

Session No. 5

Course Title: Disaster Planning and Policies

Session 5: Vulnerability: Demographic, Economic and Political Factors

Time: 3 hrs

Learning Objectives:

- 5.1 Review definitions of vulnerability and discuss the concept of differential vulnerability
 - 5.2 Discuss the factors that give rise to social, economic and political vulnerability
 - 5.3 Identify planning and policy interventions that can minimize vulnerability at each stage of the disaster management cycle
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Scope:

This first session of the *Preparedness and Planning* module provides important information on the factors that give rise to demographic, economic and political vulnerability. By the end of the session, student will also appreciate that such vulnerabilities vary within and among communities and be exposed to intervening plan and policy options that can help minimize such vulnerabilities.

Student Readings (also referred to in the subsections below):

- Bolin, B. (2007). Race, Class, Ethnicity, and Disaster Vulnerability. Chapter 7, in H. Rodriguez, E. L. Quarantelli and R.R. Dynes (Eds.). *Handbook of Disaster Research*. New York, N.Y.: Springer.
- Laska, S., and Morrow, B. (2007). "Social vulnerabilities and Hurricane Katrina: An Unnatural disaster in New Orleans." *Marine Technology Society Journal*, 40(4) 16-26.
- Phillips, B.D. and Fordham, M. (2009). "Introduction." Chapter 1, in B.D. Phillips, D.S.K. Thomas, A. Fothergill and L. Blinn-Pike (Eds). *Social Vulnerability to Disasters*. Boca Raton, FL: CRC Press
- Smit, B. & Wandel, J. (2006). Adaption, adaptive capacity and vulnerability. *Global Environmental Change* 16: 282 - 292.
<http://www.uio.no/studier/emner/annet/sum/SUM4015/h08/Smit.pdf>

General Requirements:

The readings for this session are on the syllabus and the instructor should remind students that the materials should be read and reflected upon before class. The information about the readings should also be placed on an appropriate course website.

Instructional Methodologies: The instructor can choose to employ a mixture of tools for presenting the course content. For example, the content presented here can be summarized into a Power Point presentation.

5.1 Review definitions of vulnerability and discuss the concept of differential vulnerability

Refer to Readings:

- Bolin, B. (2007). Race, Class, Ethnicity, and Disaster Vulnerability. Chapter 7, in H. Rodriguez, E. L. Quarantelli and R.R. Dynes (Eds.). Handbook of Disaster Research. New York, N.Y.: Springer.
- Laska, S., and Morrow, B. (2007). "Social vulnerabilities and Hurricane Katrina: An Unnatural disaster in New Orleans." *Marine Technology Society Journal*, 40(4) 16-26.
- Phillips, B.D. and Fordham, M. (2009). "Introduction." Chapter 1, in B.D. Phillips, D.S.K. Thomas, A. Fothergill and L. Blinn-Pike (Eds). Social Vulnerability to Disasters. Boca Raton, FL: CRC Press
- Session 4 of this course on "Measuring and Mapping Vulnerability".
- Smit, B. & Wandel, J. (2006). Adaption, adaptive capacity and vulnerability. *Global Environmental Change* 16: 282 - 292.
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5.1.1 Vulnerability and Social Vulnerability: A Quick Review

Recall from Session 4 "Measuring and Mapping Vulnerability" that vulnerability was defined as susceptibility of human settlements to the harmful impacts of natural hazards. This susceptibility has implications at the individual, household and community levels and potentially harmful outcomes such as injuries, deaths, damage to housing and infrastructure, and destruction of businesses and livelihoods. It is therefore important to capture both the physical/exposure and social/human dimensions.

Note to Instructors: Remind students that the focus of this session is on the latter (i.e. social/human dimensions) before moving on to define social vulnerability in more detail.

There are many definitions of social vulnerability, including those that seek to:

- highlight the differences with physical vulnerability;
- incorporate demographic, economic, political vulnerability as subcomponents;
- make the connection to “social inequalities and historic patterns of social relations that manifest as deeply embedded social structural barriers that are resistant to change” (Philips and Fordham, 2010, 4); and
- focus on coping capacity with regard to recovering from the impacts of a natural hazard.

Bolin and Stanford (1998)¹ seem to best capture this combination of concepts that social vulnerability is produced by unequal exposure to risk coupled with unequal access to resources. The scholars specifically focuses our attention on access (or lack thereof) to resources. As Laska and Morrow (2007, 21) have stated in their article on “Social vulnerabilities and Hurricane Katrina” that:

The ability of any given community to mitigate against a hazard, and to respond and recover effectively from a disaster is a direct result of its economy and the political decisions that affect the distribution of resources (Laska and Morrow, 2007, 21)

Political vulnerability, while less discussed, is a key consideration. As pointed out by scholars such as Laska and Morrow (2007, 16) “social vulnerability factors are not mutually exclusive, but tend to be clustered in patterns of vulnerability that place some communities and households at particular risk”.

Segue to next section:

Instructors should remind students that social vulnerability and its related demographic, economic and political factors are not static and vary across space and time.

5.1.2 Differential Vulnerability

As previously discussed in Session 4, instructors should discuss with students that social, economic and political vulnerabilities vary across communities and also among households. Using the example of New Orleans and Hurricane Katrina, Laska and Morrow (2007) also reminded us that that people living in hazardous areas have different levels of risk given that “some have more resources, human and material, to deal with the event” (p. 17). These scholars provide more specifics in the context of the U.S. and the fact that recovery “takes place in the market economy where people are expected to use their own resources, including insurance and savings, to recover” (Laska and Morrow, 2007, 21). They explained that while losses to poorer

¹ Bolin, R. and Stanford, L. 1998. *The Northridge Earthquake: Vulnerability and Disaster*. Routledge: New York, NY.

households will be less in terms of dollars, the relative impacts can be far greater in terms of resources to respond and recover.

Using the context of climate change, Smit and Wandel (2006, 287) contribute to this discussion by reminding us that:

- a system's adaptive capacity and coping range (one feature of capacity) is not static;
- external socio-economic and political factors may lead to a narrower coping range;
- coping ranges are flexible and respond to changes in economic, social, political and institutional conditions over time.

This differential vulnerability, including the differential access to “resources” and varying levels of coping capacity, should be of concern to local emergency management officials, disaster planners and policy-makers. This is in addition to identifying the areas within their communities that have population segments with the highest levels or clusters of socially vulnerable residents.

Note to Instructors: Before moving on to the factors that give rise to the social, economic and political vulnerability, instructors can spend 15-30 minutes engaging the students in a more in-depth discussion about the definitions of social vulnerability and the concept of differential vulnerability.

Discussion topic: #1:

We discussed the many definitions of social vulnerability on pages 2-3 of this course session and presented that of Bolin and Stanford (1998) as the most representative and comprehensive – that is, *social vulnerability is produced by unequal exposure to risk coupled with unequal access to resources*. Based on the course material presented so far, let's document some examples of the “resources” referred to in this definition.

Discussion topic: #2:

According to Laska and Morrow (2007, p.20), “*using a social science “lens” can help explain the differential impact of Hurricane Katrina despite what appears on first blush to be damage so widespread that it impacted the entire community in similar ways ... the death rates by race and gender reflect the high vulnerability of certain groups*”. Why should planners and policy makers consider “differential vulnerability” as part of pre- and post-disaster planning processes?

5.2. Discuss the factors that give rise to demographic, economic and political vulnerabilities

Refer to Readings:

- Bolin, B. (2007). Race, Class, Ethnicity, and Disaster Vulnerability. Chapter 7, in H. Rodriguez, E. L. Quarantelli and R.R. Dynes (Eds.). *Handbook of Disaster Research*. New York, N.Y.: Springer.
- Laska, S., and Morrow, B. (2007). "Social vulnerabilities and Hurricane Katrina: An Unnatural disaster in New Orleans." *Marine Technology Society Journal*, 40(4) 16-26.
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- Session 4 of this course on "Measuring and Mapping Vulnerability".

One cannot discuss vulnerability without taking an in-depth look at demographic and socioeconomic attributes such as poverty, income, education, gender, age, race, ethnicity, housing tenancy, health and physical ability. These demographic predictors of social vulnerability are frequently associated with hazard exposure because the population segments with the fewest psychological, social, economic, and political resources often disproportionately occupy the most hazardous geographical areas.

Below is a listing of the most common indicators published in the literature. See *Session 4* (Measuring and Mapping Vulnerability) for more details, including data sources.

- income (e.g. low income/high poverty, housing affordability);
- economy (e.g. occupations with focus on single sector economic dependence, employment gain/loss);
- age and gender (e.g. elderly, children/youth);
- disability (e.g. physically handicapped; mentally handicapped; ill; require oxygen or other special appliances);
- disadvantaged (e.g. single head of households; government-assisted households);
- race/ethnicity (e.g. ethnic/racial/language minorities);
- education and literacy levels;
- housing tenancy (renters vs. owners)

Additional factors that have become increasingly critical are:

- composition of families and households. According to Philips and Fordham (2010, 3), "many programs fail to address the diversity of families, including households of unrelated individuals";
- lack of access to resources by those most in need of assistance because of qualification requirements. According to Bolin (2007, 125), after the Northridge earthquake, "federal housing assistance programs were criticized for their class biases. Programs provided far less (or no) assistance to renters, the unemployed and

- the homeless while they provided the most generous assistance to the middle class employed homeowners”;
- timing of disaster as was seen in the case of Katrina. According to Laska and Morrow (2007, 20), “the storm hit on August 29, 2005 , two days prior to the end of the month pay day for the working class; and the receipt of social security and other government aid”²; and
 - kinship networks who provide a means of allowing greater access to economic resources (Smit and Wandel, 2006, 288).

Laska and Morrow (2007) also provided other important insights that are applicable beyond hurricane Katrina. They noted that:

- “past social and political decisions, combined with economic decline and engineering errors, laid the groundwork for turning this hurricane into a disaster of catastrophic proportions” (Laska and Morrow, 2007, 16); and
- political, social and economic factors determine what land is developed, what is built and who lives there” (Laska and Morrow, 2007, 17)

The issue of political vulnerability was also referred to in Section 3 of this course as presented in the following excerpt. “Long-term vulnerability can potentially result from elected officials who adopt short-term measures to satisfy constituents and groups, particularly the more politically and economically powerful ones. Engaging in disaster response is likely to yield greater political dividends than adopting less media-friendly mitigation measures. With the twenty-four news cycle, political careers may be broken or bureaucrats may lose their jobs if disaster response is seen as being inadequate.” We have seen this play out time and time again; including with Hurricane Sandy most recently.

Note to Instructors: Before moving on to disaster planning and policy interventions that can reduce vulnerability, instructors can spend 15-30 minutes engaging the students in a more in-depth discussion about disaster scenarios that showcase the convergence of social vulnerability factors.

Discussion Topic #3: Students can be asked to name and discuss disasters that have highlighted cross-cutting issues that and interrelated factors that converge to shape social vulnerability. An example of a table is started below to facilitate completion of this type of discussion.

² It seems like there was some learning that took place by the time that the 2008 hurricanes struck the Gulf Coast. According to Philips and Fordham (2010, p.5), entitlement checks like veterans’ and social security checks can be released early to spur departures. They provided that example to alert us of the importance of recognizing the nature of vulnerability in order to design solutions and reduce consequences.

Issue/Scenario	Other Details or Examples	Reference
Post-disaster recovery	- Jobs of less affluent working class families are most likely to be in the less informal sector or in small businesses that are at greater risk of being closed in the aftermath of a hurricane	Laska and Morrow (2007, p. 18)- Hurricane Katrina
Evacuation	Evacuation requires resources including cash and transportation; Evacuation decisions are shaped by income, age, gender, access to information and transportation; health and physical mobility; occupations and social networks outside the city.	Fussell, 2005 ³ ; cited in Laska and Morrow, 2007, p. 19)
Participatory planning and partnerships	Include people with disabilities in all phases of disaster management so that they can bring fresh perspectives to the planning table (transportation, evacuation, shelter, long-term housing).	Philips and Fordham (2010); Presidential Executive Order 13347

5.3 Identify planning and policy interventions that can minimize vulnerability at each stage of the disaster management cycle

Refer to Readings:

- Phillips, B.D. and Fordham, M. (2009). "Introduction." Chapter 1, in B.D. Phillips, D.S.K. Thomas, A. Fothergill and L. Blinn-Pike (Eds). *Social Vulnerability to Disasters*. Boca Raton, FL: CRC Press
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Philips and Fordham (2010, 3) warn that "far too frequently, efforts to reduce vulnerability occur only after a major event has claimed lives and destroyed family assets, including homes, businesses and savings" while we continue to emphasize "preparedness and response rather than understanding how to reduce risk through mitigation and adaptation" (Philips and Fordham, 2010, 11)."

Planners and policy makers must continually assess established practices, analyze current policies, and revise already-existing plans for all four phases of disaster/emergency management (discussed in Session 3.2: Mitigation, Preparedness, Response and Recovery). Excerpts of the

³ Fussell, E. 2005. Leaving New Orleans: Social stratification, networks and hurricane evacuation. *Understanding Katrina: Perspectives from the Social Sciences*. Social Sciences Research Council.

definitions (below) provide broader context for determining the most appropriate planning and policy interventions.

- Mitigation is a “sustained action to reduce or eliminate risk to people and property from hazards and their effects. (Haddow *et al.* 2010, 67). Mitigation actions are pertinent to pre- and post-event phases.
- Preparedness activities occur before the disaster event and require “a state of readiness to respond to a disaster, crisis, or any other type of emergency situation” (Haddow *et al.* 2010, 97).
- Response typically begins when a disaster event occurs or is imminent, and involves the actions taken to save lives and prevent further damage in a disaster or emergency situation.
- Recovery takes place after the disaster and involves the actions that take place to return the community back to the pre-disaster state or “a new normal”.

Note to Instructors: The table below presents one approach to visually depicting the relationship between the phase of disaster/emergency management and planning/policy actions that can help reduce individual, household and community vulnerability. Review this table with the students, and enhance as appropriate.

Phase of Disaster Management	Planning/Policy Actions (Examples)
Mitigation	<ul style="list-style-type: none"> - hazard identification - hazard mapping - social vulnerability assessment - land use planning - develop lists of citizens who need special assistance and/or transportation due to disability - public education programs
Preparedness	<ul style="list-style-type: none"> - evacuation planning - design alternatives to written forms of emergency preparedness materials to cater to people across literacy levels, language barriers, cognitive abilities and age ranges - design warning systems that reach people who are vision and hearing impaired <p>Reference: U.S. Department of Justice, 2008, cited in Philips and Fordham 2010)</p>
Response	<ul style="list-style-type: none"> - designate some shelters as “special needs shelters” and staff them with medical personnel

	<ul style="list-style-type: none"> - provide paratransit systems to evacuate wheelchair users <p>Reference: Laska and Morrow, 2007 (p. 18)</p>
Recovery	<ul style="list-style-type: none"> - post-disaster planning to account for long-term recovery period - avoid compounding vulnerability during post-disaster reconstruction (e.g. do not site interim housing solutions in remote areas; account for access to jobs and social services by vulnerable segments of the population) - restore public transit - engage broad stakeholder groups (e.g. NGOs, HOAs, faith-based groups, social justice groups and groups that emerge following disasters should be included); - involve displaced persons when appropriate

Note to Instructors: If time permits, instructors can spend 15-30 minutes engaging the students in a more in-depth discussion about the types of vulnerability addressed with the planning and policy actions documented in the table above.

For example, designation of “special needs” shelters during the response phase can help address age and disability vulnerability factors.