

Educating Communities to Sustain Economic Health in the Face of Disasters

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Synopsis

Holistic, integrated emergency management requires long- and short-term planning of socio-economic sustainability. To meet this challenge, a new Federally offered educational course in the United States offers an approach and methodology with which a community can more effectively implement its disaster resistance preparedness, mitigation and recovery efforts to protect its economic interests.

INTRODUCTION

A community's economic health is directly tied to its continuing ability to sustain jobs and to generate revenue for long-term economic growth. Guidance is regularly needed for communities to address the uniqueness of their own locale—its hazards, risks, cultural challenges, population demographics, economic resources and partnership opportunities—to reduce economic disruption from disaster and increase socio-economic sustainability. A new educational course entitled *Disaster Resistant Jobs: Strategies for Community, Emergency and Economic Risk Management* was developed by the United States of America's Federal Emergency Management Agency and Economic Development Administration to help individuals in the United States and from around the world address the issues of their own community and work together with partners with the goal of gaining greater sustainability.

Issue Concerns

Communities suffer from natural, technological and human-caused disasters every day. Within each community, professionals, citizens and organized groups work independently and collaboratively to help safeguard the local economy from the economic disaster

impacts. Some of these entities have never worked together in a cohesive manner, or done so in a way that supports long-term sustainable working relationships. Groups that play significant roles include emergency managers, economic developers, business leaders, local and regional political leaders, and non-governmental organizations. Concerned citizens also play important roles. All of these groups, individuals, as well as many others, have important roles as possible partners in developing and implementing a disaster-resistant planning process.

By involving these invaluable groups in an integrated process a new approach is taken to leverage resources for effective mitigation and long-term economic sustainable growth. By understanding and addressing the fundamental socio-economic issues, the resources and disciplines can be more effectively brought together to build safeguards for lives, property and economies of our society when disaster does strike.

Unfortunately, most communities throughout the world have not developed these invaluable connections, either due to lack of understanding of how the different groups can work together effectively, or because the system is not in place to encourage or support this happening. The world is changing so rapidly that we can no longer afford to not develop these

relationships that create a basis for creating a systems approach to community sustainability.

Global Changes

The losses from disaster grow at an alarming rate throughout the world, but particularly in regions such as Southeast Asia, the most disaster prone region of the world. While the shifting natural and human interface is deeply complex, there are many easily identifiable factors that have contributed to the growing disaster losses. Some of these are:

- Disrupted ecosystems
- Shifting demographics
- Changing settlement patterns
- Globalization
- Changes in the earth's physical systems
- Expanding infrastructure

These changes are pushing greater interaction at the international level to find new approaches to encourage sustainable hazard mitigation and to approach the disasters from a more *systematic* approach instead of the traditional single perspective approach.

Individuals from different disciplines are now beginning to work together to solve these difficult disaster problems. Specialists and professionals in both the social and physical sciences are sharing their perspectives, crafts, ideas and science to create and implement innovative new approaches to disaster response, recovery and resilience. They are learning from each other and incorporating other disciplines in their problem solving process. Dramatically different disciplines are now factored into the holistic planning process, such as engineering, land use planning, insurance, public education and awareness, remote sensing, economic development and disaster management. This challenging but vital integration addresses the broadest public interest and offered promise of the greatest chance for

change that leads to long-term community economic and social sustainability.

A PARTNERSHIP INITIATIVE

It was in the context of the integrated approach in the late 1990's that the two federal agencies developed the innovative course on economic sustainability for natural disasters. It is a train-the-trainer leadership development course for leaders committed to act as change agents within their community who choose to learn and teach a proactive approach to safeguarding their communities. Special efforts are made to recruit the right mix of people and professional disciplines to share perspectives and build understanding of the contributions of each to the community. The course was revised, restructured and expanded in late 2002/early 2003 to include technological and human-caused disasters.

Participants from public and private sectors from around the United States and other countries focus on building a better understanding their own community and identifying ways to create opportunities for change once they return. The hope is that these individuals will return home to implement their new theories and protocols. The philosophy underlying the course is to build more effective communication through partnership--partnership and leadership collaboration among stakeholders. Collaboration and consensus-based decision-making are the critical components sought to ultimately gain resilience and sustainability.

The key components to building economic disaster resistance make up the fundamental theory and structure of the course. These components are worthy of consideration for all communities facing the complex challenges of disaster resilience and recovery. Understanding these components can provide a basis for more effectively justifying an investment

of community time and resources, and to overcoming resistance to take action. A brief description of several of these elements will be remaining focus in this paper.

Disaster-Resistant Economic Development Planning Process

Each community is dramatically different in its character, makeup and ability to respond to disaster. Five critical steps of the planning process begin the work of moving from theoretical to specific—this is done by addressing the details of disaster impacts on a specific local economy:

1. *Hazard Vulnerability Analysis* The first step analyzes the probabilities and risks of various types of disasters to the built environment. This step evaluates how disasters affect key buildings and services such as social-cultural, health, economic, infrastructure, environmental, life safety.
2. *Economic Vulnerability and Economic Impact on the Community* The second step assesses economic base and its diversity and explores the potential economic impacts of disasters.
3. *Identifying Mitigation Activities* The third step uses the information developed in steps one and two to identify and prioritize all of the actions that can be taken to lessen the impacts of disasters—on business and industry, government, built environment, infrastructure and other key elements of the community.
4. *Economic Disaster Planning* This step explores the different economic response and recovery scenarios, the needed and potential resources (primarily U.S. based resources), and the actions that can be taken before

during and after the disaster.

5. *Business Recovery* In addition to governmental planning, the approaches of the private sector are addressed through continuity planning.

Linking Hazard Vulnerability and Risk Assessment to the Economic Base

Disasters happen regularly, most often without news to the press or the outside world. These might be limited to one building or business, a neighborhood or region of the city. Then there are the disasters that occur on a grander scale, during which times the media carries the news throughout the country and around the world. Large or small, most disasters arrive with little or no warning, circumstances change rapidly, and the events have the potential for substantial, long and short-term destruction. This is particularly true for business and industry.

As a result of a disaster, the business community may experience any of the following impacts:

- Lost productivity and employment
- Declining population base
- Tax revenue losses
- Lost sales revenues
- Emotional effects on victims
- Disrupted vendor supply

When businesses fail, the whole community struggles to recover. A widely destructive event creates disruption for the local economy. It is important to identify the community's economic vulnerability to risk and to hazard impacts. Questions to consider include:

- What are the primary economic sectors?
- How vulnerable are they to hazards?
- Which are the largest employers? Most strategic?

- Where are they located?
- How vulnerable are they to hazards?

Ripple Impacts of Disasters

The interdependencies between sectors can have far-reaching effects when an event occurs; disasters cross many geographical boundaries. The interruption of one business can launch a chain reaction by also disrupting those companies that supply it with materials or equipment and those that in turn depend on it for materials or supplies. Consider the following three examples cited in the course:

January 1995 Kobe, Japan Earthquake
Production impacts were due to delay of parts availability. Some U.S. facilities of the Boeing Company and Apple Computer, Inc. suffered production losses of up to six weeks following the earthquake. They could not operate without the needed supplies.

August 2003 North American Power Blackout
Widespread power outage affected approximately 50 million people in seven US states and Canada in nine seconds (*Newsweek* 8/25/03).

August 1992 Hurricane Andrew
Extensive short and long-term impacts were experienced. Job and revenue losses, population losses (moving out of region, relocating to another instead of back to Miami-Dade), escalated housing prices, decline of household incomes, and increased insurance premiums.

Building an Economic Baseline

Assessing a community's economic base allows a determination of the sources of economic activity and an analysis and forecast of trends and changing demographics. Two possible approaches to this are through employment and income.

Another critical step in the disaster planning process is identifying the economic sources of the community. To do this, one—or more appropriately, a partnership team—must analyze the working components and economies of the community.

Economic Indicators: What Are They and Where Do We Find Them?

Indicators build an understanding of the workings of a local, regional or national economy by providing statistical data about various dimensions of economic activity and wellbeing. These indicators can be invaluable when assessing the impact of a potential disaster on the community's economic base.

For instance, if a community depends totally on raising cattle, a foreign animal disease, such as foot and mouth disease, would have a significant impact on that community's economic base. The outbreak of the same disease in a community in which only a small percentage of the economic base is based on agriculture and the greater percent is from manufacturing would be vastly different.

While economic indicators vary extensively from community to community, some common themes run throughout the world.

- Employment
- Public Finance
- Population Demographics
- Commerce
- Housing
- Real Estate
- Financial Institutions

By analyzing these key elements of the community, as well as others that reflect the uniqueness of each individual community, a baseline can be established from which effective, holistic decisions can be made in the search for sustainable

development and growth in a disaster prone area.

Economic Impact Analysis

If an economic development planning process has been undertaken, then the community is in a much more prepared situation to move efficiently towards rebounding economically after a disaster strikes. An economic impact analysis is a process in which this community can move forward intelligently to compare the pre-disaster economy to the post-disaster situation.

Having defined the pre-disaster state of the economy provides the intelligence regarding the economy's strengths, weaknesses, drivers and growth patterns. External trends and forces for the community provide solid understanding of where the community was headed (sometimes positive, sometimes negative). Characterizing the specific pre-disaster economy gives the assessment clear factual data, trends, and predictions of where the economy was headed.

Once the disaster happens, an assessment can be done to determine the impacts—both long term and short term—to the economy, building off of the intelligence gathering in the pre-disaster baseline. Extensive use of the partnering members of any kind of disaster planning group provide access, insights and resources that would not be available if one sector (e.g. emergency management) were to embark of the analysis independently.

SOCIAL-CULTURAL DIMENSIONS

Implicit to this disaster resistant economic planning process is the need to accurately identify the social and cultural components of community. Mistakes are commonly made when the planners do not take the time to accurately identify and thoroughly understand the characteristics of the community.

Taking time to define the *social landscape* of the community is required to accurately address its uniqueness, trends, and future. In doing so we move data into intelligence, and stop using a non-efficient standardized approach to assessment of risks and

implementation of effective sustainable planning processes.

Defining Community

An effective beginning point is defining *community*. Does the term represent an area based on geographical boundaries? Political boundaries? Demographics? Language? Traditions? Religion? Understanding the cultural definition of this overly used, often-misinterpreted term starts the planning process with clear expectations of who and what is being addressed for economic sustainability?

Globalization has challenged our concepts of community by striking down physical boundaries and expanding community to individuals scattered around the globe. New considerations must be taken when defining economic communities and the members of those communities. For example, India is now intimately connected to the *community* of high tech commerce in the United States and elsewhere via computer networks.

Cultural and Demographic Profiles

By building demographic and cultural profiles of the community for which we wish to plan, we can more effectively identify the ways in which the economy works to meet the needs of those on whom it depends.

The changes of the recent years have profoundly impacted the character and continuity of our communities. Through the use of profiles we can define its uniqueness, better understand risk exposure, implement better planning practices, and undertake successful risk reduction methods.

The use of such surveys and tools is strongly encouraged in the *Disaster Resistant Jobs: Strategies for Community, Emergency and Economic Risk Management* course and the disaster resistant economic planning process. Profile questions consider such items as language, ethnic makeup, high or low context societies, use of technology and many others.

The essential need to move from theory to practical application of the analysis and planning process begs the emergency manager, economic developer,

communication professional and others to identify these unique aspects of the community. From the experience of this author, and others involved in the development of the described course, the planning process will only be successful if it is crafted to address the entire population represented in the community.

CONCLUSION

By utilizing a systematic, multi-disciplinary team approach to a disaster resistant economic planning process, the economic interests of communities and jurisdictions are more effectively preserved and protected from the effects of natural, technological and human-caused disasters. The *Disaster Resistant Jobs: Strategies for Community, Emergency and Economic Risk Management* educational course provides a foundation for understanding and implementing this complex process. The course, and more importantly, the methodology briefly introduced in this paper, offers a starting point in the conversation that strongly encourages integrating critical community assets and human resources into a partnership that crosses hard and soft sciences, and brings together disparate community members, to ensure greater community economic sustainability.