

L  
330  
c.2

*lessons of disaster*

POLICY CHANGE AFTER  
CATASTROPHIC EVENTS

THOMAS A. BIRKLAND

**HAZARD HOUSE COPY**

---

Georgetown University Press  
*Washington, D.C.*

Memphis areas. While the threat of earthquakes in areas outside California is known to professionals in this field, public appreciation of the threat outside California is considerably lower.

### ***Disaster Mitigation as a Primary Goal of Disaster Policy***

Because of the potential for substantial injury, loss of life, and economic disruption and property loss, many engineers, social scientists, policy analysts, and practitioners believe that more should be done both to raise awareness of disaster mitigation and to promote its practice. Mitigation is any action that would lessen the impact of a natural disaster. Research on mitigation emphasizes a preference for policies that employ land-use controls, improved building codes, or actuarially sound insurance programs. Other policy alternatives, such as building levees, dams, breakwaters, and groins and replenishing beach sand, tend to be short-term palliatives rather than long-term solutions. Indeed, these techniques tend to ignore what has been learned through scientific, social scientific, and behavioral research, but often provide a "false sense of security" that mitigation is a large-scale government effort and will work even in the face of catastrophic events. A selected list of key hazards legislation, including legislation that promotes mitigation, is shown in table 4.1.

Promoting mitigation is challenging in part because it is a relatively new aspect of disaster policy, although research has long promoted mitigation as a means of protecting lives and property. Federal efforts to alleviate suffering in the wake of disasters have traditionally concentrated on disaster relief after the fact, not on mitigation in advance. The Disaster Relief Act of 1950 (PL 81-875) was considered an important improvement because it created a general disaster relief law that replaced ad hoc, event-specific aid packages. Subsequent legislation has often been event specific and, as is typical of distributive policy, is characterized by logrolling and a focus on the needs of particular areas. May (1985, 21) notes that such logrolling was not only predicated on potential future disasters but also based on past disasters. Aid provisions retroactive to prior disasters have often been written into new

relief measures to ensure broader support, but mitigation has received little or no attention. Platt (1999) notes that disaster declarations are profoundly political in that they provide the executive branch and Congress with opportunities to distribute federal aid. This was particularly true during the Clinton administration, which learned from FEMA's mishandling of Hurricane Andrew in 1992 that rapid delivery of relief pays substantial political dividends.

Federal policy does not ignore mitigation completely, and in recent years it has become more prominent. Perhaps the earliest and still the best-known mitigation program is the National Flood Insurance Program, which requires that communities adopt building and planning standards in floodplains before property owners are allowed to purchase federally subsidized flood insurance. This is a powerful incentive to engage in mitigation, as holders of federally backed mortgages are required to purchase flood insurance for property in defined flood hazard areas. But this type of mitigation has often been ineffective in reducing damage. While it has encouraged some mitigation in the way structures are built, flood insurance premiums are not based on a property's risk profile. Rather, premiums are set artificially low, thereby creating what insurance professionals call a "moral hazard"—that is, a hazard created when insurance makes people take greater risks than they would without insurance. Artificially low flood insurance rates have subsidized real estate development in flood-prone areas where development should be discouraged. The Flood Insurance Reform Act of 2004 (PL 108-264) may reduce this subsidy somewhat for property owners in flood-prone areas in a way that may well increase efforts to mitigate flood damage. This law was designed to require more aggressive mitigation measures, including improved land-use practices, among other things.

The National Earthquake Hazards Reduction Act of 1977, which created the National Earthquake Hazards Reduction Program (NEHRP), promoted research to mitigate hazards (including, on first enactment, a program to attempt to predict earthquakes). But this program is plagued by the usual gap between knowledge and actual policy, particularly outside California, where there is little planning at the state level and where building codes are usually not promulgated with earthquakes in mind.

**Table 4.1 Selected Legislation on Natural Hazards, 1950–2004**

<i>Year</i>	<i>Legislation</i>	<i>Summary</i>
1950	Disaster Relief Act of 1950, PL 81-875	Formalized existing practice allowing for funding to repair local public facilities.
1956	Federal Flood Insurance Act, PL 84-1016	Flood insurance program that never started because the House rejected funding for it.
1966	Disaster Relief Act of 1966, PL 89-769	Amended 1950 act to allow rural communities to participate; aid for damaged higher education facilities; repair of public facilities under construction.
1968	National Flood Insurance Act of 1968, PL 90-448	First flood insurance program, enacted as Title VIII of the Housing and Development Act.
1969	Disaster Relief Act of 1969, PL 91-79	Debris removal, food aid, unemployment benefits, loan programs revised; duration limited to fifteen months.
1970	Disaster Assistance Act of 1970, PL 91-606	Continues most provisions of the 1969 law, plus grants for temporary housing or relocation, funding for legal services.
1973	Flood Disaster Protection Act of 1973, PL 93-234	Expanded coverage, imposed sanctions on communities in flood zones that failed to participate in flood
1974	Disaster Relief Amendments of 1974, PL 93-288	Defined “major disasters” and “emergencies,” broadened categories of allowable expenditures. Served as template for most policy until the Stafford Act. In 1977 this act was reauthorized through 1980 (PL 95-51). Again reauthorized in 1980 (PL 96-568).
1977	National Earthquake Hazards Reduction Act, PL 95-124	Bill enacted to address concerns raised by Alaska and San Fernando earthquakes, among other events. Included provisions to support research on prediction and mitigation.
1988	Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-707	Amended Disaster Relief Amendments of 1974. Increased emphasis on mitigation.
1993	Stafford Act Amendments, 103-181	Enhanced 1988 law to emphasize mitigation.
2000	Disaster Mitigation Act, PL 106-390	Encouraged state and local hazard mitigation, required enhanced state and local mitigation planning.
2002	Homeland Security Act, PL 107-296	Made FEMA a part of the new Department of Homeland Security.
2004	Flood Insurance Reform Act of 2004, PL 108-264	Provisions to encourage owners of repeatedly flooded properties to accept buyouts or lose eligibility for flood insurance.
2004	National Windstorm Impact Reduction Act of 2004, Title II of PL 108-360	Created a National Windstorm Impact Reduction Program patterned after the earthquake program. This law is part of the earthquake program reauthorization.

Source: Based on May (1985), tables 2.2, 2.3, and 2.4.

Mitigation has traditionally received less attention than other aspects of disasters because of the routine pressures on government officials and citizens to deal with problems that are much more salient until there is a disaster (May 1985, 8; Rossi, Wright, and Weber-Burdin 1982). Once a disaster strikes, local officials and residents focus on relief and reconstruction and pay little attention to the next possible disaster. Of course, the rebuilding process is the best time for implementing mitigation measures, but paradoxically this is when mitigation tends to receive the least attention. Once reconstruction is under way, people tend to lose interest in mitigation, leaving technical experts to attempt, with varying levels of success, to keep the issue on the agenda. Their challenge is compounded by the absence of a social movement galvanized by the threat of natural disasters (Stallings 1995), making natural hazards policy a "policy without publics" (May 1990).

From the federal and perhaps also the state perspective, mitigation is a problem of local implementation. Intergovernmental policy implementation can be particularly challenging, especially when the national government fails to pressure local officials to keep mitigation on the agenda (Goggin et al. 1990). Once the immediate crisis has passed and communities return to something approaching "normalcy," the community moves on to other issues (Alesch and Petak 1986; Prater and Lindell 2000; Rossi, Wright, and Weber-Burdin 1982). Mitigation therefore fails to gain the attention that proponents of disaster policy would like to see. Indeed, this phenomenon is behind the federal government's requirements for state mitigation plans under the Stafford Act and for more stringent state and local mitigation planning under the Disaster Mitigation Act of 2000. The latter act reduces the availability of federal mitigation funds to jurisdictions that fail to do mitigation planning. One wonders, of course, how effective such a threat can be if local interest in mitigation is low at the outset. In short, interest in mitigation is institutionalized in the community of professionals who deal with disasters, but not more broadly in state and local government.

FEMA's shift away from preparedness for nuclear war and toward natural hazards relief and mitigation (Kreps 1990) was foreshadowed by the enactment of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. Before the Stafford

Act (which was further strengthened by the Disaster Mitigation Act of 2000), very little attention was paid to hazard mitigation across all hazards. The term is mentioned favorably a few times in the Disaster Relief Act of 1974, but mitigation took a back seat to efforts to organize federal disaster relief agencies. These efforts culminated in 1979 with the creation, through a reorganization plan, of the Federal Emergency Management Agency. Once FEMA was created, its effectiveness and sense of mission as an agency were not located firmly in natural hazards broadly or in mitigation in particular until James Lee Witt, former director of emergency management for Arkansas, was appointed FEMA director by President Clinton in 1993.

This is not to say that mitigation was solely Witt's idea; the original Stafford Act predated his arrival at FEMA and provided a new program for hazard mitigation under section 404. For mitigation projects, this section allowed the federal government to allocate a sum equal to 10 percent of federal moneys granted to states on "repair and restoration of facilities" following disasters (section 406). The mitigation funds, under a program called the Hazard Mitigation Grant Program (HMGP), went to states only if they had prepared a mitigation plan under section 409. Section 409 has since been repealed, replaced by a new planning regime under section 322 of the Disaster Management Act of 2000, in large part because there was little relationship between mitigation planning and actual mitigation projects. Section 322 requires that local as well as state governments prepare mitigation plans before they are eligible for both postdisaster mitigation funds (HMGP) and new predisaster funds made available in the 2000 act. Washington State was the first to draft a state plan, in 2004, and all states were required to submit their plans by November 1, 2004; these plans must be renewed every three years. States that fail to submit plans will lose their eligibility for "nonemergency" assistance under the Stafford Act, which would include HMGP funding. Local governments are also required to plan, at the risk of losing some funding if they fail to do so. Budget cuts during the Bush administration, however, have made this program potentially less effective than it might have been.

While the results of section 404/409 mitigation programs have not been as promising as their proponents had hoped, there have been some positive developments. In particular FEMA created a

Mitigation Directorate to manage the HMGP and to promote the idea of mitigation among state and local governments. But mitigation has not become a quantitatively important part of broader natural hazards policy; the amount of money spent on mitigation under section 404 from 1988 to mid-1996 was less than 2 percent of spending on general disaster relief. The details of why mitigation failed to become a serious element of natural hazards policy are too numerous to be recounted here. Godschalk and his colleagues isolate numerous factors: Communities needed to experience a disaster *before* getting HMGP funds, section 409 plans were often pro forma exercises unrelated to actual projects funded under section 404, and the projects funded with HMGP funds bore little or no resemblance to the state 409 plans (Godschalk et al. 1998). While the 2000 act provided for some predisaster mitigation, the amounts available were so small as to be relatively ineffective in promoting efforts that would mitigate moderate or large disasters.

From a learning perspective, it is most interesting that hazard mitigation funding under the Stafford Act is triggered by an actual disaster rather than by attempts to mitigate potential disasters. This policy design contradicts the scientific and technical consensus that mitigation should occur *before* disasters occur so as to reduce the ultimate costs of relief and recovery. Of course, the postdisaster phase would be a good time to try to draw attention to the importance of mitigation, even if experience shows that this is not what happens. Little changed in the Hazard Mitigation and Relocation Assistance Act of 1993, legislation passed in direct response to the flooding of the Midwest in 1993. The 1993 act did amend existing policy by providing a means for property owners in flood-prone areas to sell their property to state governments, which would then mitigate flood hazards. Even with an increase in HMGP money from 10 to 15 percent of federal relief per disaster, however, this act remained a postdisaster program, not the proactive predisaster program for which experts had lobbied.

The Stafford Act's shortcomings in mitigation led to the enactment of the Disaster Mitigation Act of 2000 (DMA, also known as the 2000 Stafford Act Amendments). This act is the first to develop explicitly a predisaster mitigation program for all natural hazards. It created the National Predisaster Mitigation Fund; states and

localities are eligible to apply for funds through a proposal process. Such funds may be used to (1) support effective public-private partnerships; (2) improve the assessment of a community's natural hazards vulnerabilities; or (3) establish a community's mitigation priorities. The 2000 act increased the amount of money available under the HMGP from 15 to 20 percent, although budget cuts since then have reduced funding for the program.

These efforts are important because mitigation planning yields tangible benefits (Burby 1994; Burby, French, and Nelson 1998; Dalton and Burby 1994). Indeed, a recent study by the Multi-hazard Mitigation Council of the National Institute of Building Services found that every dollar spent on mitigation yields four dollars in benefits (Multi-hazard Mitigation Council 2005). But mitigation requires more than federal action. States and local governments must be involved, and success requires broad cooperation among numerous stakeholders. With this in mind, the drafters of the DMA required local governments to develop *local* mitigation plans to complement state mitigation plans (Srinivasan 2003). This is particularly important if localities wish to receive predisaster mitigation funds made available by the DMA. In 2002 FEMA extended the deadline for the preparation of these plans to December 2004. Considerable challenges confront policy-makers who seek to change individual and community behaviors to mitigate disasters. Some political constituencies deny the need for more disaster mitigation efforts (Alesch and Petak 1986; Briechele 1999; Rossi, Wright, and Weber-Burdin 1982), or believe that traditional structural policies, such as the building of levees or other engineered solutions, are as effective as nonstructural mitigation in protecting lives and property.

Many of the activities called for in the DMA were consistent with FEMA's now defunct Project Impact (PI), which was created in 1997 to build public-private partnerships and broad local commitment to hazard mitigation. Few disasters tested the effectiveness of PI, however. The most often cited example of a disaster to strike a PI community was the 2001 Nisqually earthquake that struck near Olympia, Washington, and was felt in the western parts of Washington, British Columbia, and Oregon. The relatively small amount of damage done in Seattle was attributed to the success of PI and its very active and engaged local advocates (see, for

example, *Congressional Record*, March 1, 2001, S. 1742). This outcome buttresses findings in 2000 that

[w]ith respect to communitywide mitigation activities, the data . . . indicate that there has been an increase in the types of mitigation activities that are being undertaken. Improvement is particularly marked among communities that initially had not been as actively involved in mitigation projects. Structural and non-structural mitigation programs that are being undertaken include improving land use management, removing nonstructural hazards from buildings, developing and implementing tool lending programs, elevating structures, protecting lifeline facilities, and acquiring flood-damaged property (Tierney 2000, 2).

In short, PI seemed to be making headway toward encouraging local action in the mitigation of disasters. This program was created by FEMA, reaffirmed by the DMA, and yet the Bush administration killed the project in 2001, claiming that it was ineffective. Some members of Congress objected, in some cases strenuously, but their attempts to restore \$25 million to the program were defeated. The proponents of PI could point to little firm evidence of PI's effectiveness because the program was so new. Evidence that PI was moving in the right direction and was likely to increase disaster mitigation at the local level was not enough to save the project. FEMA terminated it rather easily, because it was an executive initiative of James Lee Witt rather than a congressional mandate and because few local champions of PI rose up with the same passion demonstrated by a very few members of Congress. The project died, and nothing was slated to replace it by September 11, 2001, after which emergency preparedness and management priorities changed so rapidly that arguments for a new PI-type project were overwhelmed by even stronger ones. Indeed, the combination of September 11 and FEMA's demotion to a subunit of the Department of Homeland Security has rendered FEMA's mitigation strategies much less potent than they were during the Clinton-Witt era.

Returning once again to the normative question, there is considerable evidence in the history of hazards policymaking that the idea of mitigation has been adopted and written into law. Whether this increased attention to mitigation has led to long-term changes

in behavior on the part of federal, state, and local officials is unclear. At this point it is safe to say that behavior has not been altered: The political benefits of immediate and plentiful disaster relief are much greater than the benefits of distributing the same amount of money in a more targeted way to mitigate the most pressing hazards.

There is substantial reason to believe that many gains made in natural hazard mitigation—both in terms of increased openness to the idea of mitigation and in actual mitigation policies—have been lost as FEMA and natural hazards programs across agencies have been overshadowed by efforts to address real or perceived “homeland security” threats. Even before September 11, 2001, it was clear that the Bush administration was unlikely to promote the sorts of mitigation measures that had proved during the 1990s to be effective in reducing damage. In 2001 FEMA administrator Joseph Allbaugh, visiting flooded communities in Iowa, upbraided Davenport, Iowa, for failing to build a floodwall to prevent flood damage: “Davenport officials bristled Tuesday at a remark made by Federal Emergency Management Agency Director Joe Allbaugh, who planned to visit the city Thursday to discuss the problem of continual federal bailouts for flood victims. ‘The question is: How many times does the American taxpayer have to step in and take care of this flooding, which could be easily prevented by building levees and dikes?’ Allbaugh told reporters” (Associated Press 2001). Davenport had chosen not to build a floodwall because of aesthetics and because of local officials’ belief that land-use planning would be more effective at mitigating natural disasters.

This incident demonstrates that the Bush administration’s attitudes toward hazard mitigation are less sophisticated and informed than those of Bill Clinton and James Lee Witt. Earthquakes and hurricanes are contained within a broader context of natural hazards policy that, since the enactment of the Homeland Security Act in 2003, has become part of an even broader context of homeland security policy. FEMA is a relatively small part of this picture. Earthquakes and hurricanes draw attention to larger questions in natural hazards policy and in emerging notions of “homeland security” as contained in the “all-hazards” approach to natural and humanly caused disasters. Given the new demands placed on local government for homeland security, and given

these governments' lack of resources to meet these demands, it is unlikely that the federal government will be able or willing to actively pursue more aggressive mitigation strategies in the future. Indeed, as Hurricane Katrina revealed, the Bush administration actually took steps to make FEMA and its mitigation programs less effective; at the same time, FEMA is less able to respond effectively to natural hazards than it was during the Clinton–Witt years.

### ***Earthquakes and Hurricanes on National and Local Agendas***

To assess the extent to which the national government learns from disasters, I considered the influence of these events on the national public agenda as measured by stories in the *New York Times*. Do these news stories discuss substantive policy matters (which are generally rarely covered by the news media), or do they focus on the most obvious objective features of the event—the magnitude of the earthquake, the category or wind speeds of the hurricane—without any particular reference to policy? Do natural disasters trigger coverage of the underlying scientific issues raised by an event—engineering, seismology, or meteorology, for example—which would suggest the possibility for learning to occur?

The results of the analysis of stories in the *New York Times* from January 1990 through October 2002 are shown in table 4.2. The contrasts between hurricanes and earthquakes are striking.

The first and most obvious difference is that coverage of hurricanes is much more event driven than coverage of earthquakes. Journalists cover hurricanes when one is imminent or has just struck. Typically, there is very little discussion about the science or the risk of a future event. Indeed, there is so little discussion of the potential risk posed by hurricanes that there was no reason to create a category for “stories about potential hurricanes” parallel to similar stories about potential earthquakes. The earthquake domain is full of stories about the possibility of bigger and more damaging earthquakes in the future. Many stories that are not directly about earthquakes—stories about where to locate nuclear power plants and other hazardous facilities, for example—address the risk of earthquake. Thus, while 46 percent of

**Table 4.2 Substance of Stories on Earthquakes and Hurricanes in the *New York Times*, 1990–2002 (percent)**

Topics	Hurricane			Earthquake		
	Any Event	No Event	Total	Any Event	No Event	Total
Damage	10	8	10	49	6	23
Future Threats	—	—	—	17	14	15
Mitigation	4	23	5	16	5	9
Objective Size	6	8	6	53	20	33
Preparedness	13	—	13	5	3	4
Recovery	28	—	27	29	2	13
Relief	14	—	14	17	1	7
Response	1	—	1	9	—	4
Science	4	46	6	19	14	16
<i>N</i>	363	13	376	135	210	345

*Note:* Totals may exceed 100 percent because stories overlap categories.

stories about hurricanes not written about an actual hurricane are about science—primarily about the forecasting of hurricanes—this represents only six stories, as compared to twenty-nine stories about the science of earthquakes when there is no event on the agenda. And when a hurricane is on the agenda, the science of hurricanes—how they form, why they are hazardous, how they are forecast—receives far less attention than the science of earthquakes does in earthquake stories; recent earthquakes actually trigger slightly greater discussion of scientific matters.

*New York Times* coverage of earthquakes focused more on the damage done than coverage of hurricanes did. This may have something to do with the different features of the two types of disaster: Almost all earthquakes do considerable damage, while a hurricane can pass by without doing much damage or can veer off without causing any damage at all. Proportionally, there are more stories about hurricane preparedness than about earthquake preparedness, because hurricanes can be more accurately forecast, their progress tracked day by day and hour by hour. Earthquakes