Community Resilience: A Social Justice Perspective

CARRI Research Report 4
COMMUNITY RESILIENCE: A SOCIAL JUSTICE PERSPECTIVE

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One of the commitments of the Community and Regional Resilience Initiative (CARRI) is to understand what resilience is and how to get there, based on research evidence.

As one resource for this effort, CARRI has commissioned a number of summaries of existing knowledge about resilience, arising from a number of different research traditions. This paper is one in a series of such summaries, which will be integrated with new resilience explorations in several CARRI partner cities and with further discussions with the research community and other stakeholders to serve as the knowledge base for the initiative.

For further information about CARRI’s research component, contact Thomas J. Wilbanks, wilbankstj@ornl.gov, or Sherry B. Wright, wrightsb@ornl.gov.
COMMUNITY AND REGIONAL RESILIENCE INITIATIVE

Oak Ridge National Laboratory’s (ORNL) Community and Regional Resilience Initiative (CARRI) is a program of the Congressionally funded Southeast Region Research Initiative. CARRI is a regional program with national implications for how communities and regions prepare for, respond to, and recover from catastrophic events. CARRI will develop the processes and tools with which communities and regions can better prepare to withstand the effects of natural and human-made disasters by collaboratively developing an understanding of community resilience that is accurate, defensible, welcomed, and applicable to communities across the region and the nation.

CARRI is presently working with three partner communities in the Southeast: Gulfport, Mississippi; Charleston/Low Country, South Carolina; and the Memphis, Tennessee, urban area. These partner communities will help CARRI define community resilience and test it at the community level. Using input from the partner communities, lessons learned from around the nation, and the guidance of ORNL-convened researchers who are experts in the diverse disciplines that comprise resilience, CARRI will develop a community resilience framework that outlines processes and tools that communities can use to become more resilient. Of critical importance, CARRI will demonstrate that resilient communities gain economically from resilience investments.

From its beginning, CARRI has been designed to combine community engagement activities with research activities. Resilient communities are the objective, but research is critical to ensure that CARRI’s understanding is based on knowledge-based evidence and not just ad hoc ideas—we want to get it right. To help with this, CARRI has commissioned a series of summaries on the current state of resilience knowledge by leading experts in the field. This kind of interactive linkage between research and practice is very rare.

In addition to its partner communities and national and local research teams, CARRI has established a robust social network of private businesses, government agencies, and non-governmental associations. This network is critical to the CARRI research and engagement process and provides CARRI the valuable information necessary to ensure that we remain on the right path. Frequent conversation with business leaders, government officials, and volunteer organizations provide a bottom-up knowledge from practitioners and stakeholders with real-world, on-the-ground, experience. We accept that this program cannot truly understand community resilience based only on studies in a laboratory or university. CARRI seeks to expand this social network at every opportunity and gains from each new contact.

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LIST OF RESEARCH PAPERS BY NUMBER


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1. RESILIENCY, SUSTAINABILITY, SOCIAL JUSTICE, AND ENVIRONMENTAL JUSTICE

Let’s agree that some individuals, families, communities, and regions are less resilient to the impact of environmental or technological hazards. There are many different definitions of resilience. For this project, a resilient community is defined as “one that anticipates problems, opportunities, and potentials for surprises; reduces vulnerabilities related to development paths, socioeconomic conditions, and sensitivities to possible threats; responds effectively, fairly, and legitimately in the event of an emergency; and recovers rapidly, better, safer, and fairer” (Wilbanks 2008). While much of the focus in disaster reduction has been on better understanding the hazard and how its physical forces can be resisted, there is increasing recognition that a larger, more complex part of the equation lies in the way in which societies are organized. While a vulnerability/resilience paradigm has largely replaced a hazards approach in the social sciences and emergency management communities, it has achieved less recognition among physical scientists and policy makers (Haque and Etkin 2007). However, interest appears to be increasing (see, for example, Laska and Morrow 2007).

A social vulnerability framework emphasizes that risk varies not just according to the hazardous agent but is distributed among the impacted population and communities according to larger social forces, particularly those affecting the allocation of resources, such as the power to determine where a levee is built, or financial resources to afford a safe home. Understanding the social and political context is a vital first step in mitigating the effects of hazards (Mitchell et al. 1989).

Is environmental safety a basic human right, or are some people and places more deserving of security and well-being? To what extent is there a political responsibility to promote resilience? How do cultural and social factors increase vulnerability? How can these factors be addressed? How much responsibility rests with individuals and communities, and how much depends on outside forces beyond their control? How can vulnerable groups be empowered to improve their safety and security? How can their strengths be optimized? What other benefits are derived from increased community resilience? This paper addresses these questions but falls short of finding easy answers.

A brief discussion of different perspectives and terms, and their relationship to economic development, is followed by a description of social vulnerability and its dimensions. Various factors that promote social vulnerability, such as poverty, minority status, gender, age, and disability, are then discussed and examples from historical disaster events are used to illustrate their saliency. The paper then suggests ways to promote social resilience among vulnerable groups followed by a summary of how resilient communities are also associated with a higher quality of life.

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2 Two national reports provide overviews of the social dimensions of disasters: Facing Hazards and Disasters: Understanding Human Dimensions published by the National Research Council and Human Links to Coastal Disasters from The Heinz Center.
1.1 Different Perspectives

A good starting point is to examine how various disciplines and theoretical perspectives define and use relevant terms such as resiliency, sustainability, social justice, and environmental justice. The contradictions and commonalities serve to highlight some of the issues and complexities involved in discussing resilient communities.

Resilience has been referred to as the ability to absorb changes or disturbances (Handmer and Dovens 1996; Adger et al. 2005), to cope with potential impacts (Klein et al. 1998), and to survive (Nicholls and Branson 1998). Basically these are saying the same thing. Changes in the environment, whether gradual (such as climate change) or more abrupt (such as hurricanes) or immediate (such as a terrorist attack), require actions to mitigate their negative effects. These actions can come in anticipation of risk, in reaction to impacts, or in recovery from the effects. Resilience requires (1) knowledge of the hazard; (2) accurate perception of the risk; (3) understanding available alternatives; and (4) the resources and flexibility to respond successfully. These factors are not spread equally through societies. Rather, their distribution is largely determined by social and economic forces, many outside the control of much of the population. As quoted in the first paragraph, for purposes of framing this project, resilience is defined broadly to include not only the concepts of planning and vulnerability reduction through development and socioeconomic conditions but also the concepts of fairness and legitimacy.

Resilience can be categorized into several types. Physical resilience refers to the strength to deal with an impact (such as the ability of a house to withstand high winds or the physical health of an individual to survive a disaster). The robustness and diversity of the economy to survive and recover from a disaster defines its economic resilience. Biologists refer to ecological resilience. Of most significance to this paper is the concept of social resilience, sometimes referred to as socio-economic resilience.

Social resilience describes abilities within human societies to adjust to change, particularly “to absorb recurrent disturbances such as hurricanes and floods so as to retain essential structures, processes and feedbacks” (Adger et al. 2005, p. 1036). At the community level, it is closely tied to the economic and political circumstances of a community, as well as to the strength of its social institutions and social networks. At the individual or household level, resilience is associated with not only economic resources but also cultural resources, such as literacy and education, and social resources, such as family and friends (Heinz 2002).

The term sustainability is related to resilience and usually describes some aspect of maintaining resources, from the environment to the quality of life, over time. In a disaster context, it refers to the ability of “a locality to tolerate—and overcome—damage, diminished productivity and reduced quality of life inflicted by an extreme event without significant outside assistance” (Mileti and Gailus 2005, p. 498). In essence a disaster is a signal of the failure of a society to adapt to its environment (Oliver-Smith 1996). Resilience and sustainability are related; it can be argued that disaster resilience promotes sustainability (Geis and Kutzmark 1995).

The resources of a society, including sustainability and disaster resilience, are never equally distributed, although certainly more so in some societies than others. The terms environmental justice and social justice are used by different disciplines to discuss these distributive issues. The environmental justice movement focuses on inequities in the geographical distribution of

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1 In contrast, the term resistance usually implies the ability to stop or resist change.
2 Similarly, vulnerability can be categorized in various ways. In the Heinz Center study on Human Links to Coastal Disasters, vulnerability was organized as biophysical, built and human.
hazards and risk. In particular there is convincing evidence that minority households are more likely to be exposed to environmental hazards, both natural and technological (Cutter 2001). The Hurricane Katrina disaster in New Orleans provided a vivid example of class and racial differences in geographical “safety of place” (Hartman and Squires 2006; Jones-DeWeever and Hartmann 2006). There is an ongoing environmental justice movement to influence the reconstruction of New Orleans toward greater racial and environmental justice (Pastor et al. 2006). Human values ultimately determine which geographical areas are worth investing in and “the environmental justice framework seeks to prevent environmental threats before they occur” (Bullard 2007, p. 153). Environmental justice argues for “the meaningful involvement of all people” in how the environment is used (such as what land gets developed or where and how levees are built), as well as equal rights to a healthy and safe environment (Dobson 1999).

The social justice movement comes out of a slightly different perspective but shares a similar focus on the distribution of benefits and burdens. It argues that we need to think about sustaining a good quality of life across populations, not just for the future but also in the present (Dobson 1999). It goes beyond environmental issues, arguing for the equal rights of all segments of society to meet their basic needs and advocating for greater social and economic equality (Foley 2004). This implies a systemic change in the way in which we measure progress and the quality of life.

1.2 Cross-Currents

It can be argued that a truly sustainable community is impossible without environmental and social justice. Indeed, these concepts are implied in the broad definition of resilience adopted for this project. Similarly, the definition acknowledges the important relationship between economic development and resilience. Much economic development today seeks short-term benefits for a few and occurs at the expense of environmental protection and social justice, and it does not promote sustainability. Indeed it can be argued that it is only when economic growth, environmental protection, and social equity overlap that we achieve sustainability (Figure 1). In this context variations in disaster resilience are not aberrations but signals of the failure of mainstream economic development (Wisner et al. 2004).

Community resilience cannot be achieved when large disparities exist in the distribution of resources such as housing, job security, and the funds needed to respond to disruption and change. Those with less robust social resources such as family, friends, and social networks will also be at a disadvantage, as will members of groups and neighborhoods lacking political power. These risk factors are typically linked together under the concept of social vulnerability.

2. SOCIAL VULNERABILITY

Social vulnerability is a catchall phrase that has become part of the discussion related to how social and cultural conditions place some at higher risk to environmental impacts such as climate change or natural hazards. Simply stated, social vulnerability occurs when unequal exposure to risk is coupled with unequal access to resources (Bolin with Stanford 1998). Social structures systematically discriminate against the socially, culturally, and economically marginalized (Mustafa 1998). The effects increase vulnerability, or potential for loss, at all levels of society—from individuals to communities to nations.

It is nearly impossible to separate economic factors from social factors; that is, poverty and social inequalities coexist. Thus, it is useful to include economic vulnerability as part of the social vulnerability discussion. The following section highlights how specific risk factors influence vulnerability. However, it is important to note that economic, political, social, and even geographical vulnerabilities tend to cluster in ways that place certain segments of society at critical levels of risk. The extent to which social vulnerability exists within a community will affect its level of resilience.

2.1 Risk Factors

Economic Status. It is not necessary to belabor the point that sufficient economic resources are essential for appropriate response to change or hazards. The extent to which people have sufficient resources to meet their basic needs and to anticipate and respond to inevitable change and disruption is a core factor in resiliency and varies considerably among communities and nations. When significant segments of the population are poor and live with daily risk and insecurity, it is out of the question to expect them to be able to anticipate and respond to external changes and threats effectively without outside assistance. Poor households are more likely to be located in floodplains, to live in substandard housing often in disrepair, and thus to be more vulnerable to natural hazards. It is unlikely that poorer households will have the extra funds available to prepare for an emergency, or the transportation to evacuate when appropriate. Poor neighborhoods and communities do not have the infrastructure and resources to assist residents during crises. Poorer states are not as well organized and equipped to provide impact and recovery services.

While remaining a relatively affluent nation, the United States has the highest, or near-highest, poverty rates for children, individual adults, and families among 31 developed countries (Luxembourg Income Study 2004). Nearly 37 million people live at or below the poverty rate, and 43% of these (nearly 16 million) Americans are now living in deep or severe poverty. The middle class has also experienced decreases in income and in the buying power of

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1 A family of four with two children and an annual income of less than $9,903—half the federal poverty line—was considered severely poor, as were individuals making less than $5,080 a year.
their money. The median household income of working-age families, adjusted for inflation, has fallen for 5 straight years (Pugh 2008).

High poverty rates and decreasing income levels affect community resilience in obvious ways. Rising housing costs (including taxes and insurance) have made homeownership out of the question for many. As mentioned previously, renters have less control over the safety of their housing. Homeowners are finding it increasingly difficult to hold onto their homes due to rising costs of mortgages, utilities, insurance, and taxes.

It is important to note that this change in the poverty level has occurred at a time when overall economic growth has been at a record high. In real dollars, the Gross Domestic Product (GDP) has tripled since 1960 but wages have not, and for lower education workers they have actually decreased (News Batch 2007). Unprecedented increases have occurred at the top, accompanied by decreases for the vast majority. Currently the top 20% now receive over half the country’s income, and the top 5% own nearly 60% of the nation’s wealth.

It can be argued that some level of inequality is inevitable even in modern societies, but the United States now leads developed nations in income inequality. “The U.S. is an outlier among rich nations, only Russia and Mexico, two middle-income economies, have higher levels of inequality” (Brandolini and Smeeding 2007). The Census Bureau uses a statistical measure known as the “Gini” index to measure income inequality. This index illustrates a dramatic increase in inequality over a 25-year period (Figure 2).


With growing income inequality comes growing inequality in disaster resilience. One effect of rising inequality is increased polarization based on social class. At the same time that an impoverished “underclass” has grown, and that so many middle class families are struggling to maintain their lifestyle, conspicuous consumption has increased among the wealthy (Figure 3). The increase in gas-guzzling SUVs and luxury cars and the over-development of environmental sensitive areas with luxury housing provide visible evidence of unsustainability. Not only does this affect the physical environment, it has detrimental effects on the social environment. Economic insecurity helps drive prejudices against the poor, particularly minorities and immigrants. Public attitudes make it difficult to develop policies and programs to address social inequalities.

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6Perfect equality in income distribution = 0. Perfect inequality in income distribution (one person owns all the wealth) = 1.
issues, including affordable safe housing, public transportation, and other resources that contribute to resiliency.

**Political Power.** Another risk factor has to do with the position of any segment of the population within the larger political environment. The power to affect decisions, such as those related to economic development, the use of public resources for infrastructure development and services, and the location of environmental and technological hazards, largely determines which communities and households are most vulnerable. Some individuals and groups will garner greater respect and thus more influence in the community. Homeowners, for example, will have greater control over community decisions than renters. Any attribute can be used to discriminate against a given individual or group. Any individuals or groups that are marginalized, whether by poverty, gender, minority status, or disability, are likely to be more vulnerable when it comes to dealing with unexpected events.

Many assume that only the rich live along our coasts. While this is true of prime property on highly desirable beachfronts, many coastal areas vulnerable to tropical cyclones and flooding are inhabited by people who depend on the water for their livelihoods in industries such as fishing and tourism. Their voices are seldom heard when political decisions are made related to coastal development, flood control, and other decisions affecting their environment and vulnerability. Similarly, landfills, toxic waste depots, and hazardous industries are most often located in areas inhabited by those with the least power in the political process, such as minorities and the poor (Cutter 2001). It is not surprising that the death rate for African Americans from asthma is twice that of whites (American Lung Association 2007).

The importance of political power becomes most obvious during the recovery period after a disaster. Official federal disaster declarations (and the subsequent dedication of resources) occur more often in the most powerful states irrespective of the level of impact (Platt 1999). One need only compare the federal response to the 2004 hurricanes in Florida to what occurred after Hurricane Katrina in Mississippi and Louisiana to illustrate how political influence impacts the process. Political power is closely associated with economic status (Logan and Molotch 1987). More affluent, and thus politically powerful, neighborhoods are the first to receive public services after a disaster. The interests of businesses tend to be served before social services are restored. Poorer neighborhoods are more likely to flood and less likely to have debris cleared and services restored in a timely manner.

During reconstruction, political and economic power determines what is rebuilt and where (Vale and Campanella 2005). Former residents of poorer areas will have less power over the

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**Figure 3.** Comparison of luxury consumption growth with overall consumption growth. *Source:* NewsBatch, www.newsbatch.com/econ.htm.
process of determining what gets rebuilt. Opportunists may welcome the opportunity to reshape an area destroyed by a traumatic event such as hurricane or war, a process that has been referred to as “disaster capitalism” (Klein 2005). This reduces the likelihood of lower income residents, often minorities, being able to return to affordable housing in their old communities, as evidenced most recently in New Orleans (Davis 2005).

2.2 Social Vulnerability Revealed

There is ample historical evidence to illustrate how disasters result not as much from the destructive agent itself as from the manner in which societies are organized and the subsequent conditions of the people who reside there. People living in hazardous areas are not equally at risk. Some will have fewer resources, human and material, to deal with the event. A number of vulnerability factors have been well documented as being related to differential exposure and impact, as well as slow or inadequate recovery.

Poverty. Vulnerability associated with socioeconomic level is easiest to illustrate (Fothergill and Peek 2004). The difficult position of poor people, neighborhoods, communities, and states becomes painfully obvious after every disaster. The case of Hurricane Katrina and New Orleans provides the most recent and dramatic example of the effects of poverty on vulnerability. Not only was the pre-Katrina poverty rate high (about 38% of the children lived in households below the poverty rate compared to 17% nationwide) (Library Index 2007) but it was “entrenched” poverty concentrated in poor communities. Nearly 50,000 New Orleanians lived in neighborhoods where the poverty rate exceeded 40% (Berube and Katz 2005). According to census data, 27%, or about 125,000 people, did not have access to a car. Given the lack of public transportation for evacuation, it was not surprising that over 100,000 were in the city when Katrina made landfall.

During recovery, stark examples of the effects of social class become obvious. Since the United States relies primarily on a market-based approach to recovery, in every event the poorest individuals, families, neighborhoods, and communities are the last to recover, if ever (Peacock with Ragsdale 1997). After Hurricane Andrew, thousands were left homeless, living in tents and then trailers. Years later many still had not been able to find affordable housing (Peacock et al. 1997). Working-class homeowners fared little better; 10 years after the storm some were still living in unrepaired homes (Dash and Morrow 2007). Similar circumstances occurred after the Northridge Earthquake in California (Bolin with Stanford 1998). Poor communities have fewer resources to devote to recovery, and, surprisingly, in one case households in a poorer community actually received less federal assistance than those in a more affluent neighboring town (Dash et al. 1997).

Today we see uneven patterns of redevelopment occurring in New Orleans, with the rebuilding process being driven by the profit interests of developers rather than the needs of those who wish to return (Laska 2007). Rebuilding affordable housing has not been given a high priority among policy and decision makers even though it is essential to the sustainability of the city (Olshansky 2006).

Minority Status. While largely associated with social class, the effects of minority status on vulnerability are more complex (Fothergill et al. 1999; Bolin 2006). Patterns of discrimination against racial and ethnic minorities have resulted in such groups being located in highly segregated neighborhoods that tend to be geographically located in the least desirable, most hazardous areas. Eight out of 10 blacks live in segregated neighborhoods and environmental racism is argued due to the location and unsafe conditions of many of these neighborhoods (Bullard 2007). Urban blacks, compared to urban whites, are much more likely to be
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geoographically and economically isolated from where jobs, services, and institutions are located (Saenz 2005). Poor blacks are even less likely than poor whites to own a car. In most urban areas, including pre-Katrina New Orleans, 40% lack private transportation. Minorities are rarely part of the influential power structure in either the private or public sector.

There is substantial evidence that the households of racial and ethnic minorities irrespective of income tend to be more vulnerable at all stages of disaster response (Fothergill et al. 1999; Bolin 2006). Reoccurring patterns of racial and/or ethnic discrimination increase the chances that these communities are located in hazardous areas, lack political power, and are disadvantaged at all stages of response (Cutter et al. 2006; Elliott and Pais 2006; Fothergill et al. 1999; Peacock et al. 1997; Bolin and Bolton 1986). Housing in neighborhoods and communities with a high portion of minority households tends to sustain more damage (Bolin and Bolton 1986; Peacock and Girard 1997). The housing stock is likely to be less well built and/or maintained and without mitigation such as hurricane shutters (Peacock 2003). The result is that mortality rates are often higher among minority groups. African Americans were over-represented in every age category of Katrina-related deaths in New Orleans (Sharkey 2006).

There is some indication that minority owners are less likely to receive adequate insurance payouts (Peacock and Girard 1997) and that they may receive less federal assistance per household (Dash et al. 1997). The infrastructure of minority neighborhoods is likely to be inadequate and in poor condition. Public services, including emergency response, are more likely to be inferior (Fothergill et al. 1999).

Ethnicity can matter in complex ways. Culture plays an important role in how people assess risk, weigh options, make decisions, and carry them out (Peacock et al. 1997; Bolin with Stanford 1998; Bankoff 2002). Coping strategies are often different with, a greater tendency to rely on friends and family and collective processes (Peguero 2006; Ng 2005; Morrow 1997). There is some indication that ethnic minorities may worry more when faced with options (Lasker 2004). Cultural representation of events plays a role in transmitting knowledge and can influence how people prepare and react (Webb and Wachtendorf 2000). The survey research of Elliot and Pais (2006) revealed that while both race and class were factors in explaining the Katrina experience, neither could be reduced to the other. Both played distinctive roles in explaining the attitudes, behavior and outcomes. The foreign born and those for whom English is a second language are likely to encounter greater difficulty when interpreting warnings, understanding alternatives, and seeking information and assistance. They may be afraid of authorities and mistrust government, due to experiences in their countries of origin or their immigration status in this country. This issue is becoming increasingly important as the U.S. population is changing. It is estimated that ethnic minorities will make up more than one-third of the population by 2010 (U.S. Census Bureau 2004).

Fueled by the need for post-Katrina reconstruction labor, there has been a large influx of Hispanics into the New Orleans area. These new residents are at an extreme disadvantage with regard to hurricane response, particularly evacuation. Many do not speak English, do not own vehicles, and are fearful of government. They also lack hurricane experience and are not likely to know what to expect. Many may want to stay in the city when a hurricane threatens in hopes of being first in line for recovery jobs.

Gender. The existence of gender differences at all stages of disaster response is now well documented (Enarson et al. 2006; Enarson and Morrow 1998). Men and women are vulnerable in different ways. The differences have less to do with physical attributes than with social structure and culture. Women will usually have less power over the decisions and circumstances affecting their lives. Gender is a central organizing principle in most societies, and ours is no exception. Gender-based socialization affects attitudes, behaviors, and status in
ways that become particularly important in crisis. Women tend to be more risk aversive and more likely to respond to warnings. Men are much more likely to volunteer to assist with rescue, security, early cleanup, and other, more hazardous, community activities. In addition to assessing risk differently, women and men often respond to disasters and to losses in different ways. It has been noted that even couples who do not follow traditional gender roles tend to revert to them in a crisis (Hoffman 1998).

Men often feel they have let their families down when they cannot protect them from the event and provide for them in the aftermath—in other words, when they fail to fulfill the traditional male role. At the same time, mothers, grandmothers, daughters, aunts, and sisters have to continue their care-giving roles often in damaged homes, shelters, temporary trailers, or the crowded homes of friends or family. It is no surprise that women seem to suffer more from these losses of home and place (Fordham and Ketteridge 1998), yet the short-term needs and long-term interests of women and their families are often ignored in the rush to restore businesses and infrastructure (Enarson and Morrow 1998; Enarson et al. 2006). The stresses of living in post-disaster settings often strains family relationships (Morrow 1997). More women are reported to experience post-traumatic stress (Ollenberger and Tobin 1998). An increased incidence of woman abuse has been documented after several disasters (Fothergill 2004; Enarson 1999; Fothergill et al. 1999), including Hurricane Katrina (Jenkins 2006).

Age and Disabilities. Resiliency implies agility and strength. Effective response to a crisis requires being of sound body and mind. While there is a great deal of difference in the physical health and circumstances of the elderly, age is often a factor in determining one’s ability to respond and recover from a disaster. Disabilities, regardless of age, can restrict individual and household options. The frail, elderly, and acutely ill often reside in institutions, such as nursing homes and hospitals, where they are at the mercy of their caretakers when it comes to hazard response. The nation was made painfully aware of this by the deaths of many institutionalized persons in New Orleans after Katrina. Even when in good health and with sufficient resources, older people are less likely to heed hurricane evacuation orders (Gladwin et al. 2001). They are reluctant to leave the comforts of home for the discomforts they will likely encounter during transport, and in shelters and other places of refuge.

The aging of America is resulting in an increasing “dependent-in-disasters” population (Mileti 1999). This was painfully obvious in New Orleans. While the population over age 60 was only 16%, nearly 75% of those who died were elderly (Louisiana Department of Health and Hospitals 2006).

Human Capital. Human capital refers to the stock of productive skills and technical knowledge in the labor force. In the disaster context it can be used to describe personal abilities and skills that promote resilience. It can be argued that considerable responsibility for mitigating and responding rests with the individual. However, this can be very difficult. At every stage of response from interpreting warnings to negotiating the complex processes associated with recovery, it helps to be literate, educated, and experienced in dealing with authorities and bureaucracies. Being from a different culture can hinder understanding of the process involved in anticipating and responding to an event. Lack of skills and understanding related to building construction can be a tremendous handicap during home reconstruction. Lack of knowledge about topics such as insurance, building codes, assistance programs, and government can hinder recovery. Understanding natural hazards and emergency procedures is important to resilience.

Much of this information is provided in maps and written materials. Today it is estimated that 50% of the U.S. population reads at the 8th grade level or lower. Over 93 million adults have basic or below basic literary skills (NAAL 2007). There is evidence that people with less
than a high school education are not able to interpret evacuation maps correctly (Zarcadoolas et al. 2007). In order to reach the general public, it is recommended that educational materials have a reading level of 6th grade or lower, yet most emergency management materials are written at a much higher level. For example, one study found that the mean readability scores for emergency management materials on county websites in Maryland was 9.45 grade level (James et al. 2007). Negotiating the FEMA process to receive Individual Assistance is a daunting and confusing process, requiring filing an application for a loan from the Small Business Administration, being rejected, and then applying for a grant. It’s no wonder that some of the most needy have trouble getting assistance.

**Social Capital.** The importance of social connections and social networks to social resilience is obvious. Family and friends can be important sources of information, advice, and assistance, and this is particularly true in times of crisis. Minorities, including recent immigrants, often rely on kin networks as their main source of guidance and help. Membership in social networks such as churches, social clubs, parent groups, and other community organizations provides connections that can be called upon when needed, whether for job opportunities, recommendations, guidance, or resources. To be isolated is to be far more vulnerable in everyday life, and when serious problems arise. Groups that tend to have less social capital include recent immigrants, new residents in the community, elderly who live alone, and the homeless. Renters are less likely to be connected to the community than homeowners. Adults without children in the home tend to have fewer outside connections.

Relatives outside the household were found to be an important source of assistance both in preparing for Hurricane Andrew and during the long recovery period, particularly for minority families (Morrow 1997). Lack of social support systems is associated with post-disaster stress and trauma (Kaniasty and Norris 1993). Women interviewed after the Grand Forks floods expressed gratitude for the assistance they received from their families, including providing a haven during evacuation and relocation (Fothergill 2004). Communities with neighborhood associations, formal and informal, have been more successful in efforts to influence the reconstruction process in New Orleans. Clearly, those without social connections are more vulnerable.

### 2.3 Intersecting Vulnerabilities

Providing convincing evidence of the ways in which certain attributes are associated with vulnerability and thus impact resilience negatively only tells part of the story. It is important to note that these vulnerability factors rarely occur in isolation. Rather, vulnerabilities are likely to intersect. Obvious examples are that ethnic minorities are more likely to be poor, as are women, as are the elderly, as are the disabled, as are the least educated. Women-headed or women-alone households are more likely to be poor. Women live longer and thus are over-represented in the elderly population, especially the poor elderly. It can be argued that the most vulnerable group in the United States is elderly African American women, and many bear responsibility for raising grandchildren.

The tragedy of Hurricane Katrina provided vivid evidence of the compounding vulnerabilities associated with gender, age, class, and disability. While official mortality data for Hurricane Katrina are still difficult to obtain, it is estimated that over 70% of those who died in New Orleans as a direct result of the flooding were 60 years or older—a group that made up about 15% of the pre-Katrina population but about 40% of whom were disabled (Bytheway 2007; Census 2004). There is ample evidence of the continuing impact of race and class on all phases of the recovery experience (Cutter et al. 2006; Jones De-Weever and Hartmann 2006).
Low-income black homeowners have been reported as having a particularly hard time rebuilding their homes and lives in New Orleans (Elliot and Pais 2006).

3. BUILDING RESILIENT COMMUNITIES

3.1 Commitment to Change

While there is a convincing moral argument for addressing the needs of society’s most vulnerable citizens, there is a practical argument for policy and decision makers, emergency managers, and first responders in every community. In a typical disaster much of the public expenditure of labor, money, and other resources is spent dealing with the most vulnerable segments of society who tend to be heavily impacted and lacking in personal resources for response and recovery. The long-term answer is to reduce basic education, employment, and housing vulnerabilities. Short of that occurring, it would be cheaper, and more humane, to find better ways to reach high-risk populations with mitigation and education programs.

The first step is recognition and acknowledgement of inequities and vulnerabilities. Recent work by Cutter and Finch (2008) using U.S. Census data examines geographical patterns in social vulnerability over time, revealing uneven patterns of vulnerability reduction with increases in many regions particularly related to population density (urban areas), race/ethnicity, and socioeconomic status. The Community Vulnerability Mapping that is becoming routine in emergency management operations should include a component that denotes where high-risk or socially vulnerable residents tend to be clustered (Morrow 1999; Hill and Cutter 2001). As stated by Enarson (2007, p. 273), computer-aided mapping can help emergency managers “ensure congruence between the maps of risk and the maps of preparedness.”

Once identified, there then needs to be a consensus and commitment to addressing the needs of vulnerable groups and communities through public and private initiatives, including, but not limited to, emergency management. A vital key is the use of social marketing techniques to reach key groups with culturally sensitive educational materials, written at appropriate reading levels and in other languages when needed. Another is civic participation at all levels. Community organizing around safety, such as the Community Emergency Response Teams (C.E.R.T.s), is an important step toward building more resilient neighborhoods.

Looking at a more macro level, a paradigm change in the way policymakers look at economic development is necessary. At some point it becomes clear that more and more development, particularly in environmentally sensitive areas, is not likely to result in long-term gain, either economically or in the quality of life. Another important issue affecting resilience is insurance. As the rates for property insurance continue to rise, and more areas are denied insurance altogether, this main recovery mechanism for most victims of natural disasters and other hazards is becoming less salient, increasing the nation’s vulnerability. Government programs related to emergency management and disaster response at all levels need permanent and sufficient funding sources, such as the Florida Hurricane Catastrophe Fund, as well as the professional expertise and political power necessary to be effective.

3.2 Building on Strengths

Building resilient communities goes beyond the purview of public policies and practices. People and institutions need to be provided information and tools that enable responsible
action on their own behalf. Some of the most vulnerable (such as where multiple vulnerabilities interact) will require outside assistance and should be targeted for special programs. However, an important asset in the reduction of vulnerabilities lies with the people and groups themselves. They should be viewed as active agents in the process (Murphy 2007), possessing local knowledge, skills, and connections. Within these vulnerable groups is important social capital—networks and relationships—that can become vital resources in building and maintaining resilience. Respect for and use of indigenous strengths at every level from administration and management through on-the-ground response will result in more effective policies and programs.

Community women are most likely to know what’s going on in their neighborhoods and can be valuable informants, facilitators, and leaders. African American communities tend to have strong churches and networks that can help identify community leaders, problems, and issues and reach target audiences with messages and assistance. Extended family networks are common to ethnic minorities and are an important source of information and assistance in emergencies. The children of recent immigrants provide an important conduit to their families. Older citizens often volunteer for community work and tend to be under-utilized in emergency management. Some homebound elderly or disabled citizens are reliable and effective choices for telephone trees and mailings. Finding ways to tap into these social resources is essential to building resilience at the grassroots level.

3.3 Essential Resilience

According to Vale and Campanella (2005), a resilient city is a constructed phenomenon, not only in the literal sense of what gets built but in a broader cultural sense. Social justice should form an interpretative framework to guide planning at all levels of government. Hazards mitigation is not just about building stronger buildings or levees “but equity and justice in resource management” (Mustafa 1998). People need to have faith in their government and trust that they are being represented fairly. This requires community involvement. Top-down paternalistic official activities do not lead to meaningful resilience (Murphy 2007, p. 313). It requires hard work at the grassroots level to build strong community social structures and for government and officials to earn public trust. There are ample examples of disasters made worse because this element was lacking, including the cases of Hurricane Andrew and Miami-Dade County and Hurricane Katrina and the city of New Orleans. This is one reason why political change often occurs after disasters (Olson 2000).

A goal of this paper is to extend the argument that the need to understand and modify human and social forces is far more important than any technological answer to greater resilience (Haque and Etkin 2007). A community is only as resilient as its weakest link. This means sustainable local economics that are capable of supporting quality lifestyles and that foster an equitable distribution of costs and benefits, including meaningful jobs, adequate income, substantial housing, good education, access to health care, and safe neighborhoods (Mileti et al. 1995). This “essential resiliency” (Laska Forthcoming) or degree of true resilience will define the level of risk to any hazard, including hurricanes.

While total equality of opportunities is likely unattainable, the current level of U.S. inequality is untenable. “Good communities and good societies” seek to reduce inequalities (Etzioni 2000). In addition to the moral argument, there is a practical one. Addressing basic social and economic problems is a major step toward building resilient communities. It will make us all safer—and will result in a higher quality of life. But this approach is not easy; as cautioned by Geis (2000), “it calls into question a number of entrenched political and cultural
attitudes about land, people, and ways of doing things that are in conflict with what actually needs to be done to achieve a quality-of-life and disaster-resistant society.” Working toward such lofty goals, however, should not curtail our more immediate responsibility to reduce the risk of our current coastal populations.

4. REFERENCES


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