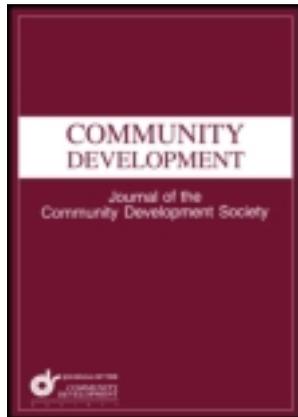


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Community responses to disasters: a foundation for recovery

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Community responses to disasters: a foundation for recovery

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Disaster recovery programs and policies are becoming even more important with the increase in numbers and frequencies of disasters and their widespread damage. This special issue examines approaches and recovery methods that have succeeded and identifies common elements. The authors in this volume note several key ingredients including collaboration among agencies providing services to disaster victims, educating residents about potential hazards and how to adequately prepare for them, and developing a coordinated set of public policies that can be communicated. Likewise, engaging in sound community development practices involving interactions among those affected is vital to successful outcomes. Recognizing the key roles that special groups such as the elderly can play in recovery efforts is also important as is building on customs and traditions in developing countries. The research in this volume adds to the literature on disaster recovery approaches and can help policymakers to build local capacity and remediate the impacts of disasters in the future.

Keywords: emergency preparedness; natural resources; regional development

Introduction

Throughout the history of recorded human existence, civilization has documented its existence as communities (Brint, 2001; Toennies, 1957). Communities of place exist in socio-ecological context and are held together by norms, values, and mores (Durkheim, 1911). It is through the development of strong social ties that communities withstand challenges from inside and outside. Some of these challenges emerge from war, conquest, and by natural and man-made disasters. Communities and societies are torn apart by tumult while others are galvanized and solidified by these experiences (Kaniasty & Norris, 1993).

In some cases, communities are physically destroyed to the point that they cease to exist such as the city of Pompeii in AD 79. Destroyed and buried by an eruption of ash from Mount Vesuvius, the city was lost to civilization until it was rediscovered in 1748. In more recent times, the Chernobyl nuclear disaster of 1986 is classified as the worst nuclear disaster. Located near the city of Prypiat in the former Soviet Union, Chernobyl sent a radioactive cloud across Eastern Europe. Some of the greatest

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impacts were felt on the communities in the region (Marples, 1988) as communities were abandoned because of the immediate explosion and later the high levels of radiation. Many of these communities have not, and will not, be repopulated due to the current radiation nearly 25 years later (Jaworowski, 2010).

The region surrounding the area affected by the 2011 earthquake, tsunami, and resulting nuclear meltdown at the Fukushima Nuclear Facility faces a similarly bleak future (Yamashita, 2012). Not only have the physical communities been forever displaced, so too have the communities of interest, the social bonds, and their existence as communal areas of social interaction has been forever altered (Edelstein, 1988).

Defining equilibrium and bifurcation

The socio-ecological, economic, and environmental futures of these communities and others inextricably linked to natural and man-made disasters will be determined by their ability to return to a sense of community stability and system equilibrium (Harvey & Reed, 1997). Borrowing a theoretical concept from physics, bifurcation theory suggests that events happen to systems that cause them to breakdown and fall from equilibrium (Briggs & Peat, 1989; Gleick, 1987). Sellnow, Seeger, and Ulmer (2002) argue that the chaos caused by natural disasters is, in essence, a point of bifurcation, altering the ability of a community to communicate, interact, and therefore exist in a manner prior to the onset of the disaster. An expectation of linear, normalized reaction to or recovery from a disaster does not reflect the reality of the chaos. The bifurcation that accompanies a disaster or series of disasters requires a community/region to adapt to a new reality reflecting the socio-ecological conditions after a disaster(s). While some communities readily return to a sense of equilibrium, many are irreparably damaged or even cease to exist.

The destruction of equilibrium

Numerous studies have examined groups' attempts to reorganize communities after disaster causing points of bifurcation. Peacock et al. (2011) assess the socio-historical vulnerabilities of Galveston, TX. Prior to 1900, Galveston was a growing city of more than 37,000 residents. Located on the Gulf of Mexico, Galveston was one of the state's primary tourist and shipping hubs when in September 1900, a Category 4 hurricane slammed into the Gulf Coast close-by. Estimates range from 6000 to 12,000 deaths associated with the storm. The island and surrounding cities were inundated with a storm surge of nearly 16 feet of water, surpassing the previous record of just over eight feet.

After the storm, much of Galveston was evacuated while recovery efforts began. Based on the impacts of the storm, the city undertook numerous efforts to reestablish normalcy and a sense of equilibrium. The city was actually raised in elevation by 16 feet; a seawall was put in place to act as a barrier to future storm surges; and the city undertook a huge rebuilding effort (Texas Almanac, 2012). Despite these Herculean efforts, the city did not regain its position of economic prominence held prior to the storm. Census estimates place the population of Galveston in 2010 at slightly more than 47,700 (U.S. Census Bureau, 2012a). This is in contrast to Houston which in 1900 had a population of 44,600 but in 2010, had grown to more than 2 million residents (U.S. Census Bureau, 2012b).

Buffalo Creek Hollow, West Virginia, is another community devastated by disaster (Erikson, 1976). However, unlike Galveston, TX, Buffalo Creek's demise came from poor mining practices. On 26 February 1972, Buffalo Creek Hollow was decimated when a slurry dam operated by Pittston Coal Company gave way. The 30-foot wall of water, mud, and debris destroyed 16 communities in Buffalo Creek Hollow. More than 5000 people were affected by the disaster which destroyed homes, businesses, and generations of social networks. According to researchers such as Erikson (1976), Lifton and Olson (1976), and Green et al. (1990), the social reorganization of communities in the region caused long-term disruption to social networks, economic viability, and physiological and psychological stability of affected residents. Buffalo Creek Hollow's point of bifurcation proved to terminate many of the Hollow's communities. Other examples of communities affected by natural and man-made disasters include Bhopal, India (Trotter, Day, & Love, 1989; Upendra & Thomas, 1986), the Asian Tsunami of 2004 (Rajkumar, Premkumar, & Tharyan, 2008), and the Deep Water Horizon explosion and oil spill (Goldstein, Osofsky, & Lichtveld, 2011; Solomon & Janssen, 2010).

Not all residents feel the effects of disasters equally. Likewise, the recovery from these events is not equitable. Race and class play significant roles in the social differences in human responses to disaster (Elliot & Pais, 2006). Women and minorities are significantly less likely to be able to adequately prepare for and react to disasters than men and white residents (Cutter et al., 2006; Enarson, Fothergill, & Peek, 2006). The elderly are equally as likely to suffer greater impacts from exposure to disasters (Durant, 2011). The residents' bases of equilibrium are more vulnerable given the susceptibility to the impacts of hazards associated with significant bifurcations (Cutter and Emrich, 2006). Therefore, it is necessary that responses to disasters be equally diverse based on available resources and needs of the populations affected.

Recovery, restoring, and redefining equilibrium

Society operates on the basis of norms, values, and traditions. There is ample evidence of the impact of natural disasters on the social system in which societies exist. Gordon (2004) argues that these bifurcations create social disruption, thereby degrading quality of life and undermining the fabric of community. This "social disconnection or 'de-bonding' (Gordon, 1991, 2004) accompanies a profound disruption of physical, emotional and social life" (Norman, 2004, p. 72). The pervasiveness, completeness, and duration vary by situation thereby impacting the severity of the bifurcation. It is possible that in cases of severe bifurcation, potentially new norms, values, and traditions will emerge. It is necessary, therefore, to reassess the ties within the societies prior to and after disasters, to improve our understanding of the mechanisms that can restore equilibrium through recovery.

Mitigation planning – maintaining equilibrium in future disasters

Eisenman, Cordasco, Asch, Golden, and Glik (2007) discuss the roll of disaster planning and the necessity of communicating risk with vulnerable communities. Specifically, the authors argue that communities must take a threefold strategy to deal with disasters. First, they must sufficiently plan and mitigate risk associated with the disasters through effective planning. This includes creating and implementing

policies and practices that will enable disaster risk mitigation and post-disaster response.

Second, the risks inherent to a region must be sufficiently communicated to residents so they can participate in the recovery. Residents must be given the information necessary to make effective decisions prior to the onset and in the event of a disaster. Third, the communities must be provided with the mechanisms necessary to protect themselves and the ability to meet their needs prior to and after a disaster has occurred.

The greatest sources of stabilization will emerge in those societies that have been adequately prepared. A large body of literature cites the integration and mobilization of community capitals as a predictor and facilitator of homeostasis (Cutter et al., 2006; Lukensmeyer, 2007; Marcello, 2009; Pyles & Cross, 2008; Wyche et al. 2011; Zekeri, Wilkinson, & Humphrey, 1994). Likewise, much of the social science research in the studies of disaster recovery during the past 20 years has focused on community and asset-based strategies designed to promote civic engagement of all segments of the community (Durant, 2011; Gordon, 2004; Kaniasty & Norris, 1993; Livingston, 2006; McBride, Sherraden, & Pritzker, 2006; Theodori, 2001, 2005). Therefore, it is important to examine innovative approaches and strategies for disaster planning and mitigation.

Highlights of findings

The articles in this special issue offer many insights into effective programs for disaster recovery. In one way or another, the articles build on ways to improve the community capitals but each brings a different perspective to the discussions partly because they study regions with different social institutions, cultures, and traditions. The articles weave an interesting fabric that shows ways to build assets and capacity in communities that have undergone major turmoil because of natural disasters. The articles make several key points in the discussions.

First, recognizing and engaging various groups and traditions within the economy and linking important population segments using local cultural advantages or norms are keys to effective disaster efforts. Working in the aftermath of major wars and conflicts, McIntyre-Miller examines how Sierra Leone was able to rebuild using four main elements: inclusive involvement of community members in development and construction projects; culturally responsive practices in building community; directly connected local leadership; and incorporating traditional and local development practices with proven strategies from other areas. While the effects of war and conflict are not the same as those involving natural disasters, the resulting turmoil and destruction have many similarities.

Involving groups in the communities playing an active role in designing strategies and projects was a key in rebuilding the two communities studied in Sierra Leone. These residents understand best not only what is needed but also what is most likely to succeed. An important group in Sierra Leone was the tribal leaders and chieftains whose considerable influence affected the shape of the recovery. The importance of locally built and locally run programs is clear.

Incorporating cultural ceremonies and local traditions also had a positive effect on the outcomes. These traditions emphasize the importance of building trust and stability among disaster victims as well as between victims and providers. The

chieftains not only interjected a sense of safety and security in the development process but they were in a position to settle disputes among residents.

A second important component identified by authors in successful recovery is to create a setting in which local and/or external agencies and residents work together and communicate according to overall agreed-upon aims rather than allowing rigid organizational goals or procedures to block the recovery progress. Using Norris, Stevens, Pfefferbaum, Wyche, and Pfefferbaum (2008), Onstad examined community efforts based on community resilience theory as well as recommended strategies advocated by the National Voluntary Organizations Active in Disaster recovery model. The study emphasizes the importance of recognizing the capacities of residents and businesses to adapt to conditions created by a disaster and being flexible in working with agencies involved in recovery efforts.

For example, residents expressed frustrations with bureaucratic decisions by external agencies that, in some instances, caused actions which, overall, may not have promoted efficient recovery efforts. Likewise, groups with limited connections and influence in the community were marginalized in the recovery efforts. The resilience of a community, however, depends on the flexibility of residents as well as the flexibility in regulations and procedures of local and external recovery assistance agencies.

A third essential component in successful recovery outcomes identified by authors is to recognize and understand essential linkages that a community needs during a recovery process. Building or strengthening these linkages hastens the recovery as well as increases the outcomes. Stofferahm examines recovery efforts in Northwood, ND, using the Community Capitals framework with special attention paid to the spiraling up processes that occurred. Of special note is the importance of cultural capital in starting the process. In turn, it triggers increases in political capital leading to the financial capital base and then the built or physical capital essential to the successful replacement of the infrastructure. The Northwood experiences clearly document the interconnectedness of the capitals and how using then in a disaster recovery effort can facilitate redevelopment.

A major component of the cultural capital in Northwood was the strong ethnic background and homogeneity of the population. The Norwegian heritage facilitated interactions within the community enhancing trust and confidence by residents in decisions by elected officials and community leaders. This trust strengthened the interactions among participants in the recovery process ultimately lead to major successes in the recovery efforts. Thus, rather than immediately turning to seeking financial capital to start a recovery process, the cultural capital in the community should be recognized with potential links to political and other capitals that facilitate building the financial base and other community characteristics essential to successful recovery processes.

Recognizing and understanding the impacts of disasters on special groups such as elderly residents as well as the roles that these residents can play in designing and implementing recovery programs is important and will become even more so with the increase in number of retirements by the Baby Boomer population. This age cohort is healthier, has been retiring at a younger age, and has more resources than previous generations. These characteristics allow them to take more active roles in disaster recovery programs and often with a greater stake in the outcomes because of their wealth. At the same time, many elderly are incapacitated because of illness especially the advanced elderly and sometimes without the financial resources to take care of

themselves. These groups require special consideration in the recovery process or can become marginalized.

Thus, in assessing human capital resources within an area hit by a disaster, one must pay special attention to the elderly population not only for reasons mentioned but also because they are the most vulnerable populations and the group least likely to leave the region in the post-recovery period. Using an index of engagement involving meeting attendance and participation to survey elderly residents in Jackson County, MS, following the Katrina Hurricane, Hales assesses obstacles faced in civic engagement and ways to involve these groups more effectively in recovery processes.

Contrary to the view that elderly are not engaged in community issues, survey responses show that these residents are motivated to participate in the disaster recovery activities mainly because of interest in the community. Not surprisingly, they identified housing, crime, health and healthcare, substance abuse, and related social concerns as main topics of interest. In some instances, survey respondents expressed a significant interest in participating in local initiatives.

Wealthier residents are more likely to be involved than the less fortunate partly because they may have more time and resources to invest. Age of respondent is not related to engagement. In some cases, communication with this age group was an obstacle during the recovery efforts and respondents reported that being unaware of meetings or health reasons prevented their participation.

Hales then examines obstacles faced in working with elderly residents. Transportation was identified as a serious issue as was communicating about opportunities to be engaged in recovery efforts. These difficulties suggest that coordinators may find it useful to work with intermediary agencies such as churches, service clubs, and neighborhood organizations to mobilize elderly populations and encourage participations opportunities.

Motivating residents in the recovery process is crucial to its success. Several articles in this volume address this topic in various ways mainly in the context of developed countries. However, in other environments, an entirely different set of local conditions exist that can complicate both the ability and willingness of groups to participate in the processes. Studying the responses in three coastal villages in India following the Tsunami in 2004, Chandrasekhar identifies four main issues that must be addressed: stakeholder power, legitimacy, trust, and urgency for action.

An analysis of responses in the coastal villages suggests several findings. Residents may influence decisions through direct and active participation in meetings and other events. Likewise, there are groups who work through other avenues to impact decision outcomes by not participating directly in organized events. Thus, designing effective recovery policies requires an understanding of motivations for each type of involvement – direct or indirect.

Another finding is that the power, legitimacy, trust, and urgency for action may change during the recovery process causing the importance of each to shift and change behavioral responses. Urgency for action may motivate residents initially but be somewhat replaced by the importance of power or trust as immediate needs are met.

Also important is that the motivations for action do not necessarily operate independently; rather they interact to trigger participation and involvement by respondents. In designing a recovery response, managers must recognize these interactions as well as the fact that recovery issues have both short-term and long-term aspects. Different strategies for engaging residents apply in each case. In the

short-term, direct appeals to established agencies and/or personnel may be most effective while, in the longer term, meetings with affected groups to understand their motivations and capacity to influence decisions will become more important in designing effective processes.

While many, if not most, natural disasters have a relatively short warning with an immediate impact, others are less certain and have a longer anticipation with time to adjust behaviors. These longer-term trends allow time for behavioral adjustments that, in turn, can affect the level of damage likely to occur. Predictions of pending future disasters, however, are often debated and lead to variations in responses. Drolet examines the impacts of early signs of climate change on behaviors of residents in small cities and rural communities in British Columbia as well as how they have tried to adapt in response to these threats. A qualitative analysis of interviews with focus groups and individuals provides a detailed picture of the impacts on residents and how they have changed aspects of their daily lives. Of special interest are ways in which residents shifted their approaches to local food production and the challenges they have or will face with environmental changes.

Drolet calls for more sustainable economic and social development policies especially in regions and communities likely to be most affected by climate changes. Special attention is paid to encouraging innovative and informed actions by residents regarding food production. Coherent and consistent policies are needed by multiple levels of government to encourage local producers to improve food security for residents, especially the disadvantaged. Public–private partnerships are essential in working with residents to respond to climate changes. Social work practitioners have an especially strong role to play in policy formation and implementation because they regularly work with vulnerable groups.

A new value proposition for community investment

The incidence and devastation of natural disasters has increased in recent years which means that society governments, and society in general, must engage in new approaches to manage both the devastation and the recovery. One example is the recent drought conditions hitting many countries, thereby threatening the security of the food supply in many areas.

In a commentary, Calvin traces out major policy approaches used to coordinate recovery efforts and summarizes the basic literature on this topic. He also asks about new strategies and approaches that will be needed to work with disasters in the future and reinforces the call for better preparedness but also indicates the importance of strong community participation in designing strategies and disaster planning. Of special importance is to recognize the differences between technical issues and adaptive issues which are not always completely understood.

Calvin goes on to stress the importance of engaging both the private and public sectors in disaster recovery planning so as to trigger private investment in rebuilding community. While the private sector is likely to sustain major damage during a disaster, not always has this sector been made part of the recovery process which is essential to having them invested in the outcomes. Making the private sector a key component in the recovery means collaboration among various service providers, businesses, public agencies – Federal, state, and local, as well as international agencies in many cases. This collaboration, while seemingly obvious, can be difficult

to achieve sometimes when the mission and regulations of each agency differ. Several authors in this volume addressed this issue and recognize its importance.

Summary

Natural disasters can wreak havoc or destroy communities and can be expected to continue in the future, perhaps even with more frequency. From society's perspective, preparation and a timely, coordinated approach during the recovery are vital to success. The articles in this volume address many aspects of disaster recovery to help policymakers and community leaders understand not only how to mitigate the disaster but also how to organize an effort within the communities that yields the highest chances of a successful recovery. There are many examples of differences in outcomes because of ways that communities approach the process. Some of these are described in this special issue and can guide decision-makers about effective ways to proceed.

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