

Chapter Two

Key Concepts, Definitions, and Perspectives

Chapter Objectives

Upon completing this chapter, readers should be able to:

1. Define the concepts used for disaster and grasp the similarities and differences among them.
2. Understand and distinguish among the hazards, disaster, and risk traditions.
3. Explain the importance of Comprehensive Emergency Management.
4. Know key theoretical perspectives for understanding disaster behavior.
5. Describe current political and social definitions of disaster
6. Explain the emergence and importance of using a multidisciplinary approach to emergency management.

Summary

The word “disaster” can take on many different meanings. The word can have an everyday meaning as a bad event. Or it can mean the agent that causes the disaster (e.g., tornado, flood), the damage caused by an event, the number of people injured or killed, or even the social disruption created by the event. Different disaster related organizations (e.g., Red Cross, FEMA, insurance companies) even define disasters differently.

Three words associated with the study of these events are disasters, hazard, and risk. Each word reflects a different approach to studying and understanding these events. The disaster tradition fully emerged during the Cold War to understand initially how soldiers could respond during nuclear or chemical attack. Researchers used rapid occurring disasters and a quick response methodology. These approaches laid the foundation for

“disaster research” and a focus on disaster response. The hazards approach focused upon understanding how people interact with the natural environment. Researchers initially studied flooding, but then broadened their interest to other natural hazards. As a result, hazards research developed a strong focus on mitigation and preparedness. Risk studies developed from scientists initially trying to understand how people perceived dangerous technologies such as nuclear energy. Reasons for understanding why people perceived risk to nuclear energy and later other hazards created laid the foundation for understanding risk today.

More generally, we should think about disasters on a continuum. During everyday life, people and organizations confront various crises (e.g., car accidents, heart attacks, house fires). Local organizations such as fire and police routinely handle such events. Next come disasters, which stretch and break the capability of local organizations to respond in an effective and efficient manner. Catastrophes strip both local and regional resources from their capability to respond effectively. As a result, assistance must come through large scale national and even international efforts.

Theory plays an important role in understanding and defining disasters. The emergent norm perspective helps describe how new tasks, organizational structures, norms and roles develop to manage disasters. Systems approaches show us how parts of society are connected together, and that when a disaster impacts one part of a system (e.g., the infrastructure), the result impacts other parts of the system. Finally, the sociopolitical ecology theory demonstrates that those with fewer resources or political power, for example, are less likely to prepare, respond, recover or mitigate disasters.

As noted above, disasters take on different definitions. Some definitions occur for political reasons. In other cases, authorities, victims and others may see rapidly moving disasters (e.g., earthquake, explosion) much differently than slow moving disasters (e.g., environmental events). In addition, one event can lead to a cascading series of other disasters, making it even more difficult to define the event. For example, the recent Japan catastrophe shows such a case. The M 9.0 earthquake led to a large tsunami, which in turn created the nuclear power plant meltdown.

Finally, current research clearly shows that the field of disaster management needs to draw upon a wide range of social sciences, hard sciences and engineering to manage more effectively all kinds of events. However, we cannot forget that disasters are first social events – they affect people.

Teaching Suggestions

Concepts can be difficult to get across to students so a key task in this chapter will be getting them to think abstractly. A good starting point is to get them to think why concepts

are important. Tell them to think of a concept as an abbreviation – for something far more lengthy as a definition. Preparedness, for example, can be defined as a range of activities from hazard identification to public education to developing ready kits. Or, it can be conceptualized as a process involving steps. Get them to focus on understanding that a concept can also vary in definition and that the nuances matter, because those nuances influence how we measure a concept.

Another challenge is to get them to think about how you might measure that concept. Get them to think beyond the notion that only scientists measure concepts. The notion of preparedness again serves you well here as a teaching tool. How would you define preparedness at the individual level? Is it measured by knowledge as in what protective actions fit local hazards? Or, is it measured by the number of items in a ready kit? And what if people do not have those items? Even thinking in terms of creating basic hypotheses, ask, what might influence that level of preparedness, such as income or age? Of what value might that be to an emergency manager – to know how well local residents are prepared and what influences that preparedness? Concepts come alive when we teach the practical as well as the scientific value – and demonstrate how academics and practitioners truly need each other to foster public safety.

Students, especially the "boots on the ground" kind, may not like dealing with abstract terms such as distinguishing between the differences among disasters, hazards and risk. They are far more action-oriented so your goal in this chapter is to help those concepts come alive and applicable. First, help them understand the differences between the terms. Pose a question about what is waiting to happen (hazards), what has recently happened (disasters) and what are the odds or probabilities (risk). What are some events waiting to happen that have not happened recently? One example might be a volcanic eruption (most are dormant and it is a hazard) or an earthquake fault line that has not moved in the area but has potential to cause major disruption, like the New Madrid fault in the central U.S.. Next, discuss a recent natural event and what makes it a disaster. Focus on the social impact and the need for external resources to come in and help an overwhelmed community. Risk as a concept is tougher to get across but ask students to think about what the odds that a particular event could occur. For example, a catastrophic hurricane, massive disaster followed by a nuclear accident or a heavy thunderstorm? That is what we mean by risk, the likelihood of something occurring and obviously the storm carries a greater likelihood - albeit a lower consequence. Working through these ideas also lays a foundation for Chapters 6 and 7 in that disasters are low probability so people don't think about them until after they have occurred. But they can be high consequence events as demonstrated in Japan, Haiti, New Zealand and Pakistan after their respective earthquakes in 2010 and 2011.

Next, take on the concept of comprehensive emergency management or CEM. To work through the all hazards approach, ask students what are some types of activities that run across all hazards like educating the public, communicating across agencies, warning those at risk, addressing unmet needs, coordinating agencies, planning, sheltering and housing. Focus on the commonalities that occur across all types of disasters so that students begin to see that, despite the difference between a blizzard and a heat wave, some people are more likely to die than others so attention must be paid to those at highest risk, warnings must be given out as far in advance, shelters may need to be set up for stranded travelers in a blizzard or people without air conditioning in the heat wave, and so on. This is a good time to emphasize the value of the agent generic approach for planning to set up the content in Chapter 7.

In this chapter we also start to talk about the four phases, so focus on definitions here and give examples. The FEMA IS-1 toolkit that lists the four phases and related activities (see resources) is a great resource to hand out to give students. Focus on the four phases and the kinds of activities. Pull up the graphic in the PowerPoint and walk them through it. Then, take a common hazard for your geographic area and go through common activities for the four phases and what students would expect to experience. You could also invite a local emergency manager to give a talk on what they do for those four phases (we suggest that this person understands the importance of education as a whole). This is also a good time to talk about how phases overlap and influence each other. For example, response activities always bleed into recovery and how recovery is managed influences introduction of mitigation measures.

To help them with the differences among emergencies, disasters and catastrophes, draw a continuum on the board. Ask for examples (car crash, tornado, events like the Haiti earthquake) and have students discuss where they fit - and what kinds of resources and assets would be needed to respond to each. What is the worst case they can imagine (e.g., Japan) and how does that fit or not fit with each term? It is really important to get them to understand the disaster definition and why we have so many different definitions, because different people use them for different reasons. Government needs a formal definition for funding and other assistance. Voluntary organizations define them to activate their volunteers and donors. Insurance companies may change their definitions of disaster for business survival reasons, for example, was Hurricane Katrina in the U.S. a flood or a hurricane? Was the flooding from storm surge or the levee failures or both? Which does insurance cover? Lawsuits continued on the subject for years after the storm. Individuals define events as disaster based on their own experiences (such as an upcoming test in this class). Each definition sets boundaries for understanding and action, so discuss how different agencies and actors have such limits and how those understandings influence what we think will happen and will do.

Next, move into theory. Concepts form the building blocks for theory and you can break down a theory for students by focusing on the key conceptual elements. Systems theory breaks down well and students should be able to identify examples from each system of concern – physical, built and socio-cultural systems. Choose a recent disaster and have them analyze it from systems theory to identify each system. Socio-political ecology theory might be harder. A first step is to get them to think about groups of people who compete over limited resources. You might, seriously, use the football draft for this. Limited numbers of high-quality quarterbacks, wide receivers and left tackles exist. Teams compete to get them – but the football draft introduces limits in order to encourage parity across the leagues. This is not the case in the broader society. Some people simply do not have the same access. The case of Japan's disaster in 2011 serves as a good example. Early data suggest that elderly, people with disabilities and pets perished at higher rates than younger and able-bodied individuals. Recovery happens in a similar pattern, with low income, elderly, and people with disabilities rebuilding and recovering at slower rates than the general public. Renters face a similar quandary, especially those living in affordable or low-income housing. Perhaps they can also relate from being students – limited resources mean limited options for weekend fun. And, how many of them can really afford the safest housing? How much money do they have available if they lose it all in a disaster?

Emergent norm theory can be taught by explaining that as things change around you (disaster, loss of resources, disrupted transportation arteries) what becomes normal needs to change. The starting assumption is that most of the time our lives have normal routines, but disasters create disruptions. Emergent norm theory focuses on how we respond to those disruptions through creative solutions. First responders understand this well - when they conduct rescues they have initial strategies but often must improvise, which is a form of emergent or new behavior. The classic example cited in the text is the rebuilding of the Emergency Operations Center (EOC) that was in the World Trade Center complex on 9/11. Discuss how it was rebuilt and the creativity (emergence) necessary to make that happen. Another example closer to home is that when disasters occur, it is okay to go to neighbor's garage and get power tools (changing property definitions) without having to ask. This is not looting. Finally, a classic example comes from the brave passengers aboard the United flight that crashed in Pennsylvania on September 11th. Determined to re-take the plane, the last words heard from one were, "let's roll."

Finally, discuss the multidisciplinary approach taken by emergency management. Natural disasters have natural origins so we need to know physical science. Disasters also impact human society so we need to draw upon a wide range of the social sciences (e.g., sociology, geography, psychology, political science, public administration) to understand human impacts and responses. Engineers work to create blast-resistant buildings, stronger

bridges and resilient utilities. A creative ending to this chapter could tie the value of multidisciplinary studies to systems theory and socio-political ecology theory. Systems theory involves some majors/professions looking at the built environment (engineers), the physical environment (meteorologists, geologists, seismologists) and human systems (social systems). We need all these majors - which ends the chapter with the possibility of linking emergency management to their majors and what they might contribute as employees or volunteers. In short, students will need to be a generalist in the practice of emergency management and know something about all of these different fields.

Resources

- The FEMA IS-1 Introduction to Emergency Manager independent study course is free online at <http://training.fema.gov/EMIWeb/IS/is1.asp>. The toolkit contains a one page handout on the four phases.
- A key writing that is short and easily accessible was written by E.L. Quarantelli after Hurricane Katrina, discussing whether the event was a disaster or a catastrophe. It can be read by students and discussed in class. It is at <http://understandingkatrina.ssrc.org/Quarantelli/>.
- A PowerPoint is available for this chapter with some of the graphics from the chapter included.

Discussion Questions

1. *Why is it the word “disasters’ has many meanings, and how can that lead to confusion about dealing with disasters.*

The same word can have different meanings to different people – or different words can have the same meaning. For example, mitigation to most means taking activities in order to lessen the impacts of disasters. Yet, in the world of hazardous materials, one “mitigates” or prevents the event from getting worse during the response. The term recovery to a first responder means retrieving bodies of the deceased. For an emergency manager, it means the multi-year process that results in a rebuilt community. The same is true with the term disaster which can vary from government to individuals. Most of the time we agree though, that disaster leads to considerable disruption - schools and businesses close, traffic is re-routed, health care systems experience overload and more. Discuss how much disruption occurs across emergencies, disasters and catastrophes.

2. *Understand and distinguish the traditions of hazards, disaster, and risk.*

Have students identify different events and put them on the board where you have drawn a continuum for disasters. Use the teaching suggestions above for the three terms. Then, have them assess the frequency of these events for the last 25 years and the odds of each occurring somewhere in the state in the next year, five year and ten year time periods. What are the most and least frequently occurring events and what might that suggest about the future?

3. *Why after being used for over 30 years, Comprehensive Emergency Management is still important today for both emergency managers and disaster researchers?*

It is a proven guide, well accepted in EM community, and is the organizational backbone of FEMA. The phases provide a framework to organize work activities and to even hire generalists and specialists in an emergency management agency. Ask students if any additional phases or sub-phases should be identified and if so how would they redraw the life cycle of EM?

4. *How might the emergent norm perspective, systems theory, and the sociopolitical ecology theory all give us different views of the same event? Or, which theory might help us describe and explain certain types of situations that occur during a disaster?*

Theory gives us perspective and the ability to understand nuances. Each can give us a focus on where to intervene or conduct more research. Individual theories also provide different ways to understand human behavior and disaster outcomes, including how disasters impact different populations in society. Tie levels of government to systems theory and how different levels of government have to work together to handle disasters, such as the built, physical and human systems. Look within each system to examine multiple parts – such as power and how that creates other problems. Have your students think through the implications of a cascading failure in an electrical utility. Use sociopolitical ecology theory to look at differential impacts that might occur such as greater impacts on people with medical conditions and disabilities living alone and in need of power. For emergent norms, pull up some videos from the Internet on recent disasters and ask them to identify any new behaviors they see such as people rescuing each other, setting up shelters, or cleaning debris. Have them focus on activities that people normally do not do.

5. *Do you ever think the field will have one view or perspective of disaster, or will it continue to have multiple definitions? What are the pros and cons of each side?*

The answer is no and here's why. Different users of the term exist including varying levels of government (local, state, national), private/public sectors and individuals. It is good to have multiple definitions to fit needs of different people, groups, organizations that operate in a disaster. Yet definitional differences also create challenges as there is no standard view of disaster. This can make it harder to

communicate, such as defining boundaries for response and recovery and for when government should intervene. There is no single paradigm of disaster.

6. *Why is it that emergency management integrates a number of the social sciences, along with other sciences and engineering? What are some examples that you can think of where different (social) sciences work together to make our world safer?*

Criminal justice contributes to homeland security issues. Psychologists deal with the stress and trauma associated with disaster including mass shootings that are much in the news. Sociologists focus on groups, households, organizations, communities (which link well to the varying levels of preparedness upcoming in Chapter 6). Psychologists focus on the on individual level. Geographers center on physical locations vis-a-vis the socio-cultural activities that take place within them. Economists look at the costs of disaster which are growing. It is important here to value all the disciplines and encourage students to take advantage of the wide range of courses available to them at their university. In essence, different social sciences look at different components of same thing. Encourage them also to look inside a discipline for its contributions. In short, we need all the disciplines to really understand disaster.

Test Questions

Essay Questions

1. Explain why disaster planners need to focus on the social aspects of disasters as much if not more than the physical impact of disasters.
2. Distinguish among the disaster, hazard and risk traditions. Briefly explain the origins of each perspective, and what aspect of disaster behavior each focuses upon.
3. Discuss the two key ideas behind Comprehensive Emergency Management and why these ideas have remained a key part of emergency management for over three decades.
4. Why do emergency managers today have to draw upon a wide range of academic disciplines to deal with disasters? Take one type of disaster agent or event to explain your answer.

Multiple Choice/True and False

1. The nature of disasters has stayed the same for the last 100 years. *False*.
2. The word disaster has many different meanings. *True*.

3. For the purpose of this text book, disasters are seen as social events rather than physical events. *True.*

4. Which perspective focuses upon lessening the impacts of disasters before they happen?

- a. Disaster
- *b. Hazards
- c. Risk
- d. Crises

5. A catastrophe is the same as a disaster except a lot larger. *False.*

6. Although crises are bad events, they are part of everyday life. *True.*

7. The key component behind Comprehensive Emergency Management includes:

- a. the agent specific approach to disaster planning
- b. the all hazards approach to disaster planning
- c. the four phases of disaster
- d. a and b
- *e. b and c

8. Disaster recovery is the most important of all disaster phases. *False.*

9. Generally, disaster phases overlap and affect each other. *True.*

10. The recovery phase of disaster cannot begin until the response phase is over. *False.*

11. Although developed in 1979, the idea of Comprehensive Emergency Management is still central to effective emergency management today. *True.*

11. Which action led to the formation of FEMA?

- a. The National Governor's Report
- *b. President Carter ordering its creation
- c. President Nixon responding to détente
- d. President Clinton reinventing government

12. The use of Comprehensive Emergency Management shows that the social impact of disasters has stayed the same for decades. *False.*

13. The hazards tradition grew out of being able to respond to a Russian nuclear attack. *False.*

14. Which factor best explains the increasing nature of disasters worldwide?

- a. Global warming
- *b. Increasing and higher density populations
- c. Nepotism

d. Actually, the number, types, and losses from disasters are decreasing

15. The “quick response” approach to study such events as tornadoes is part of the “disaster” tradition. *True.*

16. Understanding how people see danger with such things as nuclear power plants or hurricanes is part of the risk perception tradition. *True.*

17. Which theory best captures the dynamic and changing aspects of disaster?

*a. Emergent Norm

b. Systems

c. Sociopolitical Ecology

d. All of the above

e. None of the above

18. Which theory shows when a disaster hits one part of society, it actually impacts many parts of society?

a. Emergent Norm

*b. Systems

c. Sociopolitical Ecology

d. All of the above

e. None of the above

19. Which theory reflects that certain groups are more vulnerable to disasters?

a. Emergent Norm

b. Systems

*c. Sociopolitical Ecology Theory

d. All of the above

e. None of the above

20. Different organizations may define the same disaster event quite differently. *True.*

21. Politicians need to treat slow moving disasters differently than fast moving disasters. *True*

22. Which type of event should emergency managers plan for?

a. Natural disasters

b. Protests and riots

c. Terrorist attacks

*d. All of the above

e. None of the above

23. Political Science provides the best overall academic perspective to study disasters. *False.*

24. Which academic field provides a good perspective for understanding such events as hazards, disasters and risk?

- a. Sociology
- b. Geography
- c. Psychology
- *d. All of the above
- e. None of the above