CHAPTER 13

EMERGENCY AND CRISIS MANAGEMENT

Practice, Theory, and Profession

WILLIAM L. WAUGH

Emergency management has become an all-too-familiar function of government and increasingly a focus of nongovernmental and private sector action. The need for more effective emergency management capabilities became a national issue in the United States in the 1990s when the nation suffered a series of billion-dollar disasters. So too did the need for proactive risk-reduction programs, which became a major international issue following the 2004 Indian Ocean tsunami. Similarly, the imperative to improve the international humanitarian assistance system was reaffirmed when Haiti and Chili were devastated by earthquakes in early 2010. Emergency management has developed substantially as a profession and as a distinct set of management practices worldwide. This chapter examines the evolution of the profession and practice of emergency management and the development and impact of disaster policy and emergency management scholarship.

Emergency management is the term commonly used in the United States, Australia, Canada, and some other English-speaking nations. It is called *crisis management* in Europe and *disaster management* in India and within the United Nations and other international organizations. *Disaster risk reduction* is the focus of international efforts to mitigate hazards. There are significant differences in how emergency management is practiced in other parts of the world, particularly as regards the role of central governments, but there is increasing commonality in general approaches to managing hazards and disasters and increasing cooperation in the pursuit of solutions to emergency housing, communications, and other hazard mitigation and disaster issues.

THE EVOLVING PRACTICE OF EMERGENCY MANAGEMENT

Emergency management practitioners and scholars frequently use the stereotypical air raid warden or civil defense coordinator as a reference point in describing how far the profession and practice of emergency management have come in the last half century. During World War II and through the 1950s and 1960s, civil defense offices were responsible for local emergency planning, and their focus was almost solely on the threat of nuclear attack. Civil defense coordinators were frequently retired military who were untrained in emergencies other than nuclear attack, and the cultures of their organizations were decidedly command and control. After a series of major hurricanes and earthquakes in the late 1960s and 1970s, most notably Hurricane Camille in 1969, the National Governors Association lobbied for a reorganization of federal disaster relief agencies and programs. The result was the creation of the Federal Emergency Management Agency (FEMA) by President Carter in 1979. From the beginning, the agency adopted the comprehensive approach to

emergency management. The approach is now the foundation of American emergency management. In essence, the comprehensive approach involves all hazards, all stakeholders, all impacts, and all phases or functions of emergency management.

All Hazards

The all-hazards approach is commonly referred to as the *multihazard* approach in other nations and in United Nations programs because it does not refer to literally all hazards. That is, programs typically focus on the broad range of known threats in the community and are flexible enough to adapt to unanticipated threats. Planners develop generic plans that can be adapted to specific disaster types, rather than having separate plans for each one. Mass evacuation, for example, is essentially the same for hurricanes as it is for other kinds of threats. Planners may develop annexes to deal with issues that are specific to only one disaster type, such as radiation exposure during nuclear accidents, or issues affecting one segment of the community, such as evacuating and sheltering special needs populations.

All Stakeholders

The involvement of all stakeholders means it is expected that hazard management and disaster operations will include public agencies, private firms, nongovernmental organizations, and, frequently, individual volunteers—all of whom might be called upon in a major disaster. For example, the state of California's manual for dealing with volunteers is titled *They Will Come,* and the expectation is that volunteers will come and should be put to work. In fact, the FEMA administrator, Craig Fugate (appointed in 2009), reminded a crowd of emergency management practitioners, scholars, and students in his opening plenary presentation at the 2009 National Conference of the International Association of Emergency Managers (IAEM) that 90 percent of search-and-rescue operations are conducted by neighbors, friends, and family members and that preparing the community to respond to disaster should be the priority rather than simply trying to get emergency responders to the scene a bit faster. A prepared community is much more resilient and can recover faster. Community resilience, including preparedness, is the new priority for emergency management programs.

Phases of Emergency Management

The phases or functions of emergency management are mitigation, preparedness, response, and recovery. Mitigation involves actions to prevent or reduce the impact of disasters, such as limiting development on floodplains or adopting building codes. Preparedness involves planning, training, exercising, stockpiling food and medical supplies, and other actions to ready for disasters. Response can involve firefighting, emergency medical treatment, evacuation, emergency sheltering, mass feeding, and other activities to save lives, property, and the environment. Recovery involves restoring lifelines, such as power and water, but is increasingly expanding to include redevelopment of the affected area and long-term treatment of the affected population. The phases overlap and are not always sequential. For example, covering damaged roofs with FEMA blue tarps is usually referred to as a response activity, but it is also a mitigation activity because it prevents or reduces damage to the interior of the structures. Predisaster recovery planning, a preparedness activity, might include stockpiling tarps and determining which organization will begin the process of covering roofs.

Professional emergency managers assume that their role involves an all-hazards approach, all stakeholders, all four phases or functions, and all impacts. The top professional credential, the

Certified Emergency Manager (CEM) designation, is based on that assumption, and candidates are tested on their knowledge of and experience in all of those aspects of emergency management. Failing to include all phases means failing the test.

THE EMERGENCY MANAGEMENT PROFESSION

The civil defense stereotype also provides a reference point for the changes in the profession of emergency management. The demographics of emergency management have been changing rapidly. Most of the old civil defense coordinators are long retired, and the retirement of baby boomers is opening the way for a new generation of personnel. That new cadre includes more women and more minorities and will have fewer retired military, although the U.S. Air Force has an emergency management job specialty and is encouraging its personnel to seek certified emergency manager certification and to engage with civilian emergency managers.

The increasing role of social media in disaster operations is only one of the many technological changes that are under way. Emergency management programs at all levels have Facebook pages, and officials use Twitter to pass along information to employees, clients, the public, and other stakeholders. Moreover, the emergency management profession is evolving, and demographic and technological changes are speeding that process. In many respects, demographic changes mirror those occurring elsewhere in American society and particularly the public service, which portend fundamental transformation in the values that underlie the emergency management profession. The "new" emergency management is transparent, participative, and collaborative and involves networks of public, private, and nongovernmental organizations, as well as unaffiliated volunteers.

EMERGENCY MANAGEMENT POLICY PRIORITIES

The civil defense stereotype is also a reference point for policy change. All-hazards plans may well include nuclear attack, but the threats have been redefined and, in some cases, changed fundamentally. Terrorism has been the focus of Homeland Security planning. Indeed, twelve of the fifteen planning scenarios that the Department of Homeland Security has used to design national exercises and to guide national planning are terrorism related—ranging from the detonation of a nuclear device to the use of biological agents. The three nonterrorism scenarios are a major earthquake, a major hurricane, and a pandemic. Floods, tornado outbreaks, tsunamis, wildfires, and other threats have not been part of the Homeland Security agenda, although changes are being made in planning assumptions under the Obama administration.

Mitigation clearly is a policy priority under the new administration, and investments are being made in federal funding programs to encourage mitigation planning and programs at the state and local levels. Mitigation was the centerpiece of the Clinton administration's emergency management effort. James Lee Witt, FEMA director during the "golden age" of FEMA in the 1990s, created Project Impact (the Building Disaster-Resistant Communities Program) to encourage and support mitigation efforts at the local level. The program was terminated in the early days of the George W. Bush administration despite evidence that it was effective in reducing the vulnerabilities of communities participating in the program. The mantra of Witt's FEMA was "one dollar spent on mitigation saves four dollars in recovery."

After 9/11, the focus was on response rather than mitigation and response to terrorism rather than response to natural and other man-made disasters. Hurricane Katrina was a reminder that the nation faces other risks, as well. The rejoinder to the observation that "the world changed on 9/11" is that the world changed again when Katrina made landfall. Restoring the nation's capacity

to deal with large-scale natural disasters, as well as terrorism-related events, has been a federal priority since Hurricane Katrina in 2005.

LESSONS LEARNED

Seeking lessons learned is part of the emergency management culture. Preliminary assessments during disaster operations, called "hot washes," and after-action reports follow major operations. Strengths and weaknesses are noted, and in some cases, policies and programs are altered. However, communications interoperability, or the lack thereof, has been a major concern for decades. Many deaths in the World Trade Center towers on 9/11 could have been prevented if firefighters and police officers could have communicated with one another and with officials outside of the buildings. Communications failed again during the Katrina disaster. Emergency responders lacked the capability to talk with one another. A solution to the problem has been found in a few states, for example, Delaware and North Carolina, but not in many. Intergovernmental coordination has also been a problem in major disasters and in all of the Homeland Security TOPOFF (Top Officials) exercises. The same coordination and information-sharing issues were evident when the Homeland Security system failed to prevent the attempted bombing of the Northwest Airlines flight from Amsterdam to Detroit on Christmas Day 2009.

Emergency management is like other policy areas. Issues arise, often borne of crisis, and policies may change. The window of opportunity can be brief, even with a Katrina-scale disaster. Some issues find quick support. For example, because of media coverage of the Katrina disaster in New Orleans, Congress quickly passed the Pets Evacuation and Transportation Standards Act of 2006, sometimes referred to as the "no pet left behind act," to ensure that pets are taken care of in the next catastrophic disaster. Pet rescue and sheltering had been a subject of discussion within the professional emergency management community for years prior to Katrina, but little attention to that issue was evident in the Gulf response.

Special populations became a major concern because of Katrina, as well. Public health officials and medical responders to Hurricane Katrina were overwhelmed by the number of people with chronic conditions, such as heart disease, diabetes, and high blood pressure. Problems involving the evacuation of nursing homes and hospitals are also encouraging greater attention to their preparedness programs. Predisaster planning for FEMA trailer parks, transitional housing to move survivors from emergency shelters to permanent housing, partnerships with large retail firms such as Walmart for the provision of water, ice, and food, and predisaster negotiation of contracts for critical services such as roof repair and even the management of recovery operations are being implemented. Lessons were learned, and officials are trying to make sure that the nation is not embarrassed again by a poorly planned and executed disaster response.

There is still a long way to go in addressing known and unknown threats. The implications of climate change, for example, are only slowly being recognized. New York City is preparing for a rise in sea levels, increased precipitation and possible flooding, and temperature change that may result from climate change (New York City Panel on Climate Change 2009; New York City Office of Emergency Management 2009). Land-use planning and development are changing to ensure that the city is more sustainable, less vulnerable to natural disasters, more energy efficient, and "greener" in terms of reducing its global-warming emissions. Mitigation is linked to sustainability.

THE ORGANIZATION OF EMERGENCY MANAGEMENT

The civil defense coordinator stereotype yet again provides a convenient reference point for the evolution of emergency management organization and process. Civil defense received federal

funding, but the system lacked strong organizational support. Local offices operated with minimal guidance from Washington and often with little connection to local and state agencies. In the early 1970s, the incident command system (ICS) was developed in California to manage responses to large wildfires that involved multiple jurisdictions and agencies. Because of the problem of coordinating multijurisdictional responsibilities during wildfires, Congress funded a study to identify and address the major organizational problems. The U.S. Forest Service and representatives of state and local fire departments participating in the FIRESCOPE (Fighting Resources of Southern California Organized for Potential Emergencies) Program developed ICS. The system identifies an incident commander with staff (safety, liaison, and public information) and line functions (operations, planning, logistics, and administration and finance). The ICS structure is flexible so that staff and line functions can be added as necessary. It provides unity of command, a clear hierarchy, and a common terminology. It is also based on the principles of management by objectives to ensure that the units follow a common set of objectives. The theory is that the first responder on the scene is the incident commander and command is transferred to more senior personnel as they arrive.

When the number of agencies grows larger, a multiagency command system (MACS) is implemented to facilitate coordination among the response agencies. The emergency operations center is the mechanism to coordinate efforts. Multiagency, multijurisdictional, intergovernmental, and intersector operations might necessitate creation of a unified command (UC) that provides for collective decision making and, at least in theory, consensus building. The incident management system (ICS, MACS, and UC) provides structures that are familiar and terminology that is common across jurisdictions, and thus multiple organizations can be integrated into the operations. While not universally understood and used, ICS is generally understood by emergency management and response agencies and by many private sector and nongovernmental organizations. ICS is also the foundation for the National Incident Management System developed after 9/11 to link local, state, and federal emergency management and Homeland Security resources. National Incident Management System compliance is now mandatory if agencies wish to receive federal funding.

ICS and the Standard Emergency Management System were common elements in California's programs. County governments were designated the "functional area" for emergency management, and regional support structures were created to coordinate the efforts of local and state agencies. The state also had a very-well-developed statewide training program and strong links to university-based research programs. Clearly, California was well ahead of other states in the development and professionalization of its emergency management system. The range of hazards in the state certainly encouraged the adoption of the all-hazards approach, and the necessity for multijurisdictional coordination encouraged the development of mechanisms to ensure that resources were available when needed.

EMERGENCY MANAGEMENT AND HOMELAND SECURITY

Finally, the civil defense stereotype has remained the symbol for nonprofessional, command-and-control, national security-focused emergency management. The forced marriage between emergency management and Homeland Security after 9/11 conjured up images of that past for many professional emergency managers. Conflicts over policy priorities, that is, terrorism versus natural disasters, became a struggle to preserve the core values of emergency management. Federal mandates are often met with resistance because they conflict with the more collaborative and cooperative processes that professional emergency managers have used for at least two decades, as well as conflict with local priorities. In California, the big threat is earthquakes, not terrorism.

In Florida, the focus is on hurricanes. Risk-based planning has become the tool for keeping attention focused on and resources ready for the most likely threats.

The George W. Bush administration also developed plans for "incidents of national significance" that increased federal authority to supplant state and local authority during catastrophic disasters (Derthick 2007). The Katrina disaster was not deemed an "incident of national significance," despite the perception that state capacities in Louisiana, including the capacities of the state executive, had been overwhelmed. The federalization of a major disaster would raise legal and practical issues, and the development of policies and procedures to deal with catastrophic disasters remains a priority.

The role of the U.S. Northern Command and other military assets is also being debated. The threats of terrorism, particularly bioterrorism, and pandemic have encouraged changes in law and practice to ensure greater executive control in emergencies. Authority to order quarantines, for example, has been clarified so that authorities can isolate infected populations should that become necessary to prevent the spread of disease. However, with few exceptions, so-called mandatory evacuations are not legally mandatory. Issues of authority are also addressed in both of the major sets of emergency management standards, the Emergency Management Accreditation Program (EMAP) and National Fire Protection Association (NFPA) standard 1600.

There has been a strong reaction from the nation's governors against efforts to give the federal government a lead role in catastrophic disasters. In fact, in 2004, when Florida suffered four hurricanes in quick succession, then governor Jeb Bush, brother of President Bush, declined direct federal involvement (Sylves 2008). Federal support was welcomed, but state authorities had the situation well in hand and did not need help in directing the disaster response. States now have added resources because they can borrow personnel and material through the Emergency Management Assistance Compact (EMAC).

EMAC was created as an agreement among southern states after Hurricane Andrew in 1992 and was opened to all states and territories in 1995 and chartered by Congress in 1996. The compact provides a mechanism for governors to request resources from other states. Resources, such as medical teams, are clearly defined, and states not affected by the disaster can offer to provide the resources at a negotiated price. During the Katrina and Rita disasters, almost sixty-six thousand personnel were deployed under EMAC. They included emergency managers, law enforcement officers, firefighters, medical personnel, building inspectors, public health officers, and other technical personnel. Equipment ranged from power generators to portable toilets (EMAC 2006). The availability of emergency management–trained personnel and related resources lessened the need for military personnel untrained in emergency operations. All states and territories were not members of EMAC when Katrina made landfall, but all were members soon after. More states adopted statewide mutual-aid agreements, as well, to facilitate the sharing of resources among communities.

Lastly, the Katrina disaster provided impetus for a reevaluation of the role and function of emergency managers. In 2006, Mike Selves, then president of IAEM, asked for FEMA assistance in assessing the state of the profession. His question was prompted by the evident lack of a correct understanding of emergency managers' roles—among public officials at all levels, the media, and the public—in response to the hurricane. Professional emergency managers were frustrated by poor decision making by officials, who knew little about emergency management. A working group was assembled in 2007 to develop a definition, mission statement, and vision for emergency management and to identify the basic principles that underlie its practice. The working group included representatives from IAEM, the National Emergency Management Association (the professional organization for state emergency managers), FEMA, the EMAP Commission (a

standard-setting and accrediting body for state and local emergency management programs), the NFPA 1600 Committee (the standard-setting body for private emergency management and business continuity programs), the private sector, and the academic community (International Association of Emergency Managers, 2010). The group defined *emergency management* as "the managerial function charged with creating the framework within which communities reduce vulnerability to hazards and cope with disasters." The mission of emergency management was described in these terms: "to protect communities by coordinating and integrating all activities necessary to build, sustain, and improve the capability to mitigate against, prepare for, respond to, and recover from threatened or actual disasters, acts of terrorism, or other man-made disaster." The vision was defined as "safer, less vulnerable communities with the capacity to cope with hazards and disasters."

The eight "principles of emergency management" are:

1. Comprehensive
2. Progressive
3. Risk driven
4. Collaborative
5. Integrated
6. Coordinated
7. Flexible
8. Professional

The eight principles begin with comprehensive emergency management, that is, all hazards, all stakeholders, and so on. They also reaffirm that emergency management is collaborative and should be risk driven, clear messages that command-and-control approaches are inappropriate and ineffective and worst-case scenarios are not substitutes for good risk assessment. The products of the working group have been endorsed by the major stakeholders and are being integrated into FEMA's training programs.

RESEARCH ON DISASTER POLICY AND EMERGENCY MANAGEMENT

The objective here is to examine the state of the emergency and crisis management literature. Where did the literature come from, where is it now, and where is it likely to go in the near future? First, the terminology is important. Academic researchers in the United States and Europe most frequently simply refer to work in this area as *disaster research,* although some in political science and public administration now differentiate somewhat between *disaster policy research* and *emergency management research,* with the later being focused more closely on the operational side of the field.

As one might expect, disaster policy and emergency management research has followed the evolution of the profession and field, but it has also been driven by major disasters. The tributaries are many. "Focusing events," as Thomas Birkland (1997) has termed them, have drawn attention to problems and encouraged policy-relevant responses. However, there are also threads of research that have been sustained over decades and continue today on topics such as collective behavior in disasters, hazard mitigation, intergovernmental relations, warning systems, and evacuation. Through those sustained efforts, social science researchers have developed a fairly firm foundation for emergency management practitioners to operate on. In fact, to receive national certification as professional emergency managers, applicants have to be at least somewhat familiar with the social science literature on disasters and emergency management. The certified emergency manager reading list includes major scholarly works (International Association of Emergency Managers, 2010).

With a few exceptions, public administration scholars were late in joining the disaster research community. The broader social science disaster research community has been largely made up of sociologists. The research is applied for the most part but includes basic, theory-driven, empirical research. This context is important to an understanding of the public administration literature because the methodological foundation for the study of natural and technological hazards and disasters by social scientists has generally come from the sociologists. Fieldwork has been a mainstay (Stallings 2006; Rodriguez, Quarantelli, and Dynes 2007). Case studies are common although they have become much more theory- and data-driven.

Building Public Administration Research Capacity

Public administration scholars were actively recruited by FEMA in 1984. An agreement was signed between the National Association of Schools of Public Affairs and Administration (NASPAA) and FEMA to grow a research community within NASPAA member programs (FEMA 1985). Charles Bonser, then dean of the School of Public and Environmental Affairs at Indiana University, with the help of William Petak of the University of Southern California, organized a workshop to bring together disaster scholars. Thirty-four scholars were invited to the National Emergency Training Center as NASPAA/FEMA fellows in 1984 and given a broad overview of emergency management and social science disaster research over a two-week period (Bonser et al. 2010). The original intent was to continue building the community, but there was no follow-up to the initial workshop. Another product of the agreement was the 1985 *Public Administration Review (PAR)* special issue on emergency management. The issue served to introduce the broader public administration community to emergency management. About a dozen of the NASPAA/FEMA fellows are still active disaster researchers. The National Science Foundation has since funded projects to create a new generation of social science disaster researchers, including public administration and policy scholars, but it is still a relatively small community.

The second major contribution to the literature was the ICMA's green book on emergency management (Drabek and Hoetmer 1991), which included some of the same scholars and practitioners who participated in the 1985 special issue of *PAR*. Thomas Drabek has described the first green book as one of the major "bridge-building" efforts in disaster research (Drabek 2009). The volume became the handbook for local emergency managers and the basic textbook for students preparing for careers in the field. It is still a much-cited source of basic information on emergency management. The second edition (Waugh and Tierney 2007) summarizes the social science literature but is much more oriented toward public administration and the issues raised by the Katrina disaster.

The 9/11 attacks had a profound effect on the emergency and crisis management literature. The 2002 *PAR* special issue on 9/11 included a broader group of scholars and focused on democratic governance in the aftermath of the attacks. The emphases were the next steps in the "war on terrorism" and how they might change the environment in which public administrators and, indeed, the public work. Organizational and legal issues were paramount.

The 2007 *PAR* special issue "Administrative Failure in the Wake of Hurricane Katrina" was somewhat different. The perspective was more field oriented, including the argument that racism influenced the poor response, the ethical culture in Louisiana was an obstacle to effective action, the "big questions" concerning how to respond to events of such scale and intensity had not been resolved, and the failure to recognize and manage the risk reflected serious system flaws. There was consensus that the vulnerability of New Orleans should not have been a surprise to public officials.

The Research Threads

In 1984, FEMA was young and officials were still trying to define its mission. The mission boundaries included terrorism and other national security threats, as well as natural and technological disasters. The issues of the day were organizational and political. The dominant interests within FEMA were still national defense related. The emergency management research community in public administration was very small, but there were clear threads in the research, including, in particular, those of the scholars and practitioners who were focusing on the role of FEMA and the design of emergency management policy and those of the scholars and practitioners who were focusing on hazard mitigation. The threads of policy and mitigation research continued and, in fact, have since become intertwined (see, e.g., Godschalk et al. 2009).

The new threads in the literature are organizational issues, particularly relating to the emergency management networks, as well as presidential leadership, politics, and intergovernmental coordination: crisis leadership, collaborative leadership, and complex adaptive systems (see, e.g., Comfort, Ko, and Zagorecki 2004; Kapucu and Van Wart 2006). The principal research threads seem to be on collaboration and its essential elements, including communication and trust, and on the development of resilient organizations, communities, and nations (Comfort, Boin, and Demchak, 2010). Determining the preconditions for collaboration, whether derived from circumstances, organizational characteristics, or a particular leadership skill set, remains an unanswered question (Weber and Khademian 2008).

The social vulnerability thread is newer. The starkest pictures from the Gulf coast in 2005 were those of the elderly and children without food or adequate shelter. The poor disaster response was a national embarrassment, and increasing poverty in the United States and the increasing movement of population to vulnerable coastal areas portend more Katrina-like disasters in the near future. American society is becoming more rather than less vulnerable. The growing research focus on social vulnerability (Tierney 2006; Cutter and Emerich 2006) is understandable.

The intergovernmental, multiorganizational, and intersector coordination thread is many decades old. Coordination was a major problem during the Katrina response and recovery efforts. It was a major problem during the 1900 Galveston hurricane that killed six thousand to eight thousand people. It has always been a problem. What is new in the thread is the focus on organizational learning, communication, and collaboration. The thread is increasingly grounded in the collaboration and network management literature, and new methodologies are being brought to bear. (See chapter 17, "Collaborative Public Agencies in the Network Era," in this volume.) Michael McGuire (2009) has linked the development of the emergency management profession to collaborative activities and concluded that collaborative behaviors can be developed. There is a skill set that professional emergency managers can cultivate. He also concluded that emergency managers located in response agencies tend to collaborate less frequently because of the cultures of their organizations. Hierarchy and control are not conducive to open communication, flexibility, and collaboration and present particular problems when many participants are resistant to or unfamiliar with command-and-control structures (Waugh 2009a).

The incident command system may well reduce communication and interfere with collaboration, in other words. The skills of the official are critical, and success may well depend on the official's management style and collaborative experience. There are still fundamental questions concerning whether collaboration is related more closely to a leader's skills or to institutional mechanisms or circumstances. Conflicts over turf are not the only obstacles to coordination and collaboration. Different assumptions about leadership are also obstacles.

Another factor that may well facilitate collaboration is the development of standards for the

practice of emergency management. Currently, EMAP sets standards for and accredits state and local emergency management programs. EMAP focuses on "programs," and that means all stakeholders who are involved in disaster responses, not just the public agency charged with protecting life and property. The necessity for collaboration is an assumption that underlies the standards, and the accreditation process seeks documentation of collaborative planning and decision making. To the extent that the standards affect organizational cultures and management styles, they will affect how emergency managers and agency personnel interact with outside groups (Waugh 2007).

The challenge of interorganizational coordination and collaboration has been a focus of considerable scholarship. Tensions created by the federal system of government, in which coordination is critical, have generated a range of arguments, from Donald Kettl's (2004) argument that government should be reorganized to address new challenges such as terrorism to Martha Derthick's (2009) questions concerning why the Bush administration failed to centralize its power in response to the challenge presented by catastrophic disasters. The showdown occurred during the 2004 hurricane season in Florida when Governor Jeb Bush declined federal aid. Governor Bush was point man in the National Governors Association's opposition to an expanded military role in disaster operations. Presidential disaster declarations are fraught with politics, and some presidents are more willing than others to use their authority to issue declarations for political purposes even for marginal disasters that could have been handled by state governments (Sylves 2008).

The literature is still coalescing around the issue of resilience. There is a research thread but still considerable debate over what is meant by *resilience.* Comfort, Boin, and Demchak (2010) go a long way toward sorting out its meaning and its many manifestations. The capacity to recover quickly is the usual interpretation, but the capacity to learn the correct lessons from past events, prepare for the next disaster, and be able to adapt effectively is very much a part of resilience. Organizational and community resilience increases with learning. Resilience is of particular importance because of the concerns about capabilities to deal with and recover quickly from catastrophic disaster. Disaster recovery used to mean restoration of lifelines and basic community functions, and now it may mean decades of redevelopment. The capacity to survive and recover from a category 5 hurricane, a magnitude 8 or higher earthquake, a great tsunami, a pandemic, an asteroid strike, or any other catastrophic event may well rest with individual communities. The Katrina disaster could have been worse. The Haitian earthquake in January 2010 demonstrated the need to address social vulnerability before the next disaster and may well test the capacity of that nation to recover despite the massive international effort to help. The Chilean earthquake and tsunami of February 2010 demonstrated the value of hazard mitigation in building national resilience. Chilean building codes and construction standards clearly saved lives and reduced property damage. The Haitian and Chilean disasters offer stark evidence of the need to build more resilient communities.

There is increasing attention to the emergency management profession itself (Blanchard 2009). On the one hand, the attention reflects changes in the demographics of the profession. It is the familiar story of baby boomers retiring and being replaced by people who are younger and better educated. The new generation of emergency managers includes more women and more minorities. On the other hand, there is greater appreciation for the skills and experience of current emergency managers. Many emergency management decisions made during the Katrina disaster were made by nonprofessionals. Fundamental errors were made in emergency planning and operations, not to mention in hazard mitigation, and it was a frustrating experience for those who knew better and had to watch from the sidelines (Waugh 2006). The successes have tended to be overlooked. For example, in most respects, the evacuations were remarkable in terms of the number of people moved out of harm's way (Derthick 2007). Developing a strategic view of emergency manage-

ment to ensure that major policy choices are made before disaster strikes and to ensure less ad hoc response and recovery efforts is critical (Canton 2007). Effective emergency management programs require forethought and planning.

There are still important issues relative to the application of social science research to emergency management. Myths still influence policy design and program management, such as the myth that people will panic if given too much information or given an accurate picture of serious risks when, in fact, panic is more likely if too little information is provided and people do not understand what is happening. Emergency management is becoming a distinct profession, and there is greater attention to stress in disaster operations and the life cycle of relief operations from their heroic beginnings to their depressing conclusions, as well as to the generally mundane tasks of recruiting, retaining, and paying the workforce during crises.

Research on the emergency management profession is slowly developing (Blanchard 2009). Thomas Drabek's classic study, *The Professional Emergency Manager* (1987), concluded that interpersonal skills and the ability to interact effectively with other stakeholders are more important than technical skills. Today, he might well frame his conclusions in terms of collaboration and network management. Financial and human resource management concerns often overshadow disaster management concerns. Indeed, a 2003 National Science Foundation–funded workshop on the skills and competencies necessary for emergency management identified almost all of the core competencies required in master's of public administration programs, including an understanding of the social and political context, decision making, communication, leadership, analytical skills, budgeting, and human resources management (Thomas and Mileti 2003). What was not mentioned explicitly but was reflected in the inclusion of qualities such as empathy was the *public service ethic,* the desire to respond to public needs or simply *to do good.*

The Department of Homeland Security's relationship to FEMA and to the agency's state and local counterparts remains an issue even though the "FEMA in or FEMA out" debate appears to be over. Criticism of the department for its failure to maintain the emergency management capabilities developed during the Clinton administration likely encouraged President Obama to appoint an experienced emergency manager as FEMA administrator. Interestingly, the Obama's appointee, Craig Fugate, was the head of emergency management in the state of Florida and served under Governor Jeb Bush during the conflict with federal officials in 2004. He served in Republican and Democratic administrations in Florida and has broad experience the field. FEMA has had too few administrators with emergency management experience and expertise.

The big change in the emergency management literature has been new theoretical frameworks. There are better and evolving measures of risk, collaboration, change, and other variables. The case studies and field research that characterized early emergency management studies have been enriched with empirical data and modeled. Institutional analyses have similarly been brought up to current social science standards, and innovative modeling is being done. Legal analyses are still being conducted and, in fact, seem to be increasing after confusion over authority was evident during the Katrina response and issues such as quarantine authority have arisen because of the threat of pandemic, but the bar has been raised. Corrective action, including legislative reform, is being recommended.

The most significant contribution may be the use of network analysis. The sheer number and diversity of actors involved in hazard mitigation, disaster response, and disaster recovery efforts has encouraged researchers to adopt network analysis techniques to examine patterns of social interaction among the actors (Comfort, Ko, and Zagorecki 2004). The degree of centralization of authority, the nature and density of groups and subgroups, and the distance between actors are critical variables in understanding communication, coordination, integration, and collaboration.

The disaster literature has taken on a very international flavor as lessons are drawn from crisis experience around the world. Practitioners, too, are drawing upon the experience of professional colleagues in other countries. Some cross-fertilization is also due to the increased professionalization of emergency management and humanitarian assistance. Many issues are the same, particularly in regard to the development of an ethic regarding local economic, social, and political prerogatives, in other words, *community-driven development* in the humanitarian assistance vernacular and *local* or *community control* in domestic emergency management operations. Security for relief workers and those receiving aid is also a common concern. Sustainable assistance and the links between disaster recovery and development are growing issues in both. Transitioning from material aid to cash, both to stimulate the economy and to reduce logistical needs, is common to both. There is greater professionalism among nongovernmental, as well as governmental, actors in both domestic and international organizations. There is greater accountability for funds and greater accountability to donors for performance, be they philanthropic organizations, faith-based organizations, or public agencies (see, e.g., Harmer and Cotterrell 2005; Cahill 2007). The applicability of the Sphere Project's Humanitarian Charter and Minimum Standards for Disaster Response are issues that might be addressed by researchers. The Sphere Project is an international effort of nongovernmental organizations, United Nations agencies, and academic institutions to develop standards for food, housing, sanitation, water, health, and other essential services for refugee populations and disaster victims (Sphere Project 2010). The point is that there is cross-fertilization. Both the domestic and international disaster relief systems include public, private, and nongovernmental organizations, and domestic and international organizations may well collaborate in domestic or international operations. International relief organizations responded to the Katrina disaster and were integrated into operations. Firefighters from Mexico, Australia, and other nations frequently work wildfires in the western United States when fire season is over in their own jurisdictions. The practice of emergency management is internationalizing and the research is as well.

THE FUTURE OF EMERGENCY AND CRISIS MANAGEMENT

One axiom of emergency and crisis management is that major policy decisions follow major disasters or crises and all too frequently relate only to those events. There are exceptions, however. The Robert T. Stafford Disaster Relief and Assistance Act of 1988 provides a broad foundation for the nation's emergency response system, and the Disaster Mitigation Act of 2000, which amended the Stafford Act, mandates hazard mitigation planning as a condition for receiving disaster assistance. The Stafford Act and Disaster Mitigation Act of 2000 are all-hazards focused. The National Flood Insurance Program encourages mitigation efforts but has had limited success with reducing the risk of floods. By contrast, much of the legislation that followed the 9/11 attacks focused narrowly on securing the nation's borders and protecting civil aviation, the two major vulnerabilities revealed by the attacks, and comparatively little attention was paid to natural and technological hazards until Hurricane Katrina in 2005. The capabilities that FEMA and its state and local counterparts developed prior to 9/11 are now being rebuilt to ensure that the same mistakes will not be made in the next catastrophic disaster.

The lessons of 9/11 and Katrina are still driving emergency management policy and practice and disaster research. The major issues are how to deal with catastrophic disasters, what incentives will encourage hazard mitigation, how to reduce social vulnerability, and how to make intergovernmental and multiorganizational coordination more effective. The professional emergency management community is increasingly international and collaborative. The same is true of the disaster research community. Collaboration is increasing among planning, public administration,

political science, sociology, geography, economics, and other scholars (see, e.g., Godschalk et al. 2009). Collaboration is being encouraged and facilitated by the Department of Homeland Security's centers of excellence and other research centers. Threads of research involving public administration scholars have been active for decades, and newer threads have developed since 9/11 and Katrina and other disasters. The hazard mitigation, network analysis, and social vulnerability threads are perhaps the most notable. There are other threads dealing with such issues as evacuation that include social scientists, but they seem to have greater momentum in other disciplines. Since 9/11 and the Katrina disaster, disaster research has gained some prominence in the public administration academic community and is having an impact on emergency management policy and practice in the professional community.

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