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## Uncovering the Hidden Dimensions of Rural Disaster Mitigation: Capacity Building Through Community Emergency Response Teams

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**UNCOVERING THE HIDDEN DIMENSIONS OF RURAL DISASTER  
MITIGATION: CAPACITY BUILDING THROUGH COMMUNITY  
EMERGENCY RESPONSE TEAMS**

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**ABSTRACT**

The increasing magnitude of hurricane damage in the southern United States in recent years, capped off by Hurricane Katrina in 2005, highlights the reality that local people and communities are often the first responders to crisis or disaster. Driven by policy and necessity, rural communities find themselves taking on more responsibility in preparing for and resolving local crises and emergencies. Locally-based Community Emergency Response Teams (CERTs) are teams of local volunteers, trained to aid in disaster preparation, provide first aid and contribute other assistance during emergency situations. Focusing on the southern United States, this article explores the rural/urban distribution of disaster declarations, CERT establishments, and the implications of CERTs for their planned mission of disaster response and also the possibility that they can do more. The CERT framework presents a unique structure that can be enhanced to contribute to community development, natural resource management, risk mitigation, and other local conditions. We suggest expanding the mission of CERTs to broadly represent local populations, engage in long-term community development, and serve as a bridge or liaison between citizens and government agencies to improve community and environmental decision making.

**Introduction**

Hurricanes are certainly not a new, nor the only, hazard facing rural communities throughout the southern United States. But the hurricanes and tropical storms of 2005 along the Gulf of Mexico—Katrina, Rita, Cindy, and Dennis—brought to focus the reality that community residents are often the front line agents of disaster mitigation. While both urban and rural communities found themselves grappling with inexplicable turmoil in the midst and wake of the hurricane disasters of 2004 and 2005, rural communities were often at the periphery of the focus of media attention and large-scale emergency response. This reality is linked to a larger trend. Rural communities increasingly find themselves shouldering responsibility for meeting the emergency needs of local residents as the growing trend toward devolution of governmental responsibility means a shift in obligations from federal to state, and state to local jurisdictions (Herbert 2005).

This devolutionary trend presents a paradox in the context of disaster mitigation. It is increasingly acknowledged that community participation in disaster preparedness and response is important and that a bottom-up approach to emergency response emphasizing local involvement is critical for long term recovery (Berke et al. 1993; Stehr 2000). Devolution opens the possibility for community involvement and shifts the nexus of control to more local scales where, ideally, there is a more immediate critical need. Not all communities, however, exhibit the capacity to fulfill these new obligations. Devolution can create inequality between places with robust capacity to manage their own affairs and communities that are less able to manage and administer public functions (Warner 2003). In short, rural communities find themselves having to do more with less. When local capacity to administer, mobilize resources, and respond to needs is low, shifting obligations from federal and state governments to local communities can be a tremendous burden that limits the likelihood of successful responses to hazards and disasters. In communities devoid of this capacity, results will likely be tragic.

A relatively new approach to local involvement in disaster management is emerging across counties and communities in the United States. The Community Emergency Response Team (CERT) program seeks to train and empower local community residents to shoulder the responsibility of being first responders to emergencies. CERTs, which are administered by Citizen Corps and FEMA within the Department of Homeland Security, blend a bottom-up appreciation for the role of local volunteers in emergency response with a top-down institutional framework to facilitate training and coordination. There is much promise in the CERT program as a strategy for local empowerment and effective disaster mitigation in rural communities. To be effective, however, the CERT program should be adaptable to different levels of local capacity and should broadly represent the citizenry it is intended to protect and serve. This program is also promising in that by developing local capacity for disaster mitigation, CERT teams could be able to expand their applicability to non-disaster community development activities. This paper situates the rapidly expanding CERT program within the context of disaster management, describes the distribution of CERTs across the southern region of the United States, and suggests key factors for the program's success, particularly in rural communities.

### **Disaster Policy: Shifting Emphasis to Local Mitigation and Response**

Recent disasters in the Gulf States underscore the problems and shortcomings associated with coordinating outside logistics and show a clear need for local

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volunteers to serve as the first line of response to such catastrophes (Brennan, Flint and Barnett 2005). This was the most obvious in the first weeks after Hurricane Katrina, where volunteers and active community residents were the rescuers, caretakers, and in many cases, the final comforting companions to the dying. They were the first, and often the only, line of response that would exist for weeks. Highlighting the importance of the local level, government officials immediately called on local citizens to volunteer their time, money, and sweat equity in addressing this massive and unprecedented natural disaster in America.

Current disaster management policy is guided by the Disaster Mitigation Act of 2000. This policy established a new national program for disaster mitigation, streamlined administration of disaster relief, and called for multi-level coordination of mitigation and response efforts ([www.fema.gov](http://www.fema.gov)). As a result, local and Tribal units are required to develop and submit mitigation plans. In addition, access to federal planning funds is linked to demonstrated compliance with mitigation requirements. In essence, the burden of disaster preparedness shifted to the local scale, though not without some federal financial assistance.

A recent addition to disaster policy, the National Response Plan, came from the Department of Homeland Security in December 2004 and places a strong emphasis on local response to emergencies. While coordinating multi-agency response structures, the National Response Plan identifies local level police, fire, public health, medical, and emergency management personnel as responsible for incident management and specifies that incident response be handled at the lowest possible organizational and jurisdictional level. Federal involvement is outlined in cases when an incident exceeds local and state capabilities.

As retrospective assessments of the 2005 Hurricane season emerged, it became clear that despite honorable intentions of disaster policies and numerous heroic acts of leadership, failures at local, state, and federal levels compounded into tragic circumstances across the southern region. This suggests that considerable effort is needed to bolster disaster policy and response frameworks to accentuate the role of local communities.

### **Local Participation in Disaster Preparedness, Response, and Recovery**

The local community, especially in rural areas, serves a variety of functions that directly contribute to social and economic well-being. It is logical therefore that the community should be empowered to be the first line of defense in preparing and responding in the event of disaster. Communities are not rigid systems but dynamic and ever-changing places where local residents interact to meet local needs (Luloff

and Bridger 2003). The building of community requires conscious and deliberate actions among diverse residents. Such action reflects the building of relationships among a wide range of residents in pursuit of common community interests (Wilkinson 1991; Luloff and Bridger 2003; Brennan and Luloff 2007). Through voluntary efforts, individuals interact with one another, and begin to mutually understand and improve common needs (Luloff and Swanson 1995; Brennan 2007).

Natural hazards and disasters researchers and practitioners have increasingly shifted their focus from communities as helpless victims needing outside assistance to acknowledging the importance of local involvement and community capacity in disaster mitigation, response and recovery (Berke et al. 1993; Hewitt 1998; NHRAIC 2001; FEMA 2000a, 2000b; Stehr 2000; Flint and Luloff 2005). The CERT program emerged out of this growing appreciation for local participation in disaster preparedness and response.

CERTs began as a grassroots, locally driven initiative and has since expanded nationally. The first CERT appeared in Los Angeles, California in 1985. City officials and the Los Angeles Fire Department developed a program based on a Japanese model of involving local residents and volunteers in training drills to build their knowledge and skills on how to respond to earthquakes and emergencies (Simpson 2001). San Francisco Bay area communities began adopting CERT programs around the time of the Loma Prieta earthquake in 1989. After Hurricane Andrew in 1992, Orlando, Florida adopted the CERT approach and FEMA initiated federal involvement by developing standardized training materials and facilitating training programs (Simpson 2001). By 2001, there were more than 100 CERTs in the United States (Simpson 2001).

The CERT program has grown exponentially in recent years. According to Citizen Corps, as of September 2007 there were 2,738 CERTs widely distributed across the United States. Based on the concept of neighbors helping neighbors, the CERT program emphasizes the training of local volunteers using FEMA-standardized materials. CERT training focuses primarily on first aid and triage, logistics and communication, search and rescue, and team organization. These volunteers then become official auxiliaries of local emergency management services during emergencies. In some cases, CERTs are administered at the county level with more of a top-down approach and organization. In other cases, these teams grow from neighborhood and community initiatives, with more local control over organization and responsibilities. With this exponential growth has come a need to understand the geographic distribution of CERTs and the implications of these for meeting disaster declaration needs. This is particularly true in the southern United

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States, which has long seen a wide range and high frequency of disaster declarations.

**Rural CERTs: Expanding Possibilities for Disaster Mitigation and Community Development**

The rapid growth in the number of CERTs poses both problems and opportunities for rural areas. In these and other settings, local residents and groups are in a position to best identify their immediate needs, coordinate preparations, supplement official response efforts, and contribute to local decision making for future events. This presents a problem, however, in that many of our rural areas are often characterized by poverty, out-migration of younger skilled residents, and declining educational attainments. All shape the capacities of local communities to respond to disaster and to foster successful community and economic development strategies. The shift of responsibility for such activities can have dire implications for areas unprepared to handle the challenges associated with disaster preparation and response.

Conversely, locally-based response strategies also present unique opportunities. While CERTs have predominantly focused on disaster preparedness and recovery, this need not always be the case. CERTs provide a framework for pulling together the diversity of our localities to prepare for times of need. This process of building capacity and response structures has application beyond the context of disasters. In rural communities with high disaster response capacity, established networks, infrastructures, and alliances are likely to already exist to allow a community to plan for its needs and build on its strengths to achieve desired goals. Such capacity to provide these community services does not always exist, but can be cultivated and should be encouraged and empowered. Where capacity for community involvement in disaster response or broader development is lower, CERT programs provide a potential framework for both.

A critical aspect of CERT effectiveness and potential for expanding into community development or other roles is representation of the entire local population. Drawing together diverse racial, ethnic, religious, and other groups provides a host of resources and experiences, but more importantly provides transparency in the local decision making process. In all communities, a variety of groups exist with diverse skills and abilities combined with personal and professional experiences that are essential to successful preparation and response to disasters of all types (Independent Sector 2001). Included are residents with needed professional and trade skills for damage control and assessment (engineers,

environmental scientists, architects, contractors, and skilled laborers), disaster preparedness and response training (VFW, retired military/national guard/police), medical, psychological and social service delivery experience (health practitioners, counselors, religious/civic groups) and long time residents who have witnessed previous responses to natural disasters.

Such groups and individuals are also directly suited to local empowerment and community development that serves to enhance rural well-being. Effective community response to disaster and other local needs connects diverse groups within the locality. Successfully linking local organizations, citizens, and leaders provides a network and method for local citizens and groups to become actively involved in local preparedness and response efforts and beyond. Individuals currently involved in CERTs are also likely to provide strong personal and professional connections which can link local interests to state/federal agencies and other outside entities. Such connections and partnerships can facilitate access to information, resources, training, and finances necessary to build local capacities.

In this way, CERTs can act as bridges between local and extra-local resources not only to prepare and respond to disaster, but also directly shape rural well-being as part of rural development efforts. Since rural communities are often situated in a unique interface between the physical environment and society, local residents are important to the management of natural resources. CERTs can provide the human resources, initiative, and framework for gathering and disseminating information important to environmental decision making. Such effort is not far removed from disaster preparedness efforts. Linking local land use and natural resource management with risk mitigation and disaster preparedness weaves together an integrated approach to protecting ecological and human well-being. A model of expanding the traditional role of CERTs can be found in Alachua County, Florida where local CERT volunteers were involved in surveying local farmers about drought protection practices and other natural resource management efforts. Building relationships in quiet times creates a valuable network and sense of community to tap into in times of emergency or disaster.

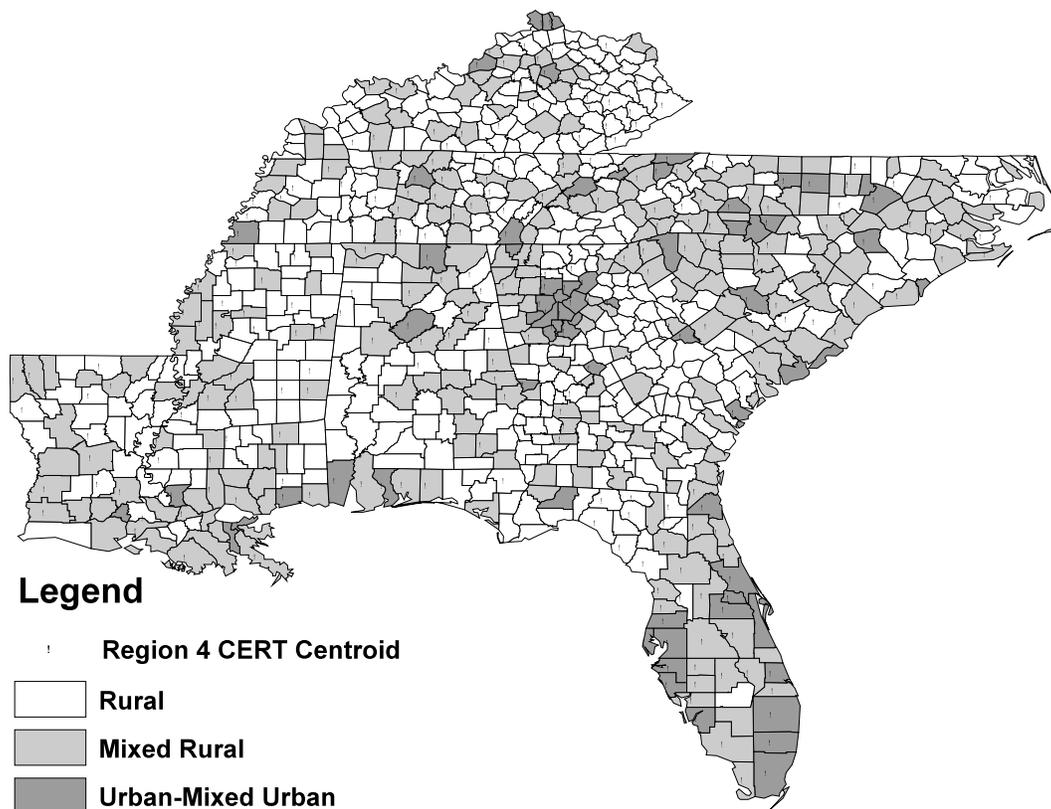
### **Research Methods**

To explore the scope and context of CERTs nationally and in the southern United States, a database of CERTs was built in February 2007 utilizing the national online registry (<http://www.citizencorps.gov/cert/>). Using aggregated data from this county-level national dataset, the presence and number of CERTs in each county was determined. This dataset identified municipal CERTs within their

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home county, county-level CERTs, and multi-county teams. Not included were statewide or regional CERTs. Nationally, the dataset represents 2,460 CERTs. Based on this data, 34% percent of US counties had at least 1 CERT, 29.1% had 1-3 teams, 3.3% of counties had 4-10 teams, and 1.2% had 11 or more CERTs. Additional variables were added including rural-urban designation based on Isserman's (2005) population density typology<sup>1</sup> and disaster declaration information for the period from 2004 to 2006 based on online data from FEMA (2007). Disaster declarations are organized into two categories: 1) disasters with public assistance made available to state and local governments and certain nonprofit organizations, and 2) disasters with individual and household assistance made available. Typically, counties receiving individual assistance also receive public assistance. What follows is a description of the CERT data for the southern United States using descriptive statistics and crosstab analysis to assess relationships among variables.

Figure 1. Rural/Urban Distribution of Counties in FEMA Region.



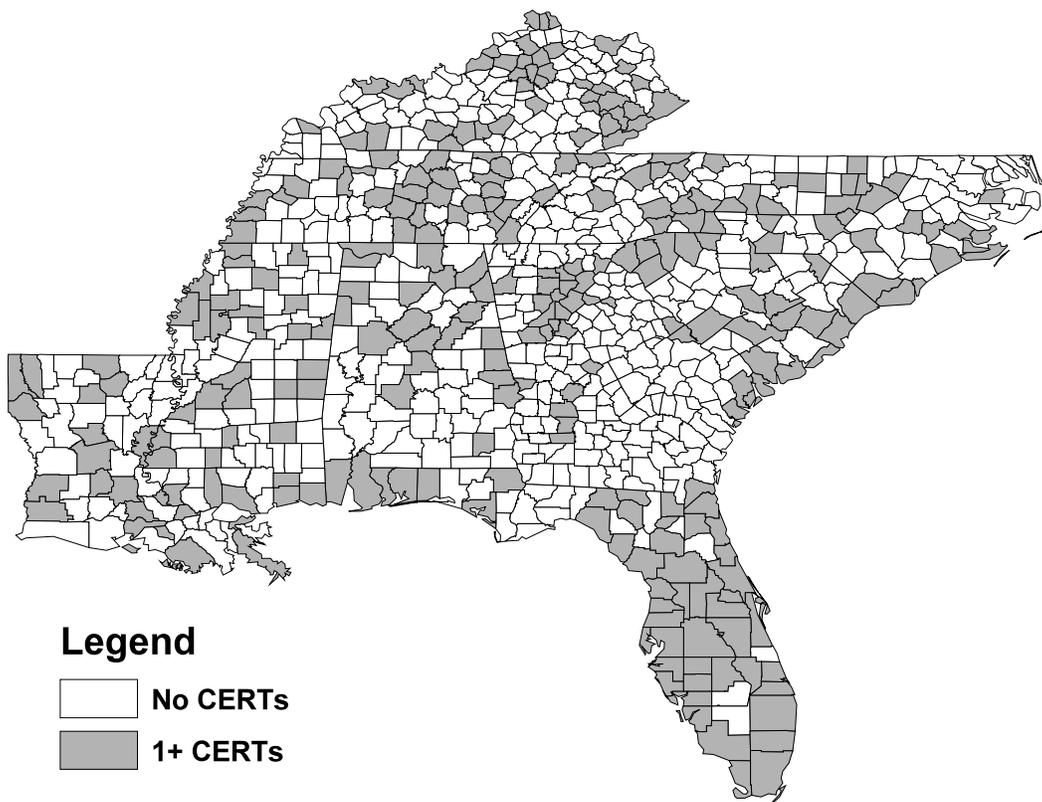
<sup>1</sup>Isserman's rural-urban typology is based on the following distinctions: 1) rural counties, 2) mixed-rural counties, 3) mixed urban counties, and urban counties. Due to the small number of urban and mixed urban counties, these categories were combined for this research.

### The Rural-Urban Distribution of CERTs

Between 2000 and 2005, few counties in Georgia, Florida, Alabama, Mississippi, and Louisiana escaped the ravages of storm-related disasters. Other counties in West Virginia, Virginia, Kentucky, Tennessee, North Carolina, and South Carolina also experienced extreme vulnerability from time to time. Together, these eleven states make up the Southern US Region, also designated as FEMA Region IV. This region includes a significant number of rural counties, as well as major metropolitan areas, representing a substantial population of nearly 40 million (US Census, 2007). The region is largely rural (56%), with an additional 36% mixed-rural counties and only 9% urban counties (Figure 1). Considering the diversity of cultures, populations, geography, and historical conditions, the region presents a wide range of disaster mitigation vulnerabilities and capacities.

In an effort to prepare for and mitigate disasters in the region, a substantial number of CERTs have emerged, with 35% of the counties containing at least one CERT (Figure 2). This number is considerably higher than most of the other

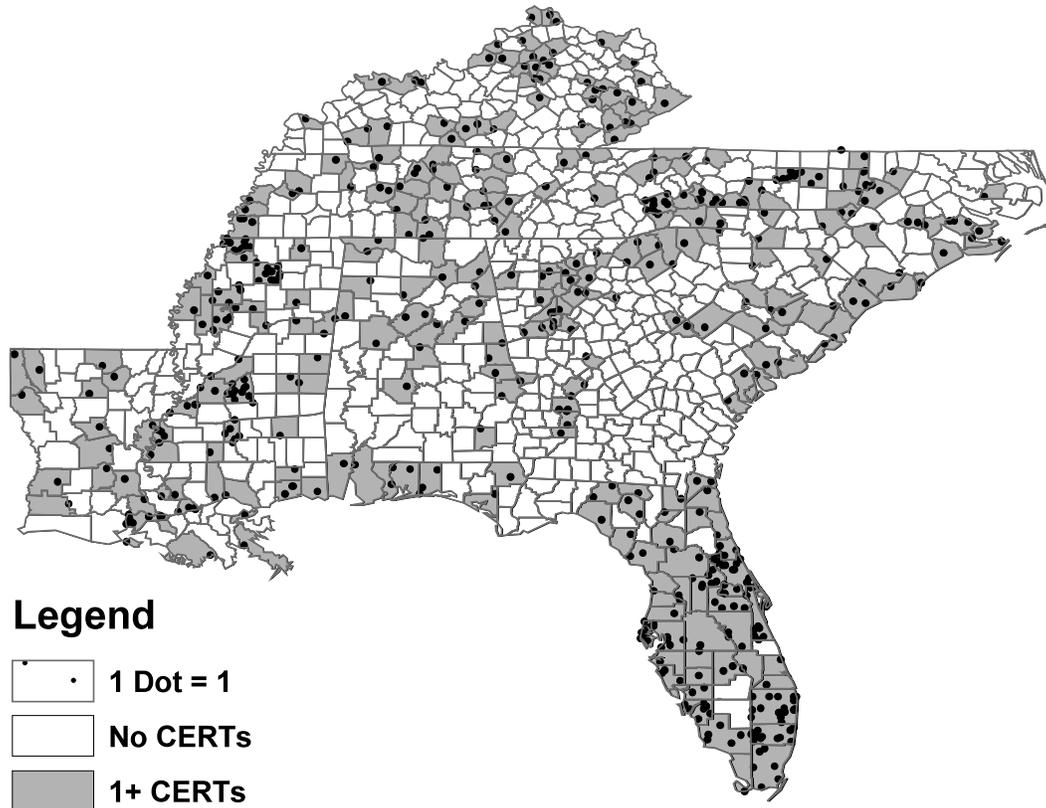
Figure 2. CERT DISTRIBUTION IN FEMA REGION IV.



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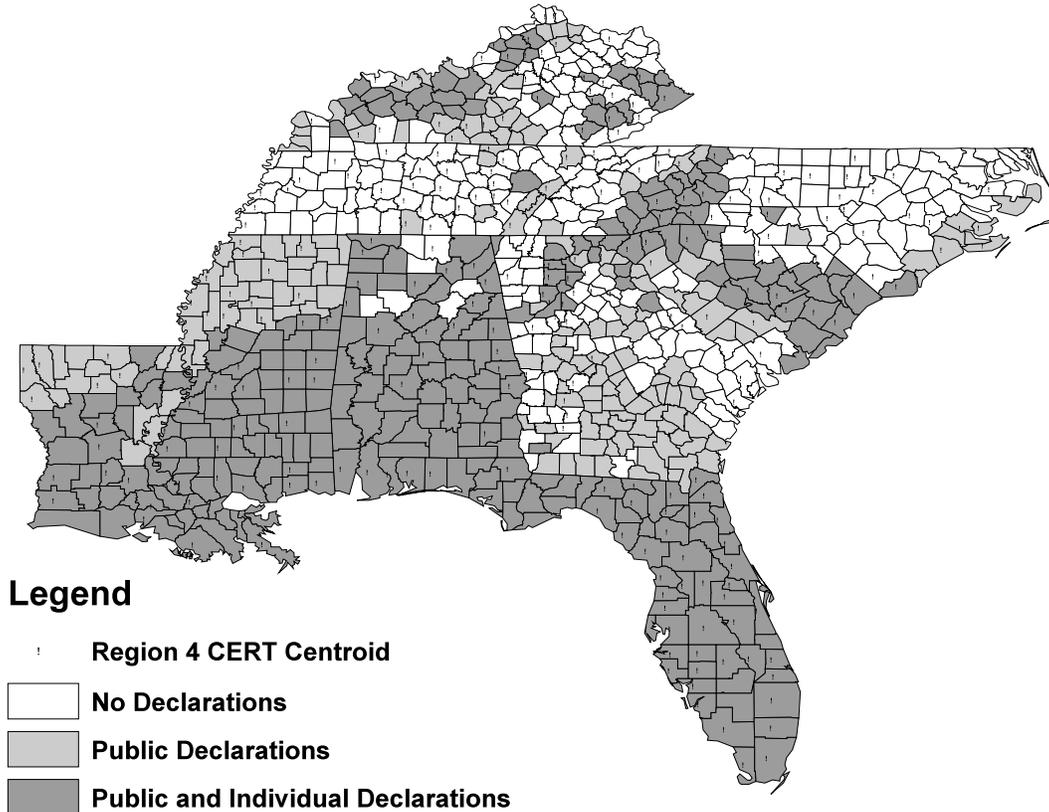
FEMA regions. The distribution of CERTs differs greatly across the region, with large number present in coastal areas of Florida, Louisiana, Mississippi, Alabama, South Carolina, and North Carolina (Figure 3). The dots on Figure 3 each denote one CERT randomly located within its county.

Figure 3. LOCATION OF CERTS IN FEMA REGION IV.



Between 2004 and 2006, counties in this region experienced a substantial number of disasters and disaster related conditions. Here 23% of counties had disasters declared with public assistance made available and 40% experienced disasters with both public and individual assistance made available (Figure 4). Only 37% of counties in the Southern US did not have disaster declarations in this recent time period. Most notable was the percent of disaster declarations with both public and individual assistance made available, which was substantially higher than the national average (29%). In short, this region has seen more disaster declarations with individual assistance available than other regions (i.e., more devastating disasters to individuals).

Figure 4. DISASTER DECLARATIONS AND ASSISTANCE IN FEMA REGION.



### Relationship between CERTs, Rural/Urban density, and FEMA Declaration

Throughout the region, the distribution of CERTs and FEMA disaster designations varied greatly. The relationship between CERTs and rural/urban density was particularly interesting. While making up more than half of all counties in the region, only 21% of rural counties had one or more CERTs present. This is compared to 46% of mixed rural counties and 85% percent of urban counties. These differences were statistically significant ( $\chi^2=132.041$ ;  $p=.000$ ).

The relationship between areas receiving FEMA assistance and the presence of CERTs also showed interesting differences. Forty-five percent of counties with at least one team had disaster declarations with individual and public assistance and 25% of counties with at least one CERT had disaster declaration with public assistance only. Thirty-two percent of the counties with at least one CERT had no disaster declaration. Counties with at least one CERT were more likely to have had a disaster declaration with individual and public assistance than no disaster declaration. These differences were statistically significant ( $\chi^2=22.859$ ;  $p=.000$ ).

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Finally, the declaration of disasters differed among rural urban locations. Rural counties were more likely to experience declared disasters. Throughout the region, 70.7% of rural areas experienced disaster declarations with public assistance available compared to 2.1% of urban and mixed urban counties and 27.1% of mixed rural counties. Similarly, 51.1% of rural areas experienced disaster declarations with public and individual assistance available compared to 10.3% of urban and mixed urban counties and 38.6% of mixed rural counties. These differences were statistically significant ( $\chi^2=26.481$ ;  $p=.000$ ). While rural counties were more likely than mixed rural or urban counties to have declared disasters, they were less likely to have at least one CERT program.

The data on CERTs in the southern United States suggest that rural counties have fewer CERTs than their more mixed rural or urban counterparts, despite the fact that more of the region's counties are rural. On the other hand, counties that have had a disaster declaration in recent years were more likely to have a CERT, regardless of rural-urban status. While we do not know if these counties had CERTs before the declared disaster or developed one after, it does suggest that CERTs are emerging in disaster-prone areas. However, there are likely unique challenges in rural areas that are presenting barriers to the creation of CERT programs in this region.

### **Implications for Rural CERTs and Local Community Capacity Building**

CERTs present a unique community building potential. In many ways, they do the hard work of providing organization and structure needed for local capacity building. Included are the drawing together of impassioned and active citizens and their organizations. CERTs also operate in a context where participants quickly adopt a shared vision and commitment. In the community development process these are often among the most difficult tasks to accomplish. With CERTs overcoming these, they present a framework where broad based local capacity building can emerge.

Building local capacity also contributes to CERTs as well. The development of community is essential not as a byproduct or benefit of CERTs, but more as a mechanism for their continuance, success, and ability to respond in the future. CERTs, and effective disaster response in general, by their very nature present a paradox and inherent flaw. Their effectiveness and ability to respond, relies on practice and experience. This experience comes at a large human and environmental toll, namely through large scale disaster and catastrophe.

Fortunately (but unfortunately for disaster responder skill maximization) such catastrophes are few and far between. However such conditions create an environment where CERTs are without a mechanism for maintaining coordination, structure, communication, and interaction necessary for them to function at optimal efficiency. Examples of such conditions can be seen in the local response efforts in Florida during the 2004 and 2005 hurricane seasons. During these seasons the state saw unprecedented storm activity, with five major hurricanes in 2004 and six major storms making landfall in 2005. Within a short period of time following the initial 2004 hurricanes, CERTs and other local response efforts operated with remarkable efficiency. One CERT director summarized this process as follows:

“We were ground zero for the 2004 hurricane. Many CERT trained people were direct victims of the storm. We lost 11,000 homes and 50,000 were damaged. The three CERTs as of 2004 did more of their work within the communities that were directly affected by the storms. The CERT program has gone on to be used for wildfires and for a tornado.”

Fortunately, the 2006 hurricane season saw far less activity with only one tropical storm and no hurricanes making landfall. This period was not however without loss. During this ‘downtime’ active CERT members relocated, lost interest, died, and became committed to other activities. Similarly, local channels of communication, interaction, and capacity for quick response became noticeably diminished due to lack of action. New members and replacements for lost members were often not actively recruited due to a lack of immediate need. This loss was highlighted by one key informant:

“It is difficult in their community because of the demographics. During hurricanes, they lost a lot of residents due to losses of homes or moving. Many trainees are retirees so the time and ability is limited. This county has the highest percentage of people over the age 65 in the United States. This puts us at a distinct disadvantage for recruiting, training and retaining volunteers. Retention is the biggest problem over time. The ideal is to get as many young people trained as possible, so they will have people that will last more than five years.”

Should large scale disasters return, which they invariably will, local communities and response teams will likely find a less prepared response force in

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most areas. The exception will be communities where CERTs and other response efforts have broadened their scope or partnered with other local groups to remain active and integrated into the community even in times of peace and stability.

The development of community is therefore not a wishful or interesting byproduct of effective emergency response. It is an essential cornerstone on which CERTs and local response must be built. It is therefore essential that local structures and efforts are in place to keep these organizations functioning at top utilization. Time wasted reorganizing local members, resources, and channels of communication in disaster settings, is precious time taken away from life saving activities in the moments when they are most needed. In short, we shouldn't need to depend on regular disasters to keep local response efforts current and well-trained.

Building on the findings of this research, several applied suggestions are proposed:

1. *Expand CERT and disaster mitigation capacities in rural areas.* While making up more than half of all counties in the region, less than a quarter of southern rural counties had one or more CERTs present. Such teams would be an invaluable resource in fostering disaster mitigation capacities, securing federal/state disaster funding, and more importantly providing a basis for broader community development efforts. Linking these local efforts with existing social, economic, and community development activities would further aid both disaster mitigation and development activities.
2. *Actively anticipate for the impacts of disaster on rural areas.* The distribution of disasters throughout the South shows a direct need to build on existing CERTs, and to establish them where needed, so as to prepare for the disasters which are likely to come. The capacity exists in many counties, but in many other areas it does not. Establishing a baseline level of mitigation capacities is needed in these locales. Linking disaster mitigation with community development efforts from the very beginning would be particularly effective in these areas.
3. *Merge community development and CERTs.* By merging the capacities of CERTs and broader community development efforts the effectiveness of both can be enhanced. Building upon the structure provided by CERTs, broader sustainable community development activities could be achieved. Similarly by

providing a clearly identified role for CERTs in a variety of other settings, their efficiency can remain at high levels allowing for immediate disaster mitigation when needed.

### **Conclusion**

CERTs can provide a variety of services and increase local capacities to respond to disaster. They can also conceivably do more. Part of this process will involve a reconsideration of what we see as disasters. Emergencies and disasters take many forms in different regions of the United States. Hurricanes and flooding have been vivid experiences in the southern states in recent years. The threat of terrorism is also a primary concern for local community preparedness and security efforts. However, disasters in the form of rapid economic decline (e.g., loss of farming, mining, forestry, manufacturing jobs) and environmental change (drought, marine ecosystem declines, forest disturbance) have equally detrimental impacts on rural quality of life and well-being. CERT programs present the potential to help communities respond to nontraditional disasters and to directly shape local capacity for rural development. The recent disasters in the southeast United States highlight what has been suspected by experts: that local residents will be first responders and likely to be on their own for days or weeks. In the event of nontraditional and economic disasters the process may last years or longer.

Regardless of the type of disaster facing rural communities, building local capacity is key. Where there is local capacity, CERTs will flourish and provide critical disaster response skills and organization for recovery. By building local structures, networks, channels communication across the community, CERTs can also take on multiple responsibilities and make a variety of contributions to local life. FEMA and Citizen Corp., as coordinators of the CERT program, could expand training programs in the future to allow CERTs teams to focus on a wider range of interests and responsibilities. Such efforts could focus on low capacity areas with an eye toward simultaneously developing a sense of community among residents while also addressing specific disaster risk mitigation, preparedness, response, and recovery capabilities. Such a vision is by no means idealistic or utopian. Communities that are well organized, broadly connected, and present the capacity to act, will be able to prepare, respond, and recover far more quickly than sites that are not. The human, social, and economic savings of such capacities are therefore immeasurable.

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