnificent. The flood trees that occurred in Kağıthane dismantled the poles and carried them to the Bosphorus. Although the exact number of deaths is not known, historians of the period mention this flood in their works. It happened in Tokat on June 12, 1908.

459 buildings were either completely or partially destroyed. In the first detections, 223 people, 208 from the public and 15 people from the military, drowned. The biggest flood event in the history of the Republic occurred in Ankara on September 1, 1957. Due to the opening of the Hatip Stream Valley for settlement, the flood capacity of the tea decreased and the natural balance of the basin was disturbed. 169 people died in the flood that occurred. Flood events in our country in recent years:

2014 Hatay Province Erzin District Yellow Stream Flood: It occurred on 24.09.2014 and 5 people died. The reasons for the flood are: İçmeler Town (DSİ)

- Sudden and heavy rainfall
- Establishment of İçmeler Town in the yellow stream floodplain
- Narrowing of the creek bed section
- Insufficient capacity of the art structures on the stream bed.

2012 Samsun Province Yılanlı, Mert and İncirli Creeks Flood: It occurred on 03.07.2012 and 14 people died. More than 3000 buildings were damaged. Causes of flood: (Tiryaki, 2013)

- Heavy rain and soil saturation
- Interventions on stream beds (Fall passes, covering over stream, garbage depot in stream bed.)
- Stream bed downstream condition is not met sufficiently.

2010 Konya Province Bozkır District Çarşamba Stream Flood: It occurred on 15.12.2010 and more than 120 buildings were damaged. Causes of flood:

- The heavy rain falling in the winter months melting the snow on the ground
- Housing, road and etc. structures narrowing the stream Decorative structures in the channel prevent natural flow
- Effect of irrigation regulator
- Insufficiency of culvert sections and other interventions.

2009 Istanbul Province Ayamama Stream Flood: It occurred on 08.09.2009 and 32 people died. More than 5300 buildings were damaged. Causes of flood:

- 4 days of extreme and heavy rains
- Rapid population growth and increasing urbanization, increasing pressures on stream beds and infrastructure problems
- It is the insufficiency of creek and culvert sections.

2007 Elazig City Center (Inner City Streams) Flood: It occurred on 04.05.2007 and more than 40 buildings were damaged. Causes of flood: (Dursun, 2008)

- Effective rain and hail rain in a short time
- Covering the stream and narrowing the culvert section,
- Inadequate drainage of rain water,

2006 Batman Province İluh Creek Flood: It occurred on 01.11.2009 and 10 people died. Causes of flood (Sunkar & Tonbul, 2011):

- 2-day heavy rains • Establishing most of the city on the floodplains of Iluh Creek and its branches
- The soil structure of the basin generally forms silt and clay.
- Flood in autumn and vegetation weakness, activities to narrow the stream bed section
- Throwing garbage into the stream bed

Turkey's climate, geomorphological and geological features has favorable conditions for the formation of any kind of mass movement. In addition, the destruction or destruction of vegetation on the slopes; Misuse of land for various purposes accelerates such movements. Turkey inclined facilitates 80% of the mass movements of the land area consists of covers and steep areas. In addition, the use of sloping lands as agricultural land, geological features and excessive deforestation, and parallel overgrazing of pastures significantly triggers mass movements. When turkey landslide occurring and analysis of data on them, usually rockfalls, landslides and slip and

flow type which is known to occur by a combination of the type of landslides observed. The geological and geomorphological özellik¬ discussed, especially in the Black Sea region of Turkey to be grieve ¬ rint, Central Anatolia and Eastern Anatolia region covers the area of the landslide to occur frequently. As a result of the landslide that occurred in the Sera valley in 1950, a lake with a depth of 55 meters, a length and a width of 4 kilometers emerged with the blockage of the valley. Again, on June 21, 1990, 65 people died in the landslide in the Maçka / Çatak section due to heavy rainfall, resulting in financial losses of up to trillions. As a result of the mud flow that took place on 13 July 1995 in Senirkent (Isparta) due to the mass movements, 74 people lost their lives and hundreds of residences remained under the flowing mud. Except for Bingöl, our provinces with the most landslides belong to the Black Sea Region. The reason for this is that this region receives sufficient rainfall in all seasons of the year, the topography is hilly, the slope is high, and the clayey stones and layers are common. In regions where volcanic structure is widespread and annual rainfall is not sufficient, landslides are either not observed at all or very rarely (Öztürk, 2002).

The main source of erosion in our country is the destruction of our natural assets. In our country, 14% of it has mild erosion, 20% of it moderate and 63% of it severe and very severe erosion. 99% of our soil exposed to erosion is affected by water erosion and the remaining 1% is affected by wind erosion. Turkey has 57.6 million hectares of erosion is very significant. In our country, the average annual soil loss

in one kilometer area; It is 10 times the loss in Europe, 3 times the loss in Australia and 2 times the loss in America. Loss of soil formed by erosion in Turkey is one of the erosion occurring in the world 33. In other words, while the amount of soil lost by erosion per person in the world is 4 tons per year, unfortunately it is 10 tons in our country. According to the soil surveys carried out by the abolished Rural Services General Directorate; In 15.6 million hectares, in other words, moderate water erosion in 20% of our total area, severe water erosion in 28.3 million hectares (36%) and very severe water erosion in 13.2 million hectares (17%). Wind erosion areas are close to 0.5 million hectares. As can be seen, 73% of our country's soils have experienced advanced erosion. Our land without erosion is only around 14% (Doğan, 2011).

When the avalanche events that have occurred since 1950 are examined, Bingöl is in the first place with 274 events. This is followed by Bitlis with 265 avalanches, Tunceli with 168 avalanches and Malatya with 81 avalanches. Avalanches occurring in these four provinces constituted an important part of the total avalanches as 49 percent. In other words, it can be said that approximately half of the avalanche incidents that have occurred since 1950 occurred in Bingöl, Bitlis, Tunceli and Malatya provinces.

When the map is examined in detail, it is clearly seen that elevation and seasonal effects are determinant in avalanche events. As a matter of fact, while avalanches are frequently encountered in the Eastern

Anatolia Region and the Eastern Black Sea region, it is observed that there are fewer avalanches in other regions.

In the avalanche incidents, which followed a horizontal course until the 1990s, fluctuations began to occur, especially since 1992. There were 158 events in 1992, 104 events in 2006, 159 events in 2007, 144 events in 2008, 110 events in 2010 and 155 events in 2011. Since 2012, there has been a decrease in the number of incidents compared to previous years (AFAD, 2018).

## 3. STRATEGIC MANAGEMENT

The concept of strategic management started to be used in the field of business and management in the second half of the 20th century. Although there was no consensus on the meaning at that time, strategy has a meaning that regulates the relations between the business and its environment and mobilizes its resources in order to gain advantage over its competitors. Peter Drucker says that the main task of strategic management is to think through the mission of a business and "What is our job, what should it be?" by asking his questions, he stated that the determined decisions in line with the determined goals are to provide the results of tomorrow (Drucker, 1999).

Strategic management can be defined as activities that will harmonize the internal resources and skills of the organization with the opportunities and dangers of the external environment (Ergin, 1992). These activities; It is the determination of the weak and superior

aspects of the organization, environmental opportunities and threats, taking into account their relations with competitors (Veliyaht, 1992).

Strategic management is a form of management that aims to adapt the organization to changing environmental conditions and to achieve the continuity of the organization and its strategic goals (Yozgat & Duran, 2001). In this respect, strategic management; Clear vision and strategy have a quality that can contribute positively to the preservation of organizations and their successful development by determining and duly fulfilling critical factors such as the determination of the senior management and communication skills (Şahin, 1992). The concept of strategic management should not be considered separately from the general management concept. Strategic management is part of the overall management process. However, it can be said that strategic management encompasses a special management area that top managers are interested in. In other words, top managers have an important and critical value in strategic management (Daniel, 1992). Strategic management; It looks at the type of management associated with long-term big results This type of management is superior to the type of management related to daily ordinary activities. Since the strategic management area carries many uncertainties, it has priority over management functions. Because no success can be achieved without resolving these uncertainties, it will not make sense to take action. In this direction, strategic management is the event of adapting to different problems and problems caused by environmental uncertainties and managing change. Success in strategic management

largely depends on effective strategic decisions made by senior managers. Effective (fast, accurate and purposeful) strategic decisions affect the success of the organization. The effectiveness of strategic decisions depends on many factors. However, the effectiveness of strategic decisions can be significantly restricted by the decision process and environmental factors beyond the control of the manager. Therefore, it is necessary to use information about environmental factors in strategic decisions (Karakaya, 2004).

Historical Development of Strategic Management The concept of strategy, which has been used as a word for military purposes for centuries, has been used in the field of management thought with the understanding of strategic planning since the 1960s. However, towards the end of the 1970s, it lost its impact and importance due to the inability of organizations to show the necessary flexibility and the inadequacy of existing strategic planning tools to adapt to the environment (they can survive), especially in the crisis environment (Dinçer & Tatoğlu, 2002). Since the 1980s, the concept of strategic management, in order to protect or benefit organizations from environmental uncertainties, determining the strengths and weaknesses of the organization and making strategic changes accordingly, thus using strategic advantages that can be superior to competitors or taking strategic measures that are necessary for survival has been used (Ross, 1996).

Strategies that emerged as a result of centuries of experience in military history have been tried to be adapted to inter-organizational competition wars, which are not strictly military purposes, after the 1980s, since wars between countries are not much different from wars between organizations. The 1990s, on the other hand, was a period when strategic management started to regain the impact and importance it had lost before, with the quality of being evaluated as an important tool in the management of environmental confusion (Dinçer & Tatoğlu, 2002).

Today's management is all about the management of rapid changes. The rapid and continuous change that the world is experiencing affects all sectors significantly, renders existing goals and strategies invalid and inadequate in a short time, creates new problems, dragging organizations into an environment of uncertainty and threatens their existence. The development of knowledge in technology and the production and consumption of developing technology increase the speed of change. The organization's ability to survive in such an environment; It depends on knowing the conditions of the environment in which they live, fulfilling the requirements, distinguishing themselves from their competitors, being more flexible, and being able to adapt to changing conditions more quickly by responding to changes (Coulsan, 1992).

If the environmental conditions are known and treated accordingly, that is, if the negative effects (threats) are avoided and the positive effects (opportunities) are used in a timely manner, the organization

can remain within this environment and affect the environment adversely. Otherwise, there will be openness between the environment and the organization and failure will be inevitable. In a sense, strategic management is the ability to manage environmental complexity / change. In this sense, strategic management, instead of waiting for the future; It means welcoming the future, guiding the future and managing the future. This requires that organizations be able to act in an improvised manner in rapidly changing conditions. In terms of strategic management, predicting the future (reactive practices), which is a passive function to improvise change (lead / create change), is not sufficient, but shaping / managing the future, which is an active function (Proactive practices), is important and this is what is desired. Because in an environment where achieving the strategic goals of the future will never be sufficient; It is possible both to stay in the achieved goals and to make conscious and systematic new leaps to further goals, by managing the future. Organizations can be divided into three groups in terms of managing the future. The organizations in the first group have hit the wall, are helpless, and are in a damaged and injured situation. The second group travels at high speed, but their headlights illuminate something approaching them quickly. The organizations in the third group took a car ride on a sunny day. There are no obstacles in sight and they think: "What a good time to stop and build a wall where the others will crash!" (Turkmen, 1995). Building walls on opponents depends on being superior to them, pacifying them.

### 3.1. Features of Strategic Management

It should be noted that strategic management includes, above all, the characteristics of general management. However, unlike these features, it is possible to mention some specific features of strategic management. Features that distinguish strategic management from other administrations are as follows (Dinçer, 1998, Üzün, 2000):

1. Strategic management should be considered as a function of the top management in the organization. Because strategic management is entirely oriented towards the future of the business.
2. It is geared towards the vision of the business; develops long-term goals for the future, thinks about what needs to be done to reach a result.
3. Strategic management perceives the business as a whole; Other parts that make up the whole are also of interest. It takes into account the whole-part relationship regarding the effects of the strategic decisions taken.
4. Business is an open system for strategic management. Therefore, environment is a factor that is closely followed.
5. Strategic management carries a social responsibility that takes into account the interests of the society against its external environment.
6. Strategic management distributes resources for the realization of the main objectives of the enterprise in the most effective way.

7. The strategy constitutes the common point of departure for everyone, from the management to the determined goals, to the decisions taken, to the lowest units in their activities.

Benefits of Strategic Management Strategic management approach brings a certain direction to the business in an uncertain, variable and highly risky environment. However, since strategic management is an approach to organizing qualitative and quantitative information and making effective decisions under uncertain conditions, these decisions open up creative and intuitive ways of thinking for the manager when compared with the initiative decisions. It is a fact that intuition can sometimes reveal specific, abstract factors that need to be taken into account (Pamuk et al., 1997). Strategic management gives the opportunity to evaluate the environment and predict the future. For this reason, the company finds the opportunity to prepare for how it will behave and what measures it will take. Captures opportunities and threats. Strategic management creates a common goal in ensuring coordination and prevents sub-departments of the business from being separated from each other and turning towards different goals (Güçlü, 2003). In the absence of a strategy, the chapters will gradually differentiate and each will tend to realize their own goal, not the common goal (Üzün, 2000).

It can materialize the benefits of strategic management as follows (Jauch & Glueck, 1989):

• Strategic management allows organizations to anticipate changing situations.

• Strategic management provides clear goals and directions.

• Research in strategic management makes progress so that the process can help managers.

• Jobs that perform strategic management are more effective.

• Strategic management is a way to systematize business decisions.

• Strategic management helps managers investigate the main problems of a company.

• Strategic management helps company communication, coordination of individual projects, allocation of resources and improvement of short-term planning such as budget.

### 3.2. Basic Elements of Strategic Management

Basic elements of strategic management; top managers can be determined as the mission and objectives of the organization, external environmental factors and resources (Üzün, 2000):

**1. Top Managers:** The most basic element of strategic management is top managers. In our age, managers cannot be isolated from the winds of change. A good manager has to be someone who can manage himself above all else. It is necessary to be someone who has solved the productivity and timing problems and applied the total quality understanding to his life. Top managers must first focus on the main directional motives

of the business, goal one, strategies and main problems, determine priorities, and then combine functional activities as a whole and transform them into balanced activity programs. In this respect, the top manager should be a global manager with an intuitive and participatory aspect, as a good strategist, architect and coordinator, due to its role in collecting, analyzing and making decisions.

**2. Mission and Objectives of the Organization:** One of the important elements of strategic management is the mission and objectives of the organization. An organizational mission is its tendency that sets it apart from other companies of the same type. "What kind of business are we? It is necessary to answer the question. Businesses try to legalize themselves by fulfilling some functions in accordance with social values. This effort to be legal puts a mission on every business. Therefore, businesses have to clearly define their missions in society. In addition, the enterprise should answer why it is doing this job. This includes the goals to be achieved. What the business wants to be and why it wants to achieve these goals must be determined. Defining the mission and objectives, in the strategic management process; It will form the basis for analysis, direction determination, strategy selection, implementation and evaluation.

**3. External Environment Factors:** Another element of strategic management is external environmental factors. Changes and developments in external environmental factors are

one of the most prominent elements in strategic management decisions and practices. Environment is a constantly changing factor. As the nature of strategic management, this change presents a more uncertain and complex structure in the long run. The variability of opportunities and threats is always the basis for management decision-making.

**4. Resources:** Another important element of strategic management is the resources owned by the enterprise. What is essential here is the rational use of these resources in product-market mixes.

### 3.3. Strategic Management Process and Its Stages

Strategic management process moves starting from the upper level to the lower levels. Although it is the responsibility of the senior management to decide on the strategic direction of the institution, information about the internal and external environment is mostly obtained from department managers and other management groups (Dinçer, 1998).

1. Strategy Generation
   a. Creating a vision
   b. Creating a mission
   c. Far environment analysis
   d. Near environment analysis
   e. SWOT Analysis

f. Creating strategy development projects

g. Determining strategy alternatives

h. Comparison of strategy alternatives

i. Choice of strategy

2. Strategy Implementation

a. Certification

b. Hardware preparation

c. Education, training

d. Promotion

3. Strategic Learning

a. Strategy monitoring

b. Strategy evaluation

c. Strategic cause analysis

d. Creating strategy development projects

e. Implementing strategy development projects

f. Institutionalizing strategic improvement

The stages of the management process can be determined as follows (Hatiboğlu, 1986):

**1. Environmental analysis:** The purpose of environmental analysis is to determine the main goals and missions of the enterprises and to investigate what can be done to reach them.

**2. Determining the goals:** Before starting the business, it will be possible to determine what business they will do and which direction they will go in, only by determining some goals. Only

then will it be possible to adapt to the environment that still exists and is expected in the future.

**3. Analysis of strategic options:** The next step after determining the environment and goals is to investigate what kind of strategy options exist. We know that the general roads, vehicles, and maps to reach the determined goals are called strategy. Investigating every possible strategy one by one will be done at this stage.

**4. Choosing between strategic options:** Once the strategic possibilities are determined, some of them will be selected. Making a selection can be determined by considering various conditions and possibilities together.

**5. Implementation of the strategies:** The fifth stage is the implementation and actual realization of the chosen strategies. It is clear that the business will have many human problems. As a matter of fact, the organization consists of people. Training them and putting them in their place in the organization, adopting and running the business with will is the most important aspect of the implementation of strategies.

**6. Control and valuation:** After applying the strategies, it is necessary to look at the results of the implementation and evaluate them. Were the desired results achieved with the strategies applied? If not, their reasons will be investigated. Communication and reporting systems will be determined about

what the works done for this purpose and their differences from the expected ones.

Strategic management system; It is understood that it provides partial support to managers in avoiding the crisis, solving the crisis and benefiting from the crisis. Accordingly, it can be said that the company has a tendency to avoid a possible crisis (taking measures against the crisis / reducing the impact of the crisis) by working on its own variables in avoiding the crisis. In solving the crisis, it is possible to say that when the crisis occurs, the current system can provide support to the managers in getting out of the crisis bottleneck. In the evaluation about benefiting from the crisis, it can be said that the system supports the managers in evaluating various environmental opportunities with its superior aspects in the crisis environment. Although this situation cannot be at the desired level, it can be evaluated as a result of the external environment studies. By evaluating these results interactively with other results within the framework of the system approach, it can be said that the system works mostly for the company.

It is understood that the strategic management system, the crisis management process, has problems in determining the crisis and the stages of crisis to the competitors. This situation supports the result that the strategic management system works mostly based on internal processes. Therefore, it can be said that the system cannot provide sufficient support in detecting crises that are usually external. Similarly, it is understood that the current system does not provide

support to competitors, who are a stage of the crisis management process, in creating crises. This may be due to the fact that the company does not have a domestic competitor in the domestic market and that it has very strong competitors in the international market. In addition, it can be said that managers do not adopt such an attitude. This situation can be evaluated as beneficial in terms of business ethics. However, when evaluated according to the current national and international competitive environment, it may be against the long-term interests of the company.

When the results of the five stages regarding the contribution of the strategic management system to the crisis management process are evaluated together, it can be said that the external environment-oriented structure of the system is not of the desired quality and therefore this aspect should be strengthened. However, considering that the system partially supports the stages related to the crisis management process (cannot provide support completely), it may be useful to review its internal side. Thus, the system will be able to contribute more actively to the crisis management process of the company (Karakaya, 2004).

## 4. STRATEGIC CRISIS MANAGEMENT

### 4.1. Definition of Crisis Management

risis management can be defined as the management model that undertakes the tasks of taking measures against possible crisis situations, minimizing the damages of the crisis after the crisis occurs,

and implementing and controlling the necessary preparations and activities for the restructuring of the organization after the crisis. The main task of crisis management; It is an organ that anticipates situations that may endanger the existence of an organization and takes necessary measures, and manages the process in order to overcome any crisis in the lightest way.

Crisis management is a concept that encompasses both disaster management and emergency management, and is more comprehensive. Crisis management is a process that includes pre-crisis, crisis moment and post-crisis and requires continuity. Disaster management, on the other hand, is a model limited to disasters, the process of preventing and reducing the damages of disasters, being prepared for disasters, directing and utilizing all opportunities and resources of the society before and after the disaster.

The main purpose of crisis management is to prevent it at the initial stage before the crisis occurs. In order to prevent crises, the administrations have to make a strategic plan against all kinds of extraordinary events and make the necessary organization for the implementation of this plan. The mentioned organization, before the crisis; It consists of experts in communication, transportation, rescue and debris removal, first aid and health, safety, environment, infrastructure services, public relations subgroups. With a good organization, it ensures that the problems that cause the crisis are prevented from growing or their effects are reduced. Although the administrations take precautions beforehand, different types of crisis

emerge due to reasons such as globalization and technological developments. This situation makes it difficult for the administrations to be prepared for all kinds of crisis and to prevent it completely (Filiz, 2007).

Crisis management includes analysis, planning, decision-making and evaluation processes that organize existing resources in order to be prepared for possible dangers, mitigate damages in times of crisis, intervene and improve. Since the risks that cause the crisis can be natural, technological or human-induced, crisis management should analyze these risks, save lives, prevent injuries, and protect property and the environment.

In conclusion, the main purpose of crisis management is to prepare the organization for the crisis situation. It is possible to handle the crisis management process in five stages;

1. Receiving crisis signals
2. Crisis preparedness and protection
3. Taking the crisis under control
4. Transition to the normal state
5. Learning and Evaluation.

Activities related to crisis management can be grouped under four headings:

1. Factors that may cause crises, the extent of the crisis and its effects are known in advance and mitigated and / or eliminated.

2. Increasing the effectiveness of techniques to be applied at the onset of the crisis

3. Elaborating and developing the response to the effects of the event that caused the crisis

4. Effective and swift replacement of damaged material and moral resources in order to eliminate the effects of the crisis.

In order to be prepared for and deal with the crisis effectively, the following factors should be considered:

**1. Crises are inevitable:** If the managers believe that the crisis is inevitable, this creates a fatalism in the organization. Thus, even taking the necessary measures to limit the impact of possible crises will fail.

**2. Lack of basic knowledge to prevent or understand the crisis:** This is a common approach in scientific / knowledge-based organizations. Since there is no scientific data on adverse effects, they do not take any action against the unproven side effects of their products.

**3. Better technology prevents future crises:** Advancing technology often builds the belief in management that the use of technologically safe procedures will prevent mistakes and crises. In fact, the effective use of technology can reduce the error rate, but the impact of an error or crisis that may occur will also be greater. High complexity, low risk, high impact systems are

becoming increasingly common, drawing the dangerous myth of organization management that security is guaranteed.

**4. Crisis management:** It is detrimental to organizational development: This is used by some organizations to justify their activities. He argues that too much security and protection for employees does not provide the necessary experience and opportunity for development. It is said that the danger of crisis and the fear of taking risks prevent new product development. Organizational development can be achieved in parallel with an effective crisis management policy.

**5. Emotions have no place in crisis management**: Crisis management also requires an ethical responsibility. An intuitive power and emotional understanding are important in crisis preparedness and dealing with it.

Knowing the myths about the crisis and not getting caught up in these myths is essential for an effective crisis management. Believing that crises are inevitable and that the crisis will happen no matter what is done leads the organization to fatalism. Such a situation limits the organization's mobility and crisis readiness. Waiting for the crisis to emerge and not taking any precautions beforehand is an important mistake to be made. It is not right to wait for signs of crisis based on numerical data. Technological tools are necessary and inevitable for the success of organizational activities. However, it would not make sense to rely too much on technological power in the face of a crisis.

Crisis management should be evaluated as a tool that supports organizational development, not an obstacle for organizational development.

The ability of organizations to carry out successful activities towards their goals depends primarily on reducing environmental risks and uncertainties. One of the duties of the management is to establish and make the methods to determine the negativities that will arise in the business activities beforehand. To this end, senior managers who make strategic decisions must frequently try to predict how and in what direction environmental variables will move in the future. In this respect, it is of vital importance to define information about the organization and its activities, to obtain data on environmental factors, to transform it into information by processing and to use this information in the decision process. The decision process that works slowly in rapidly changing environmental conditions is not appropriate. Therefore, the strategic management system may be more suitable in uncertain environmental conditions, as it will increase the efficiency of the decision by providing speed and flexibility in the decision process. Senior executives have the opportunity to use a large portion of their time to make effective strategic decisions for the future by predicting the speed and direction of developments concerning the organization with the strategic management system. Thus, they can become stronger than their competitors. Although the strategic management system brings a new perspective to crisis management, it should never be seen as a magic formula. It should not

be forgotten that the strategic management system will help senior managers in crisis management, but cannot decide on behalf of managers. In other words, the existence and efficiency of the strategic management system in the enterprise and its management the quality of gin is also important (Sarıkaya, 2004).

It is understood that the strategic management system, the crisis management process, has problems in determining the crisis and the stages of crisis to the competitors. This situation supports the result that the strategic management system works mostly based on internal processes. Therefore, it can be said that the system cannot provide sufficient support in detecting crises that are usually external. Similarly, it is understood that the current system does not provide support to competitors, who are a stage of the crisis management process, in creating crises. This may be due to the fact that the company does not have a domestic competitor in the domestic market and that it has very strong competitors in the international market. In addition, it can be said that managers do not adopt such an attitude. This situation can be evaluated as beneficial in terms of business ethics. However, when evaluated according to the current national and international competitive environment, it may be against the long-term interests of the company. When the results of the five stages regarding the contribution of the strategic management system to the crisis management process are evaluated together, it can be said that the external environment-oriented structure of the system is not of the desired quality and therefore this aspect should be strengthened.

However, considering that the system partially supports the stages related to the crisis management process (cannot provide support completely), it may be useful to review its internal side. Thus, the system will be able to contribute more actively to the crisis management process of the company (Sarıkaya, 2004).

### 4.2. Features of Crisis Management

Crisis management is a special management model whose tenure is limited to crisis, and it must have the following features.

a) Crisis management is a special type of management and it is a process management consisting of multiple phases.

b) Crisis management process is long, continuous and cyclical, and it is the whole of complex and interactive processes.

c) Crisis management is about situations that may endanger or make it impossible by posing a threat to organizational life.

d) Crisis management enables the organization to anticipate and be prepared for possible crises.

e) In crisis management, the way decision makers perceive the crisis and its levels are valuable in terms of preventing the crisis and the perception capacities of the people who will manage the crisis have an important place.

f) Continuity of crisis management is essential, there is no before and after.

g) An effective crisis management requires the organization to take control of the crisis and overcome it with the least loss.

h) Crisis management varies according to the characteristics and types of the crisis and the organization.

i) It is an interdisciplinary approach.

### 4.3. Goals and Basic Principles of Crisis Management

Crisis management must first determine the causes and types of events that the organization may encounter and can be considered as crises. It should aim to provide decision makers with accurate information about the characteristics of the crisis and the stage it is in, and to give the organization the ability to perceive, recognize and evaluate the crisis. They develop various techniques for managers to create crisis avoidance and crisis intervention plans. One of the goals of crisis management is to ensure that the necessary will is given to the rulers in the best possible way. In other words, managers can prevent the crisis at its inception; otherwise, limit and prevent the events or events that would otherwise give rise to the crisis; If this is not possible, they are obliged to manage the crisis in accordance with our national interests, and to conclude the crisis with minimum damage in other events without going into war in crises based on external threat. For this, it is necessary to use a crisis management system, a perfect organization and implementation method, and to make fast and correct decisions (Filiz, 2007).

Crisis management is related to events that may make it difficult and / or impossible for the organization to carry out its activities. “An effective crisis management should reflect a perspective that can

differentiate crises from minor accidents or emergencies; It should include all stages of crisis management (mitigation, advance preparation, emergency response, recovery and reconstruction) as a whole; It should consider the accumulated information and data and have a plan accordingly; should be handled with priority at all levels of government (local, regional, national and international); it should be clear, understandable and inclusive, and pluralistic; It should be structured in accordance with national, regional and local conditions; it must have a legal basis and be supported by political will; must be flexible and adaptable to new conditions; should be supported by the necessary financial means and be sustainable; priorities and needs must be taken into account; all environment that may be affected by practices should be considered; reflect an interdisciplinary, integrated and strategic perspective; pay attention to information flow and communication; It should focus on the most basic and urgent issues and be capable of preventing and minimizing damages. " (Erten, 2011).

It is to ensure that the institution is ready for a crisis and that it is overcome with the least loss and damage in case of any crisis.

### 4.4. Phases of Crisis Management

Crisis management consists of four basic stages. While these stages may overlap in some cases, they may need to be managed at the same time. Although the intertwining of the phases makes it difficult to distinguish between the phases, it is useful to use and examine them

by accepting that they are independent from each other. However, crisis management should consider the stages of the crisis as a whole, and be implemented effectively before, during and after the crisis. Effective implementation of preparedness and mitigation without a crisis, intervention at the time of the crisis and improvement afterwards should be made. These stages are:

### a) Crisis Preparedness

In this phase, effective emergency management efforts are carried out to improve the preparedness for any crisis threat, mitigate the damages, intervene and return to normal life afterwards through planning, training and practices.

Risk analysis and mitigation phase consists of creating legal regulations to be applied for disasters according to the needs of the country, rearranging the regulations on structuring and natural disasters, re-determining the risk of disaster occurrence on a local and regional, even country basis, and preparing hazard maps (Ergünay, 1996). In addition, it is necessary to carry out and continue researches at academic and technical level, to create earthquake and other recording networks to collect all the necessary data on a country basis and to continuously record and evaluate the data, to collect the data collected and make usable in a public data center and the use of relevant institutions. large-scale studies, including the provision of early warning and control, the preparation and implementation of education programs that include all segments of the society, are

included in this phase. The implementation and sustainability of disaster risk prevention and disaster mitigation engineering measures can be counted by taking the main activities to be carried out during the risk analysis and mitigation phase.

The Emergency Action Plan, which is a process of the preparation phase, reveals the dangers to be faced by a settlement unit under the threat of disaster, determination of the risk of these dangers and the damage and losses to be incurred in case of occurrence, and with which authority and when the institutions and individuals to be assigned to minimize them. and the plan explaining which resources to use (Ergünay, 1999).

**b) Mitigating the Damages of the Crisis**

These are continuous activities that are carried out to minimize or completely eliminate the damages caused by the loss of life and property as a result of various dangers and their effects.

The aim of the emergency measures taken immediately after the disaster and the works carried out is to save the most life as soon as possible and to ensure that the injured people regain their health. In addition, the activities to protect the lives and properties of the people affected by the disaster from the dangers and risks that may occur after the disaster and to meet the needs of the society as soon as possible and to carry out the necessary activities for the normalization of social life in the region affected by the disaster. The work carried

out during and after the disaster consists of first aid and intervention and reconstruction processes.

### c) Intervention

It is the work of carrying out emergency actions to evacuate disaster victims by using emergency personnel, equipment and resources in order to protect or rescue living creatures and property under risk, to provide food, drink, shelter and medical care to those in need, and to ensure the operation of critical public services.

The first aid and response phase is the whole of the activities of the disaster management plan that start with the occurrence of the disaster, covering a maximum period of 2 months, depending on the type, size of the disaster and the characteristics of the area where the disaster occurred (Ergünay, 1996). The purpose of the activities carried out at this stage is to intervene in the event as soon as possible, to save the maximum number of lives within the framework of search and rescue activities and to treat the injured with first aid, to ensure that the society meets the essential needs such as food, shelter, medicine and security (Ergünay, 1998). This phase includes communication, transportation, environment and human health, damage assessment, removal of collapsed buildings, fire, explosion and communicable diseases that will increase the negative effects of disasters (Ergünay, 1996).

**d) Improvement**

It is the revision work to ensure that society and individuals, workplaces, residences, common areas and state institutions can work on their own, return to normal life and protect them against possible future risk threats.

Risk management is a changing management in line with the changing world conditions, so it must be constantly updated. Successful and effective implementation of crisis phases can be realized by predicting the possible crisis of the organization to be made and sharing the responsibility. Including a holistic structure in the risk management organizations, the relevant units can be easily integrated in all four phases, and the sharing of responsibilities within the organization in line with their areas of expertise, and effective communication between the units ensures that the disaster is kept under control. The integration of the four phases in risk management can be achieved by the coordinated work of the public, private sector and voluntary organizations at the highest level.

The purpose of this stage is to carry out all the necessary work for the normalization of communication, transportation, basic needs, electricity, sewerage, education, permanent housing construction, economic and social life of the disaster-affected regions. Restructuring activity is the longest lasting phase of crisis management on a yearly basis (Ergünay, 1996).

### 4.5. Crisis Management Strategies

Actually everything starts by accepting the crisis. It is necessary to accept it first and then work it out without panic, so you can get support from the following items.

**Creating the right team:** The team is always important, not just in crisis. After you have a solid team that does its job properly, you will not be back. Instead of a crowded and empty team, concentrated and effective staff selection is important. It is important to build a solid team for crisis management, especially during the crisis. First form your crisis management team. In situations like this, the first thing you need is the team.

**Accepting the crisis:** Often, when we face a negative situation, the first thing we do is often denial. We don't really like to accept and digest, so most of us are like that. However, accepting such situations is the first step. We do not know whether to adopt the crisis, whether to recognize it, or to accept it, we know that denial does not bring us profit.

**Calming the nerves:** If you are working in an institution and this crisis is an institutional crisis rather than a personal crisis, then one of the things you need to do is to calm the nerves. This can be a customer anger or your boss' anger. Instead of fueling the fire, one of the first things you need to do is to maintain calmness to keep calm! This means that you calm the angry side and convince it that the crisis will be overcome.

**Being solution-oriented:** There was a crisis, okay, it still happens, okay. Now we are not going to sit and wait and watch him hurt us. What to do, we will be solution oriented. If necessary, we will work until the morning, catch the emptiness of the crisis and enter through that door. Even if the end is near, we must find ways to manage this job as much as we can without giving up.

**Checking for the past:** Experience a quick flashback. Have you encountered a similar situation like this before? If you met, remember how you solved it. Perhaps you are holding the solution to the crisis in your own hands. It's time to dig a little past.

**Being ready for changes:** You should not get caught up in the crisis period emotion. Because as a result of this crisis, you may be able to make some changes. For example, this change can occur in people and processes. Maybe layoffs, maybe some changes in operation. It will be for your wife that you do not act emotionally and resolve the crisis in the best way management and equity.

### 4.6. Strategic Crisis Management Types

Studies on crisis show that crisis management generally follows three main stages. This process is explained by three models: the proactive crisis management model that includes the stages of signaling and preparation and prevention, the reactive crisis management model that includes the damage limitation and recovery stages when the crisis occurs, and the interactive crisis management model as the learning stage between these two models (Türkel, 2001). Among these models,

the proactive crisis management model shows that crises can be prevented before they occur. The reactive crisis management model focuses on the activities to be carried out after the crisis occurs. The aim here is to minimize the damages of the crisis and to recover as quickly as possible. Interactive Crisis Management Model deals with the adaptation of the institution to new situations as well as overcoming the crisis (Demir, 2008).

Crisis communication efforts are handled within the framework of acute crisis periods and post-crisis image renewal efforts. However, crisis communication is a long-term push that covers pre-crisis, crisis and post-crisis communication efforts. Pre-crisis efforts aim to recognize the elements of the crisis and to guide the measures to be taken. Post-crisis communication efforts are aimed at influencing perceptions, maintaining the positive image and reconstructing the image. (Ray, 1999). In this process, opportunities to explain the organization's values, mission and practices will be captured through crisis communication (Lerbinger, 1997). The communication process during crisis periods is being tested seriously due to the uncertainty caused by the crisis. In crisis situations, because there may be a lack of verifiable information about what has happened or what will happen, people are more actively seeking information and become more dependent on the media to receive this information. “Providing quick, accurate and complete information in crises is an element of great pressure” (Wilcox, Ault, & Agee, 1998). Among the essential elements for a successful crisis communication; As can be seen below,

the communication plan, crisis team and crisis communication strategy are included.

The types of crisis management, even if it is an application-oriented field such as management, the perspectives and thinking styles of managers and employees are important in addressing the problems, developing solutions for this and applying these solutions. For this, first of all, types of crisis management should be examined. Crisis management consists of two types, active crisis management and reactive crisis management. Active crisis management; It has an aggressive character and is directed at stages in which the crisis does not manifest clearly. Responsive crisis management; has a defensive character. It gains importance in controllable and uncontrollable crisis stages, when the crisis clearly appears. The task of reactive crisis management is explained as eliminating crises that have become apparent or minimizing their negative effects (Güneş ve Beyazıt, 2010).

**Management and organization:** The concept of management is generally defined as "a group activity carried out in cooperation to achieve certain goals or objectives". Management can be considered as activities related to planning, organizing, executing, coordination and control functions in order to achieve the objectives effectively and efficiently.

In the management, which expresses the process, not the event, the resources available are organized in a way to ensure efficiency in order to achieve the predetermined goals. The concept of organization, on the other hand, refers to the establishment of a stepwise and formal structure between the administrators and the managed, and the clear determination of the works and the people who will do them and the relations between them. Organization is a system that shows how to achieve the goals determined by the management in the most effective and efficient way.

**Plan and planning:** The plan, which is the set of systematic decisions taken to achieve a goal, shows the way and behavior to achieve a goal.

Planning can be defined as the process of determining the goals and the activities required to achieve these goals. In other words, planning is to choose among alternative forms of action for the future.

Effective planning should include analysis of past information, decision making in the current situation and future evaluation. A correct planning helps to use the resources more effectively and efficiently.

The plans must have certain characteristics in order to achieve the expected goals.

**Organization and Coordination:** Organization, which is another management function, refers to the formation of management units by grouping the necessary activities to implement the determined plans,

the definition of the duties of the managers and employees in these units and the arrangement of the relations between them; The steering function refers to the power and effort of using the available resources in the most appropriate and effective manner and directing them to specific goals.

The coordination function of the management refers to ensuring the integration of activities with each other in order to achieve a common goal, while control refers to the continuous monitoring and evaluation of whether the specified goals are achieved effectively and efficiently.

In order to achieve common goals effectively and efficiently, the functions of planning, organizing, directing, coordinating and controlling the activities of the human group must be fulfilled above all.

Each of these elements, which form the management process and are also described as management functions, affect the other and form a part of the system. The success of management depends on the effective and efficient performance of these functions.

As can be seen, these basic concepts, each of which can be addressed more broadly, have been defined in order to achieve common goals effectively and efficiently.

Although its subject and field is different, the disaster management discipline also serves this basic purpose as a management area and activity, provided that it remains in its own field.

Due to the inevitability of crises that threaten the existence of an organization, many organizations develop crisis management plans. This list of plans generally includes seven basic elements. These:

- Developing a mechanism to identify potential crises,
- Identifying the internal and external target audience to be affected,

Procedures to be followed during the crisis,

- Preparing contingency plans for business continuity during the crisis,
- Appointment and training of the crisis management team,
- Development of the crisis communication plan,
- In response to simulation scenarios, the crisis plan is evaluated and preliminary preparation for possible real crises.

Crisis-oriented trainings contribute to the personnel's understanding of the process of possible crises, thus enabling them to take preventive management measures against the crisis in the most effective way and to determine the tactics to exit from the crisis. These trainings; It includes why and why members of the organization attach more importance to safety and what should be done in the phases of the crisis by catching the crisis at the beginning, minimizing the damage (Okkay, 2019).

## 4.7. The Importance of the Media in Regional Crisis Management

Today, crises can also occur over new media. Some of the things to be done in the crises experienced over the new media (Kalaycı, 2017);

- Regardless of the size of the crisis, any crisis should not be underestimated.
- A special crisis plan needs to be prepared as it differs from traditional crises and spreads faster.
- Crisis communication should not be left to the initiative of the social media manager or social media agency of the institution and should be supervised by the senior management.
- Correct corporate communication is important in crisis situations. In order not to give reasons for the rumors, the message should be shared by the spokesperson in an accurate, clear and clear way.
- It should not be thought that the crises experienced in social networks will only stay here, and comments made from different channels should also be followed.
- Since it is a global environment, it should not be forgotten that negative rhetoric spreading in new media can spread globally.
- An immediate explanation should be made about the crisis and if the organization is at fault, it should apologize immediately and express that it will correct the situation. Even if the organization is not wrong, it should still explain and prove with data that it is not wrong.

- In order to prevent a possible crisis, every bad comment about the institution should be answered immediately, if there is a misunderstanding, it should be eliminated. If there is a problem, it should be compensated by trying to solve it immediately.
- People who will manage the crisis should be trained and experienced in their fields and should be in coordination with the management in every process.

Responding quickly in order to conduct a successful crisis management contributes to reducing or decreasing the severity of the crisis by avoiding rumors. The consistency and correctness of the content of the messages made by the organization facilitates the information exchange with the public and stakeholders and is also important in terms of not damaging the reliability of the organization (Østergaard, 2010).

The most critical element of crisis management is the prediction of possible risks. Crisis management includes the process of preparing strategies for a possible future crisis, taking into account factors such as the cause, frequency and recovery rate of any crisis. Risk management in this context; It is the process of determining risks in advance, evaluating the possibility of negative consequences beforehand, and then taking steps to reduce or eliminate them. Risk management includes management activities such as reducing the risk by selling the source causing risk, reducing the risk by diversification, and reducing the risk by purchasing insurance against losses. The risk analyst is required to follow specific risk assessment processes in

order to implement appropriate risk management strategies. In terms of corporate finance, risk management strategies and models are used to select portfolios with different exposure characteristics. Although it defines various crisis prevention tactics, business organizations also need to be prepared for crises that cannot be prevented (Bulgu & Islam, 2007).

Crisis management plans do not always include a consistent and well thought out public communication strategy. Crisis communication ensures that the organization responds appropriately to maintain public trust and minimizes damage (Ray, 1999).

## 5. DISASTER MANAGEMENT

### 5.1. Definition of Disaster Management

Disaster management can be expressed as the management of resources with all institutions and organizations of the society and the public in order to plan and implement the necessary works in order to prevent disasters and reduce their damages.

Accordingly, it refers to the process of struggle that must be done by the society in order to prevent disasters and reduce their damages, to respond to the events that result in disasters in a timely, fast and effective manner, and to create a safer and more developed living environment for the communities affected by the disaster.

In other words, disaster management, the dangers faced by a settlement unit, in order to predict the losses and damages that will be incurred in the event of these dangers, and to keep these losses and damages at the lowest level, when, with what duty and authority, It is a clear planning by which resources they will undertake and their implementation during and after the disaster.

The main feature of disaster management is the coordination of the plans prepared by many institutions and organizations together and each of which has its duties and responsibilities. For this purpose, regardless of the size, after the preparation of disaster plans, institutions, organizations and individuals who are assigned duties and responsibilities within these plans need to make an effective action plan and update them depending on time in order to fulfill their duties in a timely, fast and effective manner. .

The purpose of disaster management is to minimize the risk of loss of life and property caused by a disaster and to save those who are most exposed to disaster. In addition, it can be expressed as protecting the natural environment, cultural and natural assets, ensuring the normalization of social life as soon as possible and taking them further than before, and ensuring the continuity and sustainability of public and private sector services that society needs.

## 5.2. Phases of Disaster Management

In the concept of modern disaster management, pre-disaster protection studies such as loss and damage reduction, preparedness, forecasting and early warning, understanding disasters are called “Risk Management”; Post-disaster studies such as impact analysis, intervention, recovery, and restructuring are accepted as “Crisis Management” (Kadıoğlu, 2008).

When the Traditional Disaster Management Model (GAYM) is explained terminologically, it is expressed as a system that integrates the precautions to be taken before and after the disaster both separately and in order to prevent the loss of life and property or to reduce this loss. Accordingly, the prevention and preparation phases refer to the work to be done before the disaster, and these studies are also called “proactive” approaches. The intervention and recovery phases, on the other hand, indicate post-disaster studies, and these studies are also called "reactive" approaches. The inadequacy and ineffectiveness of existing traditional disaster management policies and strategies are attributed to the fact that they are not based on a holistic and risk-oriented approach, as well as many reasons. The traditional approach, which evaluates the disaster view as fragmented, handles disaster management separately as "before the disaster" and "after the disaster" in a process that is independent from each other and has no continuity.

Disaster management consists of three phases: before, during and after the disaster.

**In the pre-disaster phase;** Taking all necessary technical, administrative and legal precautions for the society to overcome with the least damage and physical losses due to possible disasters, preventing incidents and, if they cannot be prevented, ensuring that search-rescue, emergency aid and recovery works are carried out in a timely, fast, efficient and effective manner, activities are organized to include the efforts to reduce mitigation at every stage of development or development planning and thus to prevent the increase of the existing risk and to ensure a sustainable development, to implement educational programs that will ensure that every segment of the society is equipped with the necessary information to get rid of the effects of events with the least damage, and to create a harm reduction culture in the society. Pre-disaster period is the prediction of disasters and ensuring that the society is warned as early as possible. In addition, all kinds of tools, equipment and personnel inventory that will ensure urgent intervention in case of a disaster, planning and arrangements for their activation are among the applications that should be done before the event.

Efforts such as rescue after natural disasters, first aid, emergency treatment, nutrition, providing shelter, resolving the infrastructure problems of temporary settlements, and providing sufficient and clean water require an effective and organized work. Sometimes it becomes compulsory to work in cooperation with all institutions of the state,

sometimes international assistance may be required. We know that disasters cause important public health problems. It causes an increase in morbidity and mortality rates in a short time and reduces the quality of life. With its long-term environmental responses, it increases the rate of illness and untimely deaths, and makes the quality of life constantly low in the future.

Injuries and injuries are higher than deaths in storms, explosions, fires, famines and epidemics. In earthquakes, landslides, volcano eruptions, tidal waves and floods, deaths are more common than injuries. Although serious outbreaks are disasters in themselves, sometimes important outbreaks can occur after other disasters. After disasters, food and waterborne diseases such as typhoid and cholera, diseases such as plague and malaria spread by vectors, and human-to-human diseases such as hepatitis A and shigellosis are on the rise.

**In primary prevention,** efforts to prevent the emergence of the disaster or its impact are essential. The second protection includes all efforts to predict the disaster or to be informed on time and to eliminate its consequences. An effective pre-existing emergency plan is very effective in providing emergency health care to people. This plan should be simple, clear and concise, short and complete. It has to be a flexible, frequently reviewed and adapted plan. The people who are supposed to be involved in the plan must be aware of the plan. The priorities that the plan should cover should be listed in the plan (Wackerle, 1991)). These include the urgent applications to reach healthcare services for the injured or to take healthcare services to the

areas where the wounded can benefit (as much as necessary), to prevent fires, to repair broken power lines and communication lines, to prevent natural gas leaks (especially in large cities), and to prevent epidemics.

**In the moment of disaster;** providing information from the disaster area and re-providing the disrupted transportation facilities, carrying out search and rescue and first aid activities, establishing temporary housing areas for people and meeting the vital needs of people, taking safety measures, possible situations such as fire, explosion, infectious diseases, etc. and damage assessment studies are carried out as soon as possible.

**In the post-disaster phase;** To carry out activities for the least human loss and injuries as much as possible, to ensure that the injured recover their health urgently, to meet the vital needs of the communities affected by disasters and to make life normal as soon as possible, to reduce the physical, economic, social, psychological and environmental losses caused by the disaster. Efforts are made to manage the low level of life and to create safer and more developed living spaces for the communities affected by the disaster.

Community members can be affected almost at the same rate. People can use all the technological ones they have to destroy other human societies and destroy their living spaces. The great loss of life and property caused by the first and second world wars, and the front and back effects can be a very good example of this. One of the scariest

examples of this is the atomic bomb. It is impossible to forget the death and destruction caused by the atomic bombs dropped on Hiroshima and Nagasaki at the end of the Second World War. In addition to its direct effects, some permanent effects that have passed from generation to generation still continue to affect them.

Determining the extent of disasters after disasters is necessary for the measures to be taken and the aid work to be done. After the problems related to the disaster are resolved, the nature of the disaster, the degree of impact, and the effectiveness of the measures taken should be reviewed. In particular, the size and causes of loss of life and property must be carefully determined. The major disasters that have been seen before in the world and their results are important sources of evaluation. Persons and organizations to take part in disasters should be determined in advance. The work of different institutions and organizations should be coordinated. Civil defense organizations, all institutions and organizations of the society have to work in cooperation and coordination. Community members should be educated about disasters. Among the subjects of training, issues such as accident prevention and first aid should especially be included. Communication and security should be provided in disaster areas. With regard to environmental health in disasters, providing shelter, water supply, solving the waste problem, food health, rodent and insect control, and the organization of daily life of disaster victims are especially important.

## 5.3. Strategic Disaster Management Principles

The main goal of Strategic Disaster Management is to carry out the necessary studies for the effective management of disaster and emergency processes, to ensure coordination between relevant institutions and organizations and to produce policies in this field. For this purpose, a management that focuses on risk management, has the importance of sustainable development, pays attention to efficiency, effectiveness and reliability in service delivery, is strong at the international level, and effectively coordinates all institutions involved in disaster management. In addition, it should improve the awareness and preparedness of the society regarding disasters and emergencies in line with the understanding of risk reduction.

The basis of an integrated and risk-based disaster management approach is based on the fact that it is not possible to evaluate and analyze disasters from a single perspective perspective of traditional disaster management and to develop appropriate mitigation studies. It is necessary to develop holistic, multidisciplinary and risk-based perspectives and institutional structures in order to understand the root causes underlying dangers and the resilience of societies. This transformation in disaster management poses an inevitable situation for today's society, which is going through the transition period from "modern society" to "risk society".

It will only be possible through education to achieve a satisfactory level of awareness and preparedness and to cope with natural events before they become "disasters" or "disasters". " According to the Integrated Disaster Management System, in order to prevent the damages caused by disasters and emergencies, pre-determination of dangers and risks, taking measures to prevent or minimize the damages that may occur before the disaster, effective intervention and coordination is necessary as well as It is also of great importance to be aware of and ready for the situation (AFAD, 2019).

**Basic principles in strategic disaster management:**

- Openness and Transparency
- Participation and Sharing
- Accountability Effectiveness and Efficiency
- Consistency and Integrity

For this purpose, the following phases must be completed:

**1. Coordination and communication:** To increase the effectiveness of coordination in disaster and emergency management.

**2. Risk reduction:** To ensure the adoption of a risk-oriented integrated disaster management approach and its integration in all sectors.

**3. During and after disasters:** To manage the processes during and after disasters in the most effective way.

**4. Social awareness:** Being constantly prepared for disasters and emergencies by increasing social awareness.

**5. International effectiveness:** Being one of the leading organizations in the international arena.

**6. Institutional capacity:** Being a constantly learning and developing institution

Basic objectives in strategic disaster management:

1. To increase the effectiveness of coordination in disaster and emergency management: To improve standardization in disaster management. To increase the effectiveness of the civil defense system in disaster and emergency management. To provide effective communication and communication in disaster and emergency management. To increase the efficiency of information systems to be used in disaster and emergency management and to provide decision support.

2. Ensuring the adoption of risk-oriented integrated disaster management approach and its establishment in all sectors: Supporting and carrying out studies aimed at reducing disaster risks. Identifying disaster risks. Developing disaster management support systems. To prepare a strategy document to determine the shelter policy of our country. To be a regional center that provides reliable and fast earthquake information.

3. Managing the processes during and after disasters in the most effective way: Developing reconstruction and recovery processes in disaster and emergency areas. Developing and applying the appropriate management model. Increasing the response capacity. To spread the warning and alarm (siren) system throughout the country. To ensure that the training and psychosocial needs of the staff in the field of psychosocial services are met. To increase the functionality of the Disaster Response System.

4. Being constantly prepared for disasters and emergencies by increasing social awareness: To increase the training and implementation capacity regarding disasters and emergencies. To increase the level of public awareness on disasters and emergencies and civil defense. To inform the public correctly and to prevent information pollution in disasters and emergencies. Establishing and expanding the volunteerism system.

5. To be one of the leading organizations in the international arena: To increase the performance of international humanitarian aid. To increase the activities that strengthen the international corporate presence. To have employees with international competence. To carry out risk reduction activities in the international arena. To strengthen the institutional presence in the international arena related to earthquake research.

6. To be a constantly learning and developing institution: To improve the physical and technical infrastructure of service buildings and social facilities. To increase the response capacity for disasters. To ensure the development, effective use and dissemination of corporate information systems. To ensure information integrity and data security, to increase information security awareness. Improving strategic management and internal control mechanism. Developing information systems that will provide decision support in disaster management.

Various segments of the society should be involved in this process in strategic disaster management. The main feature of disaster management is that the plans prepared by many institutions and organizations are coordinated and each of which has its duties and responsibilities. For this purpose, sustainable disaster management, taking into account all activities before and after the disaster; It is possible to express it as a cycle consisting of recovery / first aid, reconstruction / improvement, development, prevention / risk reduction and preparation stages (Erkan 2010).

There is a continuous interaction between these components that make up the disaster management cycle and they assume a complementary function to each other. These components; They also include sub-components such as forecasting and early warning, impact and needs analysis, and restructuring. Failure to give due importance to a component or focusing on only one component causes disaster

management not to be carried out efficiently. The simultaneous execution of these components sometimes causes difficulty in distinguishing between components. In the disaster management system, pre-disaster prevention activities such as prevention / risk reduction, preparedness, forecasting and early warning, understanding of disasters and impact analysis are pre-disaster (risk management); Corrective actions such as rescue / first aid, reconstruction / recovery are called post-disaster (crisis management) (Kadıoğlu 2008).

Risk management phase, which is the pre-disaster phase; To take precautions against the consequences that may arise from disasters in order to minimize the damage, to prepare to intervene in time, in the most appropriate way and with the most effective organization. The most important and first stage of risk management is risk (loss) reduction. Risk reduction; These are the activities and measures aimed at reducing or eliminating the loss of life and property that may occur due to dangerous situations. Risk reduction also aims to reduce losses and injuries by educating the public on simple precautions (Kadıoğlu 2008). The risk reduction phase starts with the activities in the recovery and reconstruction phase after disasters and continues until it becomes a new activity. The activities carried out at this stage show a wide range of application areas on the basis of country, region and settlement. The work to be done at this stage can be listed as follows (Ertürkmen 2006):

• Reviewing and, if necessary, rearranging the legal legislation, building and earthquake regulations, zoning legislation and land use regulations to be applied in the event of a disaster,

• Determining and developing disaster hazard and risk on macro and micro scale and creating hazard maps,

• Establishment and development of earthquake recording networks and disaster early warning and control systems,

• Development and implementation of preventive and mitigating engineering measures against disasters

• Training on disaster mitigation covering all relevant segments, etc. is the execution of activities.

The preparation phase, which is the second important phase of risk management, includes determination of authorities and responsibilities and organization of resources in case of emergency and disaster. At this stage, all administrations should make the necessary assignments or determinations for emergency / disaster management tasks, "Rescue and Emergency Aid Plans" should be prepared at the provincial level, maintenance of equipment and equipment, use of forecasting and early warning systems, training of personnel and other activities should be constantly updated (Kadıoğlu 2008 ; Ertürkmen 2006).

The response / rescue / first aid phase included in the post-disaster crisis management phase; These are the activities that start right after the disaster and are carried out within a few months at most depending on the magnitude of the disaster. In addition to the efforts to save lives

and property, it is necessary to start work to return the emergency situation in the administrative unit in the region to normal. Determining the personnel to take part in the intervention phase, warning and informing the public, evacuation and housing, providing nutrition, warming and security, search and rescue activities, first aid, information and transportation, damage assessment, psychological support and even assistance to be requested from outside the region These are studies within the scope of the "intervention" phase. Among the activities carried out at this stage; Environmental health and preventive medicine studies are also included to prevent secondary disasters such as fires, explosions, and contagious diseases (Erkan 2010; Kadıoğlu 2008).

Another phase in the crisis management phase is the improvement phase. The improvement phase is carried out together with the rebuilding phase. The aim at this stage is; Reconstruction and development of communication, transportation, water, electricity, sewerage, education, social and cultural activities and economic activities and carrying out temporary / permanent settlement works in order to establish a safer and more developed living space before the disaster by identifying new risks that may occur. It includes activities related to (Erkan 2010). For example; Aid to those who built their homes in villages and cities during the earthquakes of 17 August-12 November and loans were paid to the victims according to the Law No. 4133, according to the 29th article of the Law No. 7269 (Ertürkmen 2006).

At the United Nations International Disaster Mitigation Strategy (UN-ISDR) meeting held in Kobe, Japan in 2005, the issue is now approached in a long-term with the Hyogo Framework Action Plan (HFA), which was formed by the joint decision of 168 countries. Modern disaster management defined in this plan is an integrated chain of actions that requires knowing the dangers and risks that lead to this situation and taking precautions to prevent or minimize them before the incident occurs with the most rational methods in order to prevent the damages caused by disasters and emergencies. Today, many countries develop their disaster management systems and disaster strategies in line with HFA. Issues such as the participation and informing of the society, which are determined as common working areas in the plan, the encouragement of the work of the volunteers, the promotion of education, the more effective participation of women in the process, are the principles that emerge from the practices of countries that are successful in disaster management. Turkey's Hyogo be sensitive since the beginning of the Action Plan and finally Disaster Risk Reduction of the establishment of the National Platform should be considered as an important development. The three strategic goals of the action plan, which guides countries to make plans and policies on disaster risk reduction, are as follows (Akın & Kuterdem, 2012);

- Integration of disaster risk reduction, sustainable development policies and plans,

- Developing institutions, mechanisms and capacities to create awareness and sensitivity against disasters and strengthening existing ones,
- Systematic participation of disaster risk reduction approaches in emergency preparedness, response and recovery programs.

In order for the risks to be managed properly, it is necessary to be competent in scenario studies and to be open to all kinds of thoughts in this context. The multi-actor, multi-disciplinary nature of the disaster event may require a multi-center application of the same dimension to prepare these scenarios. It is necessary to examine all such scenarios prepared in different centers without embargo, and to prepare our basic scenarios by making maximum use of them.

Today, the highly complex disasters and their consequences, together with the multi-actor, multi-disciplinary and multi-purpose nature of disaster management, clearly show that disaster management efforts cannot be limited to interventions during and after the disaster.

Our recent history reveals that taking the necessary precautions before a disaster occurs is as important as effective and efficient response activities during the disaster.

For this reason, the necessary work for a modern and integrated disaster management system suitable for today's conditions are as follows:

- Taking all dangers into consideration.

• Implementing all phases.

• Using all resources.

• To ensure that all individuals and institutions participate in these studies.

Besides, Emergency Preparedness is very important in strategic disaster management. For this purpose:

1. Technological Readiness: Technological preparedness is of great importance in terms of minimizing the impact of events. Technological measures to prevent accidents in factories, location selection, anticipation of some natural events are very effective in minimizing loss of life.

2. Informing the Society and Training: It is among the practices that are effective in minimizing the loss of life and property in disasters by educating and informing the society in advance about possible events, things to do, what should be done to minimize the damage and the reasons. It provides significant benefits when all kinds of information, from building construction technology to explanations on what kind of applications should be done during a disaster, how to be organized, are made in accordance with the purpose.

3.Infrastructure: Water resources, warehouses, transmission network, electricity stations, food storage and storage places should be built in a way that is resistant to common disaster

types, at least in areas that can be easily transmitted or connected to the disaster area, and the infrastructures in the disaster area should be it should be done using durable technology.

Healthcare services should be organized in a reliable way and priority should be given to care of the sick and injured.

1. Coordination of voluntary aid
2. Effective use of available facilities and existing institutions and organizations
3. Establishing a storage and regular distribution system
4. Establishing an effective communication network
5. Providing transport systems and vehicles for all purposes
6. Practices aimed at informing the public and preventing purposeful rumors
7. Establishing a recording order
8. Traffic and crowd control

The main applications that should be focused on in case of a disaster can be listed as follows;

1. Rescue of the disaster victims
2. Providing emergency medical care
3. Eliminating hazards such as fire and gas leakage
4. Evacuation of the danger area
5. Continuation of preventive and other medical services

6. Water supply
7. Providing nutrients
8. Providing clothing
9.Providing shelter
10. Disposal of human waste
11. Protection from vector-borne diseases
12. Burial of the dead
13. Disposal of solid waste

Important social problems can also arise during and after disasters. Disaster-induced migration, reduction of job opportunities, and damage to livelihoods, especially animals, are the main reasons. Measures that will enable people to become self-sufficient and have a job after a disaster should also be emphasized.

In the lessons learned after disasters, the relationship between early warning and natural disaster can be predicted. Those who experienced disasters answered this question by emphasizing that they remained in a feeling of "fear and helplessness" and remembered death. Those who faced fatal human losses and building demolitions stated that they were still affected by the trauma they experienced. In disasters occurring in rural areas, due to the restrictive transportation effect of spatial features, landslides etc. In addition to being unable to move away from the current location due to reasons such as search and rescue, pollution, etc., the emphasis is on being less resilient in the post-disaster process. Fear, desperation, and not knowing what to do evaluations overlap with the perception of "rural vulnerability". Those

who encountered fire stated that they fell into "despair" and "their souls were hurt". Before the storm with early warning, while collecting objects that could fly in the partnership, the participants stated that they were “excited” and they thought that people's insensitivity to disasters (Karaman, 2019).

Education of people is very important in strategic disaster management. For this, people are provided with training that will change their skills, actions, attitudes, behaviors, and increase their knowledge and skills, in short, their personal development, as well as using their free time. The fact that the said capacity building trainings are carried out by expert organizations will create a potential that can increase the benefit. Also, another point made strongly emphasized in Turkey, in order to reduce psychological negative effects of being affected, not just those affected by the disaster, but also search-and-rescue operations for those who are the subject should be given psychological support.

In addition to these, creating disaster management plans to reduce disaster risks is the most logical investment for sustainable development. Activities that are not carried out as required by risk analysis and mitigation and preparation stages appear as loss of life and property after a disaster. Therefore, it is important to identify, analyze and manage risks with risk management, which is a part of a good disaster management plan, in terms of efficient use of resources. In addition, it is necessary to preserve property, environment, cultural

and natural assets, to ensure business continuity and efficiency, and the continuity of services.

The vast majority of natural disasters in our country turn into crises. However, if a risk analysis is made before any natural event occurs, it will be prevented from turning into a crisis and resources will be used more efficiently. From this point of view, it is important to develop strategies to be prepared for a disaster before an event occurs or to turn into a disaster, to prevent or at least minimize loss of life and property. However, a disaster management based on risk analysis should ensure the protection of the environment and ecosystem and increase the quality of life of the society (Şahin & Üçgül, 2018).

## 6. CONCLUSION AND EVALUATION

Today, natural, technological or human-induced disasters can be very large in terms of damage to people's lives and properties and the environment. One of the most important problems of today is the negative effects of disasters on economic development and growth. These effects vary according to the extent of disasters and the rate of exposure to natural disasters depending on the development level of societies. Not being able to predict exactly when and to what extent the dangers that may cause disasters will occur requires measures to be taken to prevent or reduce the risks before the disaster.

The most effective solution against extraordinary events such as crises and disasters is to anticipate these events and their consequences, to take the necessary measures, and to successfully manage the chaotic situation that occurs, to overcome with the least damage. For this purpose, a crisis and disaster management model that ensures active public participation and basically voluntary-based encouragement and where duties, powers and responsibilities are clearly defined should be established. In other words, the solution of crisis situations that may arise can only be possible with a crisis management process involving all the people, institutions and organizations affected by the crisis.

The material and moral losses suffered as a result of crisis and disaster, increasing the importance of mitigation efforts, and this raises the necessity for every society to have an action plan for crisis and disaster. Crisis and disaster management, which is formed by the combination of these actions, includes analysis, planning, decision-making and evaluation processes that organize existing resources for the purpose of preparedness for all kinds of hazards, mitigation, intervention and improvement. It should not be forgotten that taking the necessary preparations and measures before a crisis or disaster is as important as effective intervention during the event.

In addition, strategic crisis and disaster management can be possible with an organizational structure in which tasks, authorities and responsibilities are not very complicated and are determined in a simple way. The organization in question should be compatible with the normal structure, the organizational structure, the resources to be

used, the participating organizations, the type of response according to the type of emergency, the crisis and disaster management plan to be prepared in advance should be clearly included. In this context, it is necessary to give more authority to local administrations, which are the first public organizations to face disasters.

It should be ensured that all public institutions and organizations and non-governmental organizations within strategic disaster management continue their activities with the understanding of total quality management. Because, as mentioned before, prevention is dominant in total quality management philosophy. Instead of making mistakes and detecting them, taking predictive measures is the basis of total quality management.

Besides, education is one of the basic elements of struggle against crisis and disasters. Despite the successful intervention and improvement in every disaster that occurs in our country, the fact that he is caught without preparation and education against disasters and suffers great loss of life and property is also due to lack of education. Especially activities related to search and rescue groups in the preparation and mitigation phase and these groups have to be certified. In addition to the training of the teams for the intervention, the training function that will cover the whole of the teams that will take part in all stages that may be related to emergency management should be taken into consideration. It should also be emphasized that the education will start with the family, and crisis and disaster management courses in primary and secondary education should be

included in the curriculum. Within the scope of basic military training, emergency response training should be provided to all citizens doing military service, and depending on the success, search and rescue and first aid training should be made a part of military service.

There may be problems with the strategic crisis and disaster management system in detecting crises and disasters and establishing an active action plan. This situation supports the conclusion that the strategic disaster management system works mostly based on internal processes. Therefore, it can be said that the system cannot provide sufficient support in detecting unexpected crises and disasters. Similarly, it is understood that the current system does not provide support to competitors, who are a stage of the crisis management process, in creating crises. In addition, it can be said that managers do not adopt such an attitude. This situation can be evaluated as beneficial in terms of business ethics.

When the results of the five stages regarding the contribution of the strategic management system to the crisis management process are evaluated together, it can be said that the external environment-oriented structure of the system is not of the desired quality and therefore this aspect should be strengthened. However, considering that the system partially supports the stages related to the crisis management process (cannot provide support completely), it may be useful to review its internal side. So the fog Tem will be able to contribute more actively to the crisis management process of the company.

With the strategic disaster management model, one of the most important problems related to disasters can be made public without scientific explanations. Likewise, financing the destruction caused by disaster is one of the most important problems.

Providing this financing is not possible with the aid collected after the disaster, but with a structural financing system to be established before the disaster.

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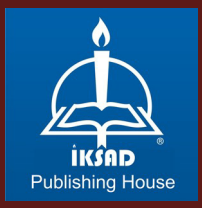


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