CHAPTER 10

Local Emergency Management Organizations

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Two days after Hurricane Andrew struck the southeastern coast of Florida, the emergency manager of Dade County asked in desperation, "Where the hell is the cavalry on this one?" Pleas for help are common in most widespread disasters as municipal and county governments may not have sufficient material and human resources to deal with the devastation and disruption they leave behind. Mass emergencies and major calamities are therefore characterized by the need for outside assistance, and state and federal assets are sent to the affected area to assess damages, explain national relief programs, and provide financial assistance, among other things. For instance, when the World Trade Center towers collapsed after being struck by hijacked aircraft, hundreds of government agencies and departments converged in New York. Among these individuals and organizations from the public sector were search and rescue teams, law enforcement personnel, environmental enforcement officials, intelligence agents, congressional representatives, the National Guard, interstate mutual aid partners, and the Federal Emergency Management Agency (FEMA). Emergent groups, religious organizations, businesses, and nonprofit agencies also arrived at the scene from distant locations to provide various kinds of disaster assistance. Nonetheless, the bulk of responsibility in disasters typically falls on local jurisdictions. The burden of dealing with a disaster is never felt more intensely than at the community level. For this reason, it is imperative to understand local emergency management organizations.

This chapter reviews what is known about official and unofficial participants in emergency management at the community in the United States and around the world. It first provides the context of emergency management and identifies the organizational arrangements in which emergency managers operate. A history of emergency management is provided and the functions of this profession are discussed. The chapter then illustrates that the emergency manager is heavily dependent on other departments, preparedness councils, mutual aid partners, regional consortiums, and emergent groups. Attention subsequently turns to the nature of emergency management organizations in other nations, although this portion of the chapter is somewhat limited owing to a continued lack of comparative research. An assessment of current challenges and future opportunities facing local emergency managers and related stakeholders in the public sector then takes place. Research needs pertaining to emergency management organizations are also identified. One of the major conclusions to be drawn from

this exposition is that the emergency manager is only one of many actors interested and involved in disaster issues at the local level, and that increased effort needs to be given to networking and improved intergovernmental relations. Another finding is that local emergency managers may want to become more proactive by pursuing integrative policies based on the popular concepts that scholars and practitioners consider to be imperative for the reduction of future disasters.

EMERGENCY MANAGEMENT AND ITS CONTEXT IN THE UNITED STATES

Emergency management is "the discipline and profession of applying science, technology, planning and management to deal with extreme events that can injure or kill large numbers of people, do extensive damage to property, and disrupt community life" (Hoetmer, 1991, p. xvii). In conjunction with this definition, emergency managers may therefore be regarded as public servants who employ knowledge, techniques, strategies, tools, organizational networks, and other community and external resources to reduce the occurrence of disasters and successfully deal with their impacts in order to protect people, property, and the environment. Because the mayor is the designated emergency manager under most city ordinances, emergency managers are often referred to as emergency management coordinators or disaster planners. For the purpose of this chapter, however, these coordinators and planners are referred to as emergency managers.

These preliminary comments bring up several interesting points about the nature of the field and they also invite further commentary about this area of study and emerging profession. First, it is necessary to recognize that there are several problems with the term "emergency management" (McEntire, 2004a). In spite of its name, emergency management is generally more concerned about disasters than emergencies because first responders are fully capable of addressing most needs in routine incidents. When a disaster occurs, however, police, fire, and emergency medical service (EMS) personnel cannot always cope with the resulting widespread impacts unless an emergency manager and numerous others are available to acquire resources for first responders and take care of broader response and recovery needs in the community (e.g., warning, sheltering, debris management, donations management, rebuilding, etc.). The concept of emergency management is similarly questionable in that emergency managers may have less control over the unfolding of extreme events than they would like to admit. Because of the unique, complex, and dynamic features of disasters, the activities of emergency managers may be significantly influenced by these disruptive occurrences rather than the other way around. Emergency management might likewise be a reactive name for a profession that should give more attention to a reduction of both the quantity and quality of disasters. From an epistemological standpoint, the term emergency management seems to suggest that we can only react after a disaster rather than take steps to reduce our vulnerability before the event occurs. These weaknesses aside, awareness of emergency management appears to be on the rise. Media coverage of major disasters in recent years has certainly spread recognition of this important field.

These observations should not be taken to imply that emergency management is as widely recognized a discipline as English or History, however. From an academic standpoint, emergency management is still in its youth or adolescent stage, and there is even debate as to whether the field constitutes "a discipline or a multi-disciplinary endeavor" (Phillips, 2003). Nonetheless, the fact that there are now more bachelor's, master's, and doctorate programs

in this area should begin to discredit questions of legitimacy (see FEMA's Higher Education Program list at http://training.fema.gov/EMIWeb/edu/collegelist/_ for examples). A growing number of students are pursuing emergency management as a career of first choice and many educators report expanding enrollments at FEMA's annual Higher Education Conference. In addition, the content of these academic programs in emergency management is changing slowly but surely. Students in the field now have a greater exposure to the physical and social sciences as well as other disciplines related to disaster (Falkiner, 2005; McEntire, 2004a; Neal, 2000). Today's emergency management students also spend more time than their predecessors did considering how disasters can be prevented and how post-disaster operations can be made more effective in the future. Besides focusing on ways to protect life and limit the disruption disasters cause, these students are increasingly concerned about politics, law, social and economic relations, technological impacts, environmental protection, and multiorganizational coordination. Knowledge, skills, and abilities regarding the administration of emergency management programs in the public sector are now more commonplace as well (although much improvement remains to be seen).

The evolving educational opportunities are also leading to more respect for the position of local emergency manager. According to many job postings, a degree in emergency management is now preferred and is often required. More and more jurisdictions are unwilling to hire individuals without the necessary background and credentials. To be certain, emergency managers are undoubtedly not yet comparable to the medical, legal, or engineering professions, and several strategies must be pursued if emergency management is to achieve similar status in the future (Oyola-Yemaiel & Wilson, 2005). Regardless, many cities currently employ at least one emergency manager and others will hire one or more as time passes. The U.S. Department of Labor (2005) reports that the demand for emergency management positions is projected to rise by more than 28% by 2012.

The existence of an emergency manager is not uniform across all jurisdictions, however (Kreps, 1991b). Small, rural towns may not have sufficient resources to hire a full-time disaster specialist. If this is the case, the job remains vacant or someone may voluntarily fill this function. At other times, the emergency manager may work on a part-time basis, or the fire chief, police chief, public works director, city manager, or mayor fills this role. Certain municipalities may not get involved in emergency management as the county takes a more active stance regarding disasters. Most large cities do recognize the need for and value of emergency management, however, but the size of such offices varies dramatically. Omaha, Nebraska has two emergency managers while the City of Fort Worth, Texas has five. Major metropolitan areas have even more sizable emergency management staff. There are 13 on the payroll in Los Angeles, California, and New York City has 125 employees. This does not include, of course, individuals in other departments who perform related emergency management functions.

The emergency management position may also be included in one of many common organizational arrangements (Kreps, 1991). Most fall under another department such as fire, police, or public works. Some may be independent, lacking direct ties to other peer entities. Others may report to a city manager or even the mayor directly, and movement toward this trend is gaining momentum. Regardless of the location, there are advantages and disadvantages to each of these positions in the city's organization. Those integrated in separate departments may theoretically have access to large budgets and their host departments may be closely associated with emergency managers (e.g., fire departments are involved in emergencies on a daily basis). Nonetheless, the needs of emergency managers could be downplayed because of the general goals of the organization, and programmatic objectives of emergency management could be dismissed as a result of the final say of other department heads. Emergency managers who

are isolated from other organizations may be free to build a program with minimal outside control, but they may consequently lack financial resources or the buy-in of other departments. Being placed under city leadership would most likely provide adequate political and monetary support, although this may engender hostile attitudes on the part of different departments. Policies pertaining to emergency management could also vary dramatically among elected administrations, leading to dramatic fluctuations in the direction of such programs. Despite the divergent organizational situations, emergency managers must use political acumen to promote their programs and overcome interpersonal or interorganizational conflict. In other words, the art of the profession is just as important as the science of emergency management.

Finally, it should be noted that the name of the emergency management department also varies dramatically in different cities. In Portland, Oregon, it is known as the Office of Emergency Management. Indianapolis, Indiana, labels it as the Emergency Management Agency in the Department of Public Safety. Some organizations reflect the past traditions of Civil Defense, as in Shakopee, Minnesota, while others now reflect the current terrorist threat, as is the case with the Homeland Security Department in McKinney, Texas. This complexity results not only from the federalist and decentralized system of government in the United States (Drabek, 1985), but also from the dynamic nature of emergency management in general.

THE HISTORY AND FUNCTIONS OF EMERGENCY MANAGEMENT

Emergency management—whether at the federal, state, or local level— has been influenced significantly by world events and the occurrence of disasters (Quarantelli, 1987a). The impetus behind emergency management was initially World War II and subsequent Cold War hostilities (Waugh, 2000a, p. 13). Many European countries were bombed during this drawn-out conflict, leading to civil defense initiatives for advanced warning and related evacuation and sheltering. When allied forces pushed back Hitler's army, disagreements about the future of Europe began to appear between the United States and the Soviet Union. Communist leaders feared the expansion of U.S. capitalism and they viewed the use of the atomic bomb in Japan as a potential threat to their security. A nuclear arms race ensued between these two superpowers, producing a potential of mutually assured destruction (MAD). Governments in both countries gave impressive attention to war planning and civil defense wardens helped prepare cities by developing siren systems, stockpiling nuclear bunkers with supplies, and planning how to move citizens to untargeted areas. Little attention (comparatively speaking) was given to other types of disasters by local governments during the 1950s and early 1960s.

After witnessing the devastation caused by natural events including Hurricane Betsy, Hurricane Camille, and the Alaskan earthquake, federal officials began to see civil defense as a dual-use activity (i.e., for nuclear strikes and natural disasters) (Drabek, 1991a, p. 18). This consequently altered the goals and scope of civil defense, and emergency management offices were created in cities around the nation. When technological disasters began to occur with increased frequency as a result of ongoing industrialization, emergency management began to focus on hazardous materials releases. Effort was given to track dangerous chemicals in manufacturing plants and build local capabilities to deal with such disasters (Lindell, 1994). This shift to man-made disasters was dampened when Hurricane Andrew, the Midwest flooding, and the Northridge Earthquake occurred in the early 1990s. Under the direction of FEMA director James Lee Witt, local emergency managers began to stress hazard and vulnerability assessments in addition to mitigation through land-use planning, improved engineering, and

public/private partnerships. The Witt revolution helped the profession become more proactive by attempting to reduce risk and expedite the recovery process (Haddow & Bullock, 2003, p. 10). Even though emergency managers gave attention to the possibility of computer-related disasters (e.g., Y2K), priority was still directed at natural disasters during the first few months of the new millennium.

With the 9/11 terrorist attacks, emergency management has again changed course by taking on the homeland security perspective. Local officials, recognizing the challenges of the response to the World Trade Center attacks and the use of anthrax in Washington, D.C. and in Florida, began to stress law enforcement, interoperable communications, and public health concerns (Fischer, 1999; McEntire, Robinson, & Weber, 2003; Perry, 2003; Waugh, 2001). Emergency management has in some ways come full circle (Alexander, 2002), although homeland security is certainly more complex than civil defense. Attention is now given to intelligence gathering, border control, and preparation for a possible attack involving weapons of mass destruction (nuclear, biological, and chemical agents) (Bullock et al., 2005). Federal grants enable cities to prepare for possible terrorist attacks, but tension has resulted because of the apparent downplaying of natural hazards (Waugh, 2004c). The four hurricanes and one tropical storm that struck Florida in fall, 2004, the devastating Tsunami in the Indian Ocean, and the dislocation of thousands of people after Hurricane Katrina were vivid reminders that natural disasters cannot be overlooked. It is unclear to what extent these events have influenced or will alter federal policies and local emergency management activities, however.

Although policies and funding stress counterterrorism activities, local emergency managers still undertake a variety of steps within what is known as the comprehensive emergency management framework (Godschalk, 1991). Mitigation includes efforts to prevent disasters or minimize impact through hazard and vulnerability assessments, improved construction practices, and better land-use decisions. Preparedness activities attempt to enhance post-disaster operations through planning, training, exercises, and community education. Response operations entail warning, evacuation, search and rescue, emergency medical care, fire suppression, and other methods to care for disaster victims and minimize disruptions. Recovery implies efforts to return the community to normal or improved conditions after disaster strikes, and often involves damage assessment, debris removal, disaster assistance, and rebuilding measures. Since disasters are fairly rare occurrences, most of the emergency manager's time is spent attending meetings, promoting more stringent disaster policies, educating the public, creating plans, updating resource lists, and conducting exercises (Daines, 1991; Pickett & Block, 1991; Scanlon, 1991). In recent years, emergency managers have become heavily involved in managing numerous grants including the Nunn-Lugar-Domenici Domestic Preparedness Equipment Program, the Urban Area Security Initiative, the Citizen Corps and Citizen Emergency Response Team (CERT) Programs, and the Homeland Security Grant Program. This has added a significant work load to what is typically an already overburdened and limited staff. It is apparent that emergency managers cannot be considered the only participants in emergency management.

INVOLVEMENT WITH OFFICIAL PARTNERS

Emergency managers do not (or should not) act in isolation from others. To the contrary, the success of emergency managers is largely determined by the extent to which they involve other departments, planning committees, mutual aid parties, and regional networks in pre- and post-disaster activities. In other words, because emergency managers cannot possibly perform

every function in emergency management alone, they must attempt to ensure that someone is completing each vital activity pertaining to the reduction and management of disasters (Hoetmer, 1991, p. xx).

For their part, local government departments often fail to recognize their important role in a disaster. Since there is a designated emergency manager in many cities, and since the jurisdictional domains for disasters are spread across so many organizations, most individuals and institutions do not perceive themselves as being responsible for emergency management (Auf der Heide, 1989, p. 8). However, natural and technological incidents may adversely impact economic development as well as schools, public utilities, and transportation systems. Terrorist events could have similar impact on those concerned with infrastructure, the environment, and public health. Flood plain managers and the planning department are heavily involved in land management and development while engineering is relied on to enforce building codes. The engineering department will also be needed for damage assessment, and public works and possibly parks and recreation will be used to remove debris. The police department is utilized for traffic control, the fire department has responsibility for fire suppression as well as search and rescue operations, and the public information officer must deal with media requests. To facilitate recovery, the city will work with the chamber of commerce to point out business needs whereas the budget or finance department will process federal funding for reconstruction projects. Permits will likewise be needed for rebuilding (thus requiring the engineering department again), and city managers and political leaders will coordinate efforts and oversee progress of the entire emergency management program. Every local government organization has some relation to disasters and emergency management operations. Emergency managers must therefore educate city leaders about disasters, and involve them as much as is possible in prevention and preparedness processes.

Besides the public officials and departments mentioned above, emergency managers create several types of planning advisory boards and involve other organizations in their activities (Gordon, 2002). The most common example is a local emergency planning committee (LEPC). LEPCs were instituted in the late 1980s in response to the Emergency Planning and Community Right to Know Act (SARA Title III) to prepare communities for industrial accidents such as explosions or hazardous materials releases. There is no standard list of constituting agencies, but typical members include the emergency manager(s) and representatives from fire departments, hospitals, environmental protection agencies, and petrochemical facilities. Lindell has studied these advisory councils extensively and concludes that they have a positive impact on disaster preparedness as they reject the isolated planning undertaken by former Civil Defense Directors (1994, p. 103). The facilitation of preparedness is especially evident when the committee is well funded, organized, committed, and capable of assessing risks, acquiring resources, developing HazMat teams, and identifying evacuation routes. LEPCs are not the only type of planning council, however. Cities may utilize several committees to monitor development, enforce building codes, establish warning systems, enhance bioterrorism preparedness, plan drills, carry out exercises, foresee land acquisition needs during recovery, promote public health and emergency medical care, manage grants, and protect critical infrastructure.

Emergency managers also work with neighboring jurisdictions to ready themselves for disasters. One way of increasing preparedness is through a mutual aid agreement, which is a "pact between local governments whereby each pledges to assist the other in time of need" (Poulin, 2005, p. 1). Mutual aid agreements prove useful because internal resources are often insufficient during response and recovery operations. Disasters typically outstrip emergency personnel because a fire has spiraled out of control, or because there are too many victims who need medical treatment, too many roads to be cleared of debris, and too many

volunteers to be managed. Material resources, in terms of generators, heavy equipment, or WMD diagnostic tools, may be inadequate as well. Such shortages are not automatic, however. Research illustrates that too many people or supplies may sent to the scene of a disaster, thereby complicating response and recovery operations (Lowe & Fothergill, 2003; Neal, 1994). Emergency managers should consequently establish mutual aid agreements, considering there is no way to know or predict exactly what each disaster may bring. The mutual aid agreement should address the conditions under which it will be implemented, exclusion clauses, financial responsibility, repayment issues, and death or victim benefits (McEntire & Myers, 2004). Most importantly, the mutual aid agreement must be approved by the legal counsel for each local jurisdiction to avoid liability.

Emergency managers are also actively involved in regional planning consortiums. Cities work with other jurisdictions to save resources and increase the effectiveness of emergency management. The Department of Homeland Security, the Office of Domestic Preparedness, FEMA and many states now require a regional approach if certain grants are to be distributed. The logic is that funds will be conserved under this organizational arrangement. For instance, instead of funding a hazardous materials team and a mobile command vehicle for each community, a regional strategy dictates that each of these items are given to different cities with an expectation that they are to be shared with all jurisdictions in that particular area. A vivid example of this approach is seen in the efforts of the Emergency Preparedness Department of North Central Texas Council of Governments (NCTCOG) (see http://www.nctcog.org/ep/index.asp). The NCTCOG includes 16 counties and 230 member governments, and the staff and city personnel involved disaster planning work together to promote advocacy, information sharing, and collaboration. The Emergency Preparedness Department is especially active with the major cities in the Dallas-Fort Worth Metroplex area (Collin, Denton, Dallas, and Tarrant counties) to promote Citizen Corps, homeland security initiatives, and the regional coordination plan. Such efforts require an extreme amount of cooperation, which may be complicated because of different community priorities and interjurisdictional politics. However, regional approaches are becoming more common and are gaining in importance as all types of government stakeholders see a further need to collaborate to address complex disaster problems.

PARTICIPATION OF EMERGENT GROUPS

Although local governments are undoubtedly major players in emergency management, it is necessary to recognize that they are not the only actors involved in disasters. Because earthquakes, hurricanes, industrial explosions, terrorist attacks, and other types of disasters create large numbers of victims, disable transportation systems, and place excessive demands on first responders, many important and urgent post-disaster needs cannot be addressed quickly or adequately. For these reasons, people do not simply wait for fire fighters, police officers, or the American Red Cross to show up at the incident scene. Bystanders and victims instead take initiative to care for themselves and for others.

Research has consistently shown that citizens engage in emergency response after a disaster (Drabek & McEntire, 2002). For instance, a great deal of research emanated in the 1950s from the National Opinion Research Center (NORC) detailing the convergence of people and organizations to provide humanitarian assistance in disasters (Fritz & Marx, 1954; Fritz & Mathewson, 1957). Scholars have since added to these findings, illustrating that the human desire to help those in need is nearly an irrefutable fact in virtually every type of disaster, perhaps even regardless of location (Aguirre, Wenger, Glass, Diaz-Murillo, & Vigo, 1995; Bardo, 1978;

Comfort, 1996; Drabek, 1986; Dynes, 1970; Wenger & James, 1990; Wilson & Oyola-Yemaiel, 1998). Such was the case in New York after the 9/11 terrorist attacks; volunteers came from all across the United States to assist those affected by this world-changing event (Lowe & Fothergill, 2003). These altruistic endeavors are known as "emergent behavior" and the people involved in disaster responses are labeled as "emergent groups."

Emergent behavior may be loosely defined as a form of collective activity (being distinct from prior behavior resulting from a consensus on new norms) which creates a unique social order that has not yet become institutionalized (see Killian, 1994, p. 278). In the context of disaster, this means that individuals see needs that are not being met and therefore attempt to address them in an informal manner. People join together to complete tasks that often include, but are not limited to, search and rescue, emergency medical care, donations management, and debris removal. Those who participate in these atypical disaster functions are considered emergent groups—citizens and others who come together in an informal manner to address the new tasks that are made evident by the disaster (Stallings & Quarantelli, 1985, p. 94).

Emergent groups are therefore different than other types of organizations (Dynes, 1970). For instance, emergent groups (e.g., unaffiliated volunteers) undertake activities that were previously foreign to them and develop a social structure that lacks formalization, tradition, and endurance (Stallings & Quarantelli, 1985, p. 94). In contrast, an established organization (e.g., a fire department) performs routine functions in a disaster and maintains its traditional organizational relationship with the chief and the subordinates. An extending organization (e.g., the American Red Cross) completes routine functions in a disaster but creates new relationships as workers from around the country converge to the scene of a disaster. Finally, an expanding organization (e.g., a church that gets involved in disasters) tackles new tasks but maintains traditional relationships among the pastor and the members.

While emergent behavior and groups are most evident during times of emergency, this should not be taken to imply that such phenomena are nonexistent in other phases of emergency management. One study of 50 emergent groups reveals that emergent groups have become involved in a variety of issues and activities:

- educating a community about earthquakes,
- opposing the location of a hazardous chemical waste site,
- preventing further development in a flood plain,
- informing citizens about the dangers of a nuclear power plant,
- protecting a creek from being polluted,
- developing an emergency operations plan,
- proposing a flash flood warning system,
- training neighbors on disaster response,
- obtaining funding for homes damaged by landslides,
- replanting trees destroyed by a tornado, and
- protesting decisions regarding post-disaster housing (Stallings & Quarantelli, 1985, p. 95).

As can be seen, emergent groups may provide numerous benefits for a wide-range of emergency management activities. The emergency manager should be aware that emergent organizations do at times present challenges for those involved in this profession, however. In one disaster, one telephone call to a religious organization generated more than 6000 volunteers to help sand bag in a little more than an hour (Armstrong & Rosen, 1986, p. 23). Situations like this typically generate logistical difficulties in that volunteers need to be checked in, given equipment and directions, and monitored to ensure they are performing the job correctly.

In other cases, well-intentioned citizens may unintentionally hurt the trapped victims they are trying to rescue, and the donations sent to a disaster area may require sorting, storage, distribution, or disposal. The major implication for local emergency managers is that emergent groups are inevitable (Stallings & Quarantelli, 1985, p. 98) and they are major participants in emergency management.

EMERGENCY MANAGEMENT ORGANIZATIONS IN OTHER NATIONS

There have been repeated calls for studies about emergency management and emergence in other nations (Drabek, 1986; Dynes, 1988; Peacock, 1997). However, much of the research is still conducted in developed countries such as the United States. A number of studies have examined international responses to disasters (Cuny, 1983; Green, 1977; Kent, 1987; McEntire, 1997). Scholars have also investigated the causes and consequences of earthquakes, famines, hurricanes, technological disasters, complex emergencies (Cuny & Hill, 1999; McEntire, 2003; Minear & Weiss, 1995; Oliver-Smith, 1994; Perrow, 1999) and a host of other disasters (Farazmand, 2001), subject areas (Mitchell, 1999), and processes (Porfiriev, 1999a). There are far fewer studies about official and unofficial disaster organizations around the world, but there are some notable exceptions including the informative chapter about the Philippines, Japan, and New Zealand in this text by Neil Britton.

One of the first comparative studies of official emergency management organizations was completed by Bejamin McLuckie, a Ph.D. student at the renowned Disaster Research Center. McLuckie explored the management of disasters in Italy, Japan, and the United States (1970). He discovered that each nation decentralized authority in time of disasters, although the former two countries were more centralized than the latter. His research reveals that organizational arrangement can have a dramatic impact on the effectiveness of disaster institutions. Other in-depth studies have been conducted about Russia (Porfiriev, 1999b), Australia (Britton & Clark, 2000), and the United Kingdom (O'Brien & Read, 2005). These illustrate that hazards, historical circumstances, culture, political objectives, and current events influence the organizational arrangements for emergency management. They also reveal that many actors are involved in disaster planning and management, although this varies by country. Less is known about disaster organizations in developing nations, where governments tend to be highly centralized and the military is more heavily involved in emergency management functions. While comparative research has undoubtedly increased over the years, Quarantelli's admonition (1989c, p. 6) for more studies remains justified.

In comparison to the above studies regarding official organizations in other countries, there has probably been more research on emergent behavior in foreign disasters. Of course, anyone with an interest in disaster behavior is aware of Prince's description of human collective action after the Halifax, Nova Scotia shipping explosion and the impact that this has had on scholarship in the area (Scanlon, 1988). Similar studies on post-disaster behavior have been conducted around the world. Among the first truly cross-national projects was Clifford's research (1956) on the response to the Rio Grande River that flooded Eagle Pass, Texas and Piedras Negras, Mexico. He wanted to know how cultural values would affect the response, and found that family and informal organizations were more important in Mexico than in the United States where victims relied more heavily on government institutions. This line of research has been continued by Aguirre and his colleagues (1995), illustrating that routine social patterns are often witnessed after a disaster. Dynes' work (2003) also reiterates social continuities after disasters.

One of the most universal findings in many different disaster contexts around the world is that people generally come together to meet disaster demands. However, at least one study has revealed that political unrest may emerge after major disasters (Olson & Drury, 1997). There are also some differences in terms of the degree of convergence, therapeutic activity, and nature and extent of emergent groups in Mexico, the United States, Russia, and Japan (Comfort, 1996; Drabek, 1987a; Porfiriev, 1996; Quarantelli, 1989c; Scawthorn & Wenger, 1990; Vigo & Wenger, 1994). Reports of antisocial behavior (e.g., looting) may also be more common in certain types of disasters (Drabek, 1986, p. 231), although we lack sufficient evidence to make such statements across countries. It is thus problematic to generalize at times about emergent behavior in other nations.

CURRENT CHALLENGES AND FUTURE OPPORTUNITIES

This assessment of local emergency management organizations would be incomplete if it did not provide a discussion about future expectations. This final section therefore outlines some of the problems facing the profession in addition to various measures that should be taken to improve performance. First, there can be little doubt that emergency managers must increase their awareness of the trends pertaining to disaster occurrence and impacts, and accordingly do a better job of sharing such information with decision makers and citizens in their communities. Quarantelli's research (1992b) indicates that industrialization and urbanization are among several factors that augment the frequency and severity of disasters. Rising losses have also been reiterated and projected in the most recent assessments of the field (Mileti, 1999). Therefore, emergency managers must do a better job of educating themselves and others to counter prevailing apathetic attitudes about disasters.

In conjunction with this step, emergency managers must also develop improved communication skills and master the art of persuasion (to increase the possibility of buy-in among politicians, department leaders, and other organizational stakeholders). In spite of the current educational opportunities, professionalization is still desperately needed among the rank and file of those working in the field. Future emergency managers must also possess expanded knowledge of different academic disciplines, distinct practical functional areas, and key partners in the public, private, and nonprofit sectors. Today's complex and dynamic disasters require knowledgeable professionals who understand effective management principles and are able to make good decisions based on unique disaster contexts.

To assist them with the difficult choices they often face, emergency managers should become more versed in modern technological tools. Geographic information systems (GIS), computers, remote sensing, personal digital assistants (PDAs), and other equipment may help the emergency manager understand what has occurred and how the disaster may unfold, along with projected needs and what to do about them (Dash, 1997; Fischer, 1998b; Gruntfest & Weber, 1998; Stephensen & Anderson, 1997; Sutphen & Waugh, 1998; Waugh, 1995). For instance, GIS may help emergency managers identify the number of people affected by a hurricane while decision support software such as E-Team and Cameo/Aloha can track human and material resources or the plume of a hazardous materials release. A reliance on technology should always be coupled with a realization of its potential drawbacks and limitations, however (Quarantelli, 1997a). Technological approaches cannot resolve all of the social problems inherent in disasters (e.g., miscommunication).

Local emergency managers and related organizations should also be weary of an overemphasis on homeland security. It is true that the threat of terrorism is both real and menacing

in our current era, and the consequences of attacks involving WMD could kill thousands, hundreds of thousands, or even millions. However, it is also the case that terrorist attacks have historically been less likely than natural and technological disasters, and the effects of these latter incidents can be equally devastating as the Indian Ocean Tsunami and Hurricane Katrina revealed. Emergency managers should accordingly consider all types of hazards, and ensure that they do not neglect the range of potentialities and disaster needs. New programs espoused by the Department of Homeland Security should be integrated into emergency management organizations, but they should not discount the value of traditional approaches for floods, fires, industrial explosions, and the like.

The emphasis on homeland security does present a great prospect for further funding for emergency management however. A great deal of political support has been given to the terrorism threat, and funding for professionals in the field may be at historically high levels. Some of these grant programs may be specific to terrorism (e.g., Urban Area Security Initiative) but others may have broad application to all types of events (e.g., first responder equipment initiatives). Understanding what grants are available and how to obtain them are likely to be coveted skills in the future. If these grants are funded, emergency managers will then need to administer them according to federal rules and regulations. This will require a larger emergency management staff in most communities, which brings up an additional recommendation for the future.

Emergency managers have traditionally been underfunded and overworked in most jurisdictions. New terrorism preparedness initiatives and grant programs discussed above have only exacerbated the already thinly stretched human resources. Politicians and communities must therefore hire additional personnel in emergency management, and emergency managers should take advantage of the current context to promote their programs and departments. Increased responsibilities cannot be adequately addressed by a limited number of emergency managers.

Fortunately, there are many stakeholders to whom the load can be distributed. Emergency managers should therefore spend more time and energy interacting with others. Therefore, networking is a vital activity for everyone involved in the field. Mileti has provided useful recommendations for those establishing and participating in such networks. He asserts that these networks must be inclusive, function in a democratic manner, promote continuous learning, adapt to changing circumstances, and work for the benefit of all parties involved (Mileti, 1999, p. 270).

As emergency managers network and prepare with other departments, planning committees, mutual aid parties, and regional consortiums, it will be imperative that interoperability be developed. This implies not only that all organizations successfully communicate with others, but that they also understand their own roles in times of disasters and how others fit into the overall system of emergency management. Organizational barriers in terms of culture and politics will have to be overcome, and the equipment and language needed to coordinate must become more standardized. The National Incident Management System promoted by FEMA and the Department of Homeland Security will be extended to all jurisdictions in the country in order to foster increased collaboration, and states may desire to emulate California's exemplary Standard Emergency Management System. Everyone needs to have the same strategy (i.e., to reduce the impact of disasters through coordination), even if the individual organizational responsibilities vary in dramatic ways. The overarching goal should be to reduce fragmentation and integrate activities both vertically among levels of government and horizontally across departments. This is especially crucial as disasters span geographic space and distinct authority domains.

Local emergency management organizations must also recognize that unofficial players will continue to respond to disasters of all types. Emergent behavior is to be expected when

extreme situations occur, and this poses advantages and disadvantages for the emergency manager. Consequently, emergent groups must be taken into consideration during the planning process; emergency managers cannot afford to ignore emergence as was done in prior years (Dynes, 1994a). Care must be therefore be given to integrate emergent groups into the response in such a way as to harness their potential contributions in disasters while also minimizing the challenges they present to emergency managers. The current Citizen Corps and CERT programs may help local emergency management organizations reach these goals (Simpson, 2001).

Another possible way to improve emergency management is to learn from other nations. Although hazards might vary by country, the lessons regarding mitigation, preparedness, response, and recovery might have application beyond national borders. As comparative research expands in the future, emergency managers should stay on top of the literature. Furthermore, emergency managers should stay in tune with current disasters around the world and consider the implications of those events for their own jurisdictions. Emergency managers should therefore be continuous students, seeking to apply best practices for the benefit of the community in which they reside.

Finally, and most importantly, local emergency management organizations must become more proactive in their efforts to prevent disasters and prepare to more effectively deal with their adverse impacts. For too long, emergency managers have seen themselves as an extension of first responders who react after an event occurs. Although it will certainly be impossible to eliminate all disasters because of powerful natural hazards, human fallibility regarding the use of technology and seemingly endless social conflicts, there is no reason why more cannot be done to reduce their frequency of occurrence and intensity of impact through more holistic policies (Mileti, 1999; Quarantelli, 1992b).

Unfortunately, local emergency managers have been faced with continuous changes in federal programs. Not only has the nation focused more heavily on one hazard than another at any given time in history, but there has also been an introduction of one policy proposal to be followed by a completely different programmatic objective. As an example, the nation shifted in the 1990s from the comprehensive emergency management concept to a risk-based approach that attempts to build disaster-resistant communities (FEMA, 1997). After the 9/11 terrorist attacks occurred, the federal government again changed priorities—this time to homeland security. Such fluctuations create a serious challenge for small emergency management programs in that momentum built up in one area is repeatedly lost through continuous alterations in policy directions.

Scholars have also proposed additional concepts for emergency managers to consider, and they have brought recognition to variables that have heretofore been neglected. The social vulnerability school asserts that we must take into account people's susceptibility owing to the political and economic structures (Wisner, Blaikie, Cannon, & Davis, 2004, p. 11). Mileti (1999) has encouraged practitioners to consider the utility of the sustainable hazards mitigation concept in that development must be linked to disasters. Others espouse the notion of resilience to disasters to improve institutional capacity (Buckle, Mars, & Smale, 2000; Paton, Smith, & Violanti, 2000). But these and other viewpoints have perhaps inadvertently added to the ongoing confusion.

What is needed is a policy guide that considers the advantages and disadvantages of each of the prior perspectives. For example, comprehensive emergency management attempted to be an inclusive policy, but it was much too reactive (Britton, 1999, p. 23). A risk-based approach is proactive, but it is generally associated with a technocratic approach to disasters (Wisner et al., 2004, p. 4). Implementing the disaster resistance policy will help to limit losses, but it is a restraining concept in that it may ignore social variables (Mileti, 1999, p. 264). The current

focus on homeland security takes into account a real and menacing threat, but it appears to ignore the all-hazards approach that has guided the field for several years (Waugh, 2004c). Those who focus on susceptibility bring to light important social variables although they may inadvertently downplay hazardous locations and dangerous construction practices (Wisner et al., 2004, p. 15). Sustainable hazards mitigation brings to light the value of environmental protection, but it appears to neglect certain phases and actors in emergency management and possibly even actual disasters themselves (Aguirre, 2002b, p. 121; Berke, 1995a, p. 14–15; Mitchell, 1999, p. 505). Resilience is definitely a laudable goal, but it deals less with mitigation and preparedness functions and more with response and recovery operations (Geis, 2000, p. 41; Kendra & Wachtendorft, 2003, p. 41). All of these issues raise the question as to how local emergency management organizations are to operate effectively under what might be termed as a condition of conceptual or policy anarchy.

One possible method to overcome the individual weaknesses of these concepts but retain and integrate their divergent strengths is through the principles of liability reduction and capacity building (which can be regarded as a broad form of disaster vulnerability management) (McEntire, 2000, 2004b; McEntire, Fuller, Johnson, & Weber, 2002).). This suggests that local emergency managers, community stakeholders, and all citizens should strive to reduce liabilities by limiting each of the factors that contribute to disasters (i.e., risk from the physical, biological, built and technological environments, and susceptibility from the social, political, cultural, economic, and institutional realms). Emergency managers should also build capacity through mitigation measures and preparedness steps to reduce impact and advance coping abilities (i.e., resistance and resilience). Such principles are therefore based on—but go much further than—FEMA's prior policy of integrated emergency management (IEM), which never met its goal of reducing risks and focused on the development of response capabilities alone (see Table 10.1).

Interestingly, the literature from diverse scholars—when considered collectively and not individually—may add support for this model of emergency management. For instance, it has been illustrated that culture, exposure to hazards, social structure, root causes, dynamic processes, and unsafe conditions (i.e., liabilities) augment vulnerability (Bogard, 1989; Dow & Downing, 1995; Watts & Bohle, 1993; Wisner et al., 2004). Scholars also imply that capability or capacity has a direct relation to vulnerability (Anderson & Woodrow, 1998; Bohle, Downing, & Watts, 1994; Dow, 1992; Kates, 1985; Pijawka & Radwan, 1985; Timmerman, 1981; Watts & Bohle, 1993).

In their article about risk and resilience, Britton and Clark (2000) acknowledge that both physical variables and social and demographic patterns increase the possibility of disaster, and they state that engineers, emergency planners, and a host of others may implement actions to minimize impact. Don Geis (2000), a major proponent of the resistance paradigm, illustrates how land-use planning, construction materials and techniques, and environmental protection can reduce the risk of disaster. He also accepts the possibility of social proneness as a result of quality of life issues, and discusses how resilience relates to resistance

Table 10.1. Comparison of Two Emergency Management Models

Integrated Emergency Management	Disaster Vulnerability Management
1. Assess risks	1. Assess risks and susceptibilities
2. Assess capabilities	2. Assess resistance and resilience
3. Close the gap between them	3. Reduce liabilities/raise capabilities

(Geis, 2000). Scholarship in the area of homeland security continues these themes as well. Falkenrath, Newman, and Thayer (1998) point out how to reduce the probability or risk of a terrorist attack involving WMD. Webb (2002a) asks if certain individuals or groups are less likely to recover because of their susceptibility to disasters. Warn, Berman, Whittaker, and Bruneau (2003) seek to understand how the structures and infrastructure targeted by terrorists may be constructed in such as way as to promote resistance. Kendra and Wachtendorf (2003) explore the resilience of New York after 9/11, specifically focusing on creativity and improvisation. Although the social vulnerability camp downplays physical variables at times, Wisner et al., do assert at times that risk and susceptibility are products of environmental factors such as land use and construction (2004, p. 4). Wisner et al., also illustrate how the degree of resistance (2004, p. 4) and resilience (2004, p. 54) relate to the social forces that affect individuals and communities. Thomas and Mileti, who support the sustainable hazards mitigation concept, declare that professionals in emergency management should "acquire a basic understanding of risk, susceptibility, resilience, [and] resistance" (2003, p. 7). *Disasters by Design*, arguably the most important book in the field, discusses the risk, susceptibility, resistance, and resilience concepts in various portions of the text (1999, see pp. 106, 125, 174, 264).

Many scholars likewise stress the centrality of vulnerability and request a shift in emphasis to this paradigm (Alexander, 2002c; Britton, 1986b; Comfort et al., 1999; Hewitt, 1983b; O'Keefe, Westgate, & Wisner, 1976; Peacock, Morrow, & Gladwin, 1997; Salter, 1997/98; Wisner et al., 2004). One possible explanation for this shift is that we are recognizing that policy tends to reflect the most recent or most devastating type of hazards, and not the commonalities in all disasters. In addition, we cannot always control hazards themselves, but our vulnerability to the hazards (Cannon, 1993). Interestingly, Weichselgartner's review (2001) of numerous definitions of the vulnerability concept stresses liabilities in an indirect manner and capabilities in a direct manner. His research also notes a close relation of risk, susceptibility, resistance, and resilience to many scholars' definitions of vulnerability.

Even practitioners appear to emphasize vulnerability, risk, susceptibility, resistance, and resilience. Those designing policy for the International Decade for Natural Disaster Reduction, the Yokohama Strategy, and the International Strategy for Disaster Reduction clearly use these terms repeatedly in their respective documents. Reviews of the recent World Conference on Disaster Reduction likewise stress capacity, risk, resilience, and root causes (e.g. liabilities) (Jigyasu 2005; La Trobe, 2005; Pelling, 2005; Rodriguez, 2005; Wisner, 2005). Commenting on this gathering, Villagran Da Leon observes that "the initial risk model based on hazards and vulnerabilities now encompasses issues such as coping capacities, resilience, susceptibility and [other] new terms" (2005, p. 145). Scholarship therefore appears to be converging on several important concepts, and a consensus about policy priorities may be occurring (Britton, 1999b, p. 227; Cole & Buckle, 2004; Weichselgartner, 2001). Local emergency management organizations might therefore want to consider liability reduction and capacity building as ideals to be pursued in order to minimize their community's vulnerability to future disasters (McEntire, 2004a).

RESEARCH NEEDS

The evolving nature of emergency management as well as current challenges and opportunities open up several research avenues for scholars. A few of them will be mentioned here. First, more studies need to be conducted on emergency management organizational arrangements,

and the pros and cons of independent emergency management offices and those integrated into other departments. Not enough is known about the optimal location for local emergency managers. An updated and thorough assessment of all types of emergency management organizations would increase understanding of roles and responsibilities, and thereby facilitate improved coordination. There are many actors and agencies involved in disasters, and there is a dearth of literature on the contributions each one makes. Another research opportunity pertains to the skills needed to be developed by local emergency managers. There are very few studies about how to successfully promote and administer emergency management programs at the local level. Scholars may also desire to reexamine the value of planning councils, the importance of and difficulties associated with mutual aid arrangements, and the strategies for regional integration of emergency management programs. Information about intergovernmental relations is scarce, particularly as it pertains to local interaction with state and federal emergency management agencies. There is a lack of investigations about emergency management organizations in foreign nations, and research on emergence in other countries could be revisited. This would help generate additional lessons for emergency managers in the United States and around the world. In light of the current emphasis on terrorism, there is insufficient information about technology to detect and deal effectively with WMD, grants administration, and the impact of NIMS and the Department of Homeland Security on emergency management organizations. The advantages and disadvantages of current homeland security policy on emergency management deserve significant attention—especially when one considers the less than desirable response to Hurricane Katrina. Finally, a serious assessment of alternative policies for emergency management is warranted. A specific recommendation is to consider the utility of the concept of vulnerability and its relation to other popular terms being discussed today among scholars and practitioners (McEntire, 2004b).

CONCLUSION

Emergency management is a crucial and complex profession that has changed dramatically over time. Emergency management organizations vary dramatically in terms of their name, size, and position in municipal government, although each organization increasingly strives to reduce disasters through mitigation, preparedness, response and recovery activities. Because there is no way local emergency managers can fulfill all of these responsibilities alone, they frequently call upon and work with other departments, planning committees, mutual aid parties, regional consortiums, and even emergent groups. In the future, progress will be seen in numerous areas of emergency management, especially in relation to awareness of disasters, the art of administration, and the use of technology. Effective emergency managers should maintain a balanced approach to the hazards that confront their communities, seek grants and additional personnel for their organizations, network with other agencies, improve intergovernmental and multiorganizational relations, and learn from disasters and emergency management institutions in other countries. Of paramount importance is the need to integrate proactive concepts and holistic policies in order reduce vulnerability and minimize the adverse impacts disasters produce. Scholars also play an important role in understanding emergency management, and several areas of investigation deserve additional academic attention. As professionals and researchers give further attention to these issues, emergency management organizations will be better able to address the major challenges that disasters will certainly present in the future.