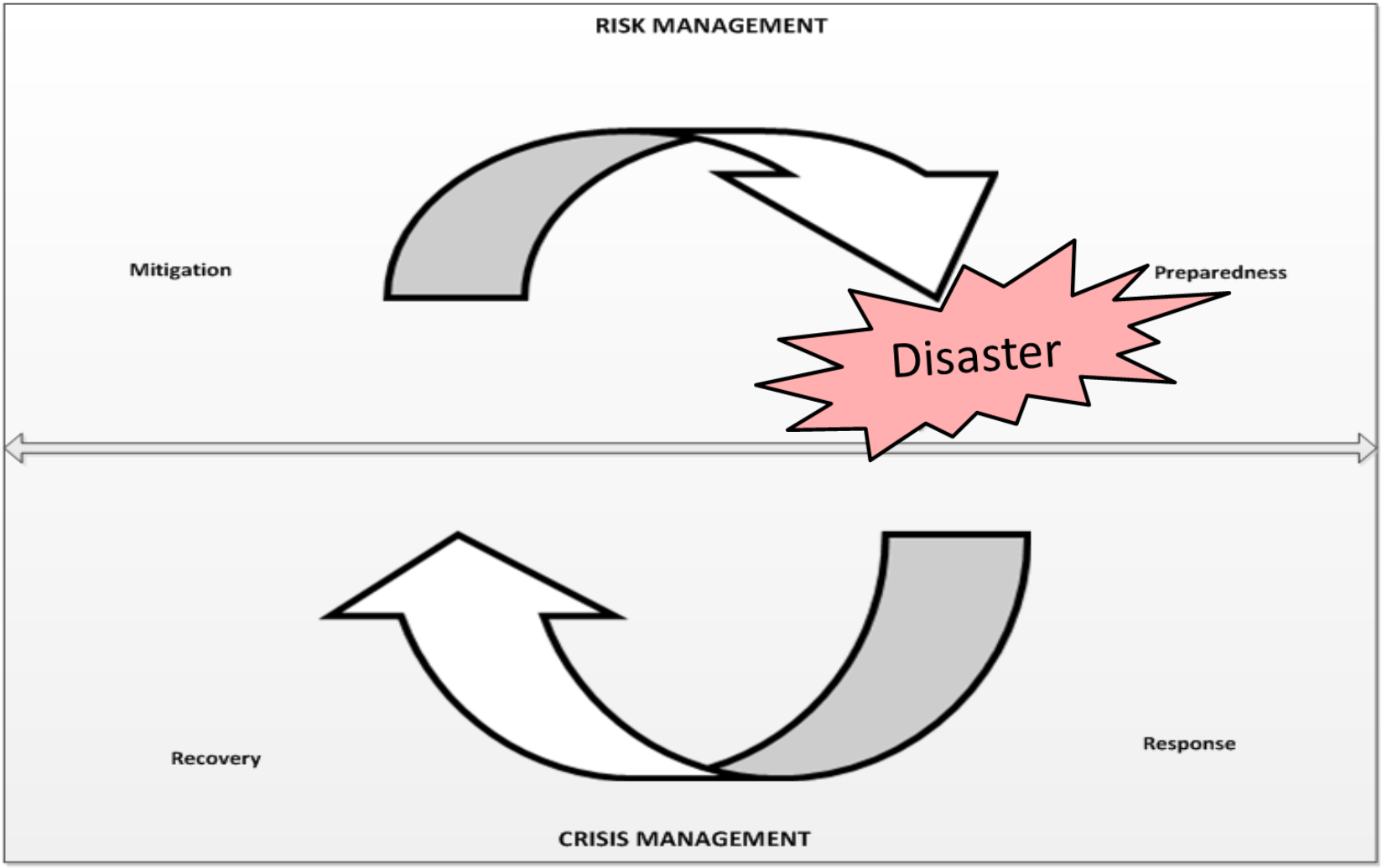
Community Disaster Resilience

Overview

- Disaster Management Cycle
- Community Disaster Resilience
- Hands on Approach for Increasing Community Disaster Resilience
- Addressing Weaknesses
- Planning for the Future
- Best Practices
- CHR Resiliency Development

Disaster Management Cycle



Planning in Disaster Management

Mitigation	Preparedness	Response	Recovery
Minimizing effects of disaster.	Planning how to respond.	Efforts to minimize the hazards created by a disaster.	Returning the community to normal.
• Hazard mitigation plans • Floodplain management plans. • Resiliency plans • Stormwater management plans. • Building and zoning codes.	• Preparedness plans • Emergency exercises/training • Warning systems	• Emergency operations plans • Emergency support function (ESF) Plans • Search and rescue	• Long-term recovery plans • Temporary housing • Medical care

Mitigation

Disaster Phase	Earthquake	Storm (cyclone, typhoon, hurricane)	Landslide	Flooding
Prevention/ Mitigation	- Seismic design - Retrofitting of vulnerable buildings - Installation of seismic isolation/ seismic response control systems	- Construction of tide wall - Establishment of forests to protect against storms	- Construction of erosion control dams - Construction of retaining walls	- Elevation of homes - Removing homes from floodplain - Culvert improvement

Preparedness

Disaster Phase	Earthquake	Storm (cyclone, typhoon, hurricane)	Landslide	Flooding
Preparedness	- Construction and operation of earthquake observation systems	- Construction of shelter - Construction and operation of meteorological observation systems	- Construction and operation of meteorological observation systems	- Notification - DFRIMs - USGS River Gauges
	- Preparation of hazard maps - Food & material stockpiling - Emergency drills - Construction of early warning systems - Preparation of emergency kits			

Response

Disaster Phase	Earthquake	Storm (cyclone, typhoon, hurricane)	Landslide	Flooding
Response	- Rescue efforts - First aid treatment - Fire fighting - Monitoring of secondary disaster - Construction of temporary housing - Establishment of tent villages			

Recovery

Disaster Phase	Earthquake	Storm (cyclone, typhoon, hurricane)	Landslide	Flooding
Recovery	- Disaster resistant reconstruction - Appropriate land use planning - Livelihood support - Industrial rehabilitation planning			

The DM Cycle and Community Disaster Resilience

- The role of the DM Cycle in our communities?

 - If all four elements are executed correctly will our communities be more resilient?

- Yes…… but we need to pay attention to the Social, Economic, Institutional and Infrastructure aspects present within our communities.

Community Disaster Resilience Defined

Resiliency is the capability of social units (e.g., organizations, communities) to mitigate hazards, control the effects of disasters, and carry out recovery activities in ways that minimize social disruption, while also mitigating the effects of future disasters. Consequently, strength, flexibility, and the ability to cope with and overcome extreme challenges, are the hallmarks of disaster-resilient communities.

Properties of Community Disaster Resilience

- Robustness of a system
- Redundancy (alternatives in case one component fails)
- Resourcefulness
- Rapidity (speed of recovery)

Bruneau (2006)

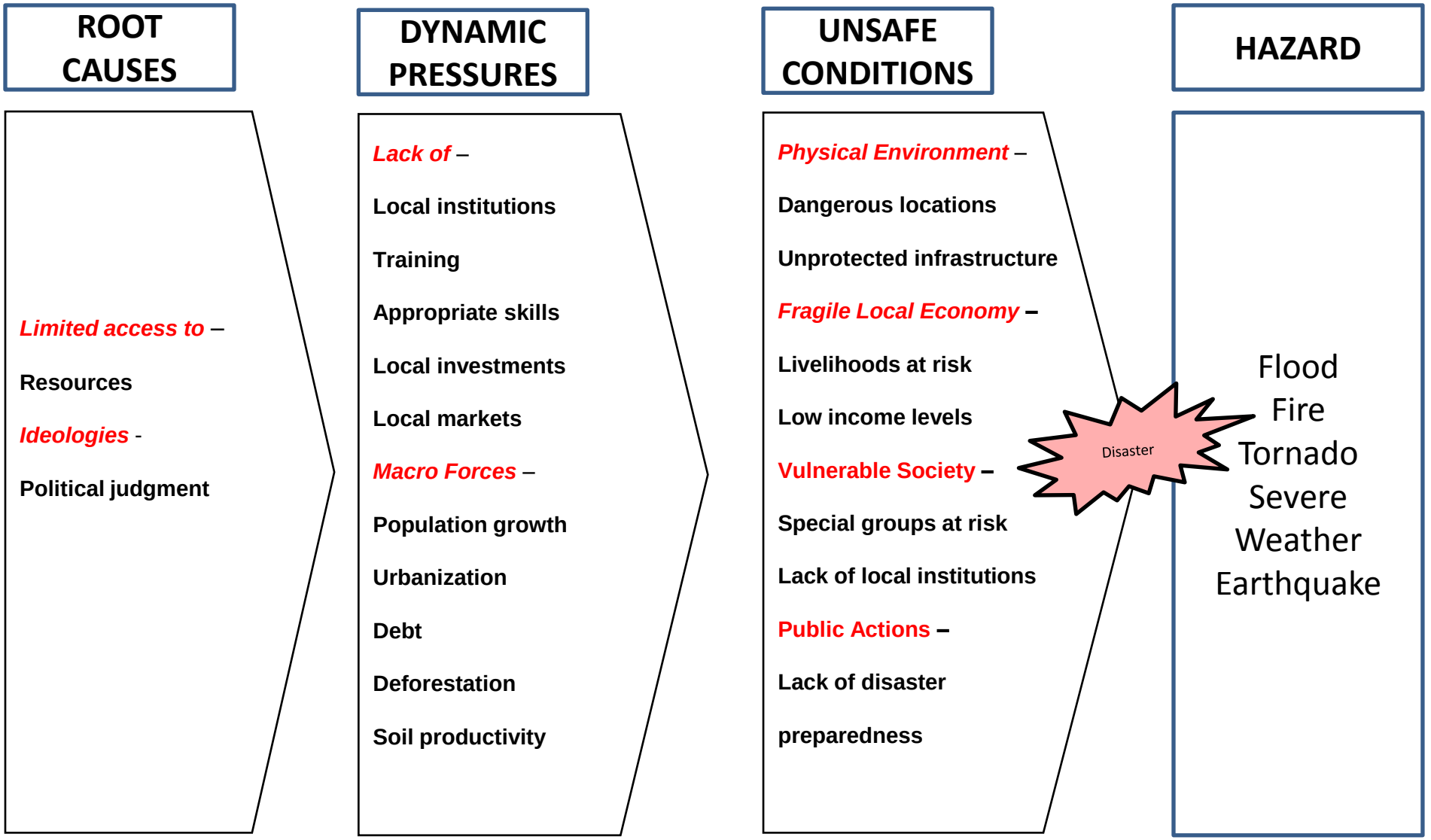
Community Disaster Resilience

Author	Dimensions
Bruneau et al. 2006	**Technical, Organizational, Social and Economic**
Simpson 2006	**Community characteristics, Social Process, Functional, Preparedness Behavior, Operational, Community Hazard Experience**
Twigg 2007	**Social Capital and Governance**
Norris et al. 2009	**Economic Development, Information and Communication, Community Competence and Social Capital**
Cutter et al. 2010	**Social, Economic, Institutional, Infrastructure and Community Capital**

Hands on Approach for Increasing Community Disaster Resilience

- First we need to know what makes us vulnerable
- Root Causes
- Dynamic Pressures
- Unsafe Conditions

Progression of Vulnerability



Addressing Weaknesses

- So how do we address our weaknesses?
- By strengthening our dimensions
  - Economic Development
  - Social upliftment
  - Infrastructure upgrade
  - Increase competence

Planning for the Future

- FEMA has resilience planning in mind
- 2030 Vision – 16 Key Indicators

Some of the indicators are:

- Climate change… it is a reality
- Economic uncertainty
- Keep businesses involved
- Aging infrastructure
- Increase education and awareness

Planning for the Future cont.

- Community involvement (instill ownership)
- Utilize volunteers
- Resource sharing and co-operative agreements
- Identify hidden vulnerabilities
- Keep technology changes in mind
- Plan for the unexpected

Best Practices

- Gulf Coast
- Charleston, SC.
- Nokia/Ericsson

Best Practices

Example

Capital Flows a Critical Lifeline on the Mississippi Gulf Coast [1]

Gulf Coast-based Hancock Bank has a long history of storm preparedness and contingency planning. Despite the unprecedented devastation, within days of Hurricane Katrina's landfall, Hancock Bank reopens 40 bank branches even though electricity is not restored to the region. These branches allow anyone, whether they are existing Hancock customers or not, to withdraw up to $200 in cash in exchange for simple contact information. This act of faith puts more than $42 million in cash into Gulf Coast communities in the week following the storm. Within 5 months of the storm, the bank opens 13,000 new accounts and overall deposits grow by $1.5 billion. Within 3 years, all but $200,000 of the monies lent in the days following the storm are returned to the bank. Hancock Bank's gamble pays off and puts critical cash into the hands of Gulf Coast residents.

This has a number of benefits – both financial and psychological. According to the Honorable Brent Warr, former Mayor of Gulfport, "Roughly 39 percent of Gulfport's city budget is based on sales tax. It was vital that banks, Home Depot, Wal-Mart, grocery stores, shopping centers, car dealerships, and restaurants were up and running quickly, for the citizens' sense of normalcy and for the sake of funding city services. We spent a lot of energy in those early months encouraging the return of retail."

Gulfport is fortunate that its retail corridor is several miles inland and weathered the storm with minimal damage. Box stores in other communities were completely destroyed. Gulfport sees a strong uptick in sales tax revenue following Katrina as much of Gulf Coast Mississippi relies on Gulfport retail for their rebuilding needs.

[1] Community Resilience System Initiative. (2011). Community Resilience System Initiative (CRSI) Steering Committee Final Report – A Roadmap to Increased Community Resilience.

Best Practices

Example

Economic Disaster Averted in Charleston, South Carolina [1]

Charleston, South Carolina, has experienced its share of disasters – the usual coastal threats of destructive winds and invading water as well as lesser known but equally deadly seismic disturbances. In September 1989, Hurricane Hugo, a Category 4 storm, came ashore in Charleston with a 5 foot storm surge, causing extensive wind damage. At the time, Hugo was the costliest hurricane in U.S. history. Five years later, just as the region is overcoming the impact of Hugo, the Charleston area was subjected to another, albeit markedly different, disaster with the 1993 announcement that the naval base in North Charleston would close. As the region's major employer, the closure had serious economic implications. An economic disaster was expected when the federal government announced
its plan to close the Charleston Naval Shipyard, Naval Station, Naval Supply Center, and Naval Hospital.

In response, local leaders from Charleston and the three surrounding counties with their Chambers of Commerce banded together and formed a Tri-County regional development organization. They reenergize their Tri-County Council of Governments as a regional mechanism for cooperation and developed a plan to deal with the impending economic disaster – the loss of 45,000 jobs to the area.

Together, they implement a strategy to attract jobs and businesses and redevelop the valuable water front property historically occupied by the Navy Yard.

In the decade following the closure, Charleston's job growth is double the rate for South Carolina.

Today, the Navy Yard is a redevelopment that comprises 80 different public and private entities and provides a home to diverse businesses that include government services firms, ship-focused manufacturing, and high-tech companies. The Honorable Keith Summey, Mayor of North Charleston, recalls, "We were looking at potential economic devastation. Instead of letting that happen, we came together as a Tri-County community and made a plan.

[1] Community Resilience System Initiative. (2011). Community Resilience System Initiative (CRSI) Steering Committee Final Report – A Roadmap to Increased Community Resilience.

CHR Resiliency Development

- CHAMPS Resiliency Assessment
- Commonwealth Community Resiliency Initiative

Community Disaster Resilience

- Five key dimensions present within a community
- Dimensions:

- Social Resilience

- Economic Resilience

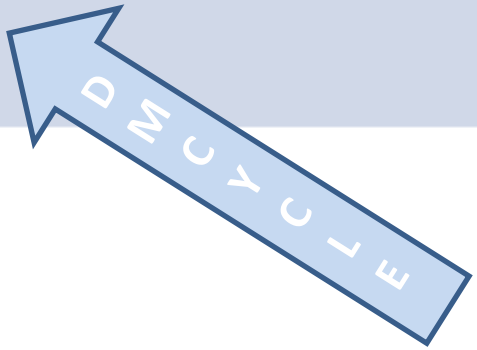
- Institutional Resilience

- Infrastructure Resilience

- Community Capital (Cohesion and Involvement)

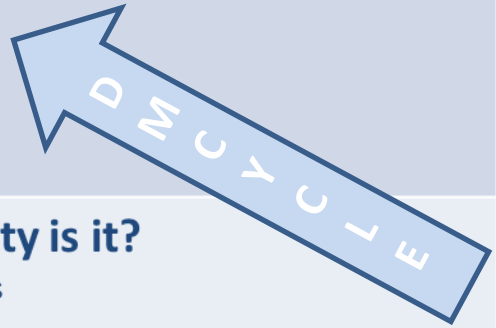
Community Disaster Resilience

Operational Resilience	Socio-Economic Resilience
Dimensions Institutional Infrastructure	**Dimensions** Social Economic Community Capital



Community Disaster Resilience

Operational Resilience	Socio-Economic Resilience
Dimensions Institutional Infrastructure	**Dimensions** Social Economic Community Capital
Who's responsibility is it? Emergency Managers Elected Officials	**Who's responsibility is it?** Economic & Community Development Agencies Community Leaders Elected Officials



Community Disaster Resilience

Operational Resilience		Socio-Economic Resilience	
Dimensions Institutional Infrastructure		**Dimensions** Social Economic Community Capital	
Who's responsibility is it? Emergency Managers Elected Officials		**Who's responsibility is it?** Economic & Community Development Agencies Community Leaders Elected Officials	
Modifiers Emergency Response Hazard Mitigation Floodplain Management	Building & Zoning Codes Stormwater Management	**Modifiers** Comprehensive Planning Community Recovery Business Continuity Political	Employment Characteristics Vulnerable Populations Civic Engagement

Q & A

THANK YOU