Socio-economic vulnerability of African Americans to hurricanes in the Gulf Coast of the United States

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Background

- "1900" Hurricane - Killed 8,000-12,000
- Hurricane Katrina (2005)
- Hurricane Ike (2008)
Background

• African Americans are usually the hardest hit during hurricanes in the Gulf Coast region as evidenced by Hurricane Katrina in 2005, among others.
Background

- Total African American population = 43.2 million (14.1% of the U.S. population)
- The GOM States have high percentages of African American population:
  - Mississippi - 37%
  - Louisiana - 32%
  - Alabama - 26%
  - Florida - 16%
  - Texas - 12%
  (U.S. Census 2011)
Background

• Responses to natural disasters are highly influenced by social vulnerability.

• Studies on New Orleans after Hurricane Katrina found that most of the affected African Americans were low income, less educated, not married, older and home renters (Elder et al., 2007)
Socio-economic Vulnerability Factors

• Elderly Population (65+ years)
• Per Capita Income
• Level of Poverty
• Level of Education (at least high school)
• Marital Status
Study Area: Hurricane Risk Counties

NOAA Coastal Risk Atlas Combined Hazard Area

Combined Hazard
1. Hurricane Wind
2. Storm Surge
3. Coastal Flooding

Category
1. Low
2. Medium
3. Medium-High
4. High

http://www.ncddc.noaa.gov/coastalriskatlas/cra.html
Study Area: Hurricane Risk Counties

Hurricane Katrina (2005) Impacted Areas

Source: U.S. Census Data on Hurricane Katrina
Study Area: Hurricane Risk Counties
Study Area: Hurricane Risk Counties

No. of Counties in High to Medium High Risk = 57
No. of Counties in Medium to Low Risk = 106
Total = 163 counties

Hurricane Risk Counties

- High to Medium High Risk
- Medium to Low Risk
- City

Gulf of Mexico
Census Data on African American Population

American Community Survey Data
- Yellow: Data available (>20,000 population)
- White: Not available

Source: ACS Data 2005-2007

Total 110 Counties
American Community Survey 2005-2007

Total Population 19,830,517
Total African American Population 3,691,894 ~18.62%
African American Population
(Census 2000)

Population
- 0 - 20,000
- 20,001 - 100,000
- > 100,000

City

Gulf of Mexico
Counties with Population Decrease

Florida
Gadsden
Levy
Sumter
De Soto

Alabama
Marengo
Clarke

Mississippi
Oktibbeha
Wayne

Louisiana
Vernon
East Feliciana
Iberville
Orleans
Assumption
St. Mary

Texas
Shelby
Jasper
Walker
Matagorda
Victoria

African American Population Change Since Census 2000

Population Change
- Decrease
- Increase
Total Male/Female Distribution of African Americans in All Hurricane Risk Counties

53% Male
47% Female
Socio-economic Condition: Older Population

Counties with High (> 5000) Older population:
- Florida
- Escambia
- Hillsborough
- Polk
- Pinellas
- Alabama
- Mobile
- Mississippi
- Hinds
- Louisiana
- Orleans
- East Baton Rouge
- Jefferson
- Texas
- Harris
- Jefferson
- Polk
Socio-economic Condition: Per Capita Income

Per Capita Income of African Americans in Counties with relation to National Per Capita Income ($26,178)
Socio-economic Condition: Per Capita Income

Deviation from National Per Capita Income ($26,178)

Range of Deviation
- Green: 0 - $5,000
- Yellow: $5,001 - $10,000
- Red: > $10,000
- Beige: No Data

Texas
Brazoria
Cameron
Fort Bend
Socio-economic Condition: Per Capita Income

With relation to National Per Capita Income of African Americans ($17,123)

Counties with African Americans higher than black national income:
- Florida (Leon, Okaloosa, Citrus, Hernando, Pasco, Hillsborough, Monroe, St. Tammany)
- Louisiana (St. Tammany)
- Texas (Harris, Chambers, Fort Bend, Brazoria, Galveston, Victoria, Cameron)
Socio-economic Condition: Level of Poverty

Percentage of African Americans Below Poverty Level

Poverty Status (%)
- No Data
- Low (up to 20%)
- Medium (20% - 40%)
- High (>40%)

Florida Highlands
Socio-economic Condition: Education

In U.S. high school educational attainment is 84% (total; Age 25+)

- Covington, MS - 91%
- Citrus, FL - 59%
- Victoria, TX - 57%
- Sumter, FL - 56%
- Fort Bend, TX - 52%
- Okaloosa, FL - 51%
- Galveston, TX - 50%
- Walker, TX - 50%

Average - 40.65%

Mississippi

Forrest
Socio-economic Condition: Marital Status

Distribution of Unmarried African American Population (Age 15+ years)

Unmarried Population (%)
- No Data
- Low (up to 20%)
- Medium (20% - 40%)
- High (>40%)

Miles

Louisiana
Vernon
GIS visualization of combined socio-economic conditions and ranking of Hurricane Risk Counties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>High</td>
<td>10</td>
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<tr>
<td>Medium</td>
<td>5</td>
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<tr>
<td>Low</td>
<td>1</td>
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1. Hurricane Risk Areas (High-Medium high; Medium-Low)
2. Percentage of African American Population (High/Medium/Low)
3. Number of Older African American Population (High/Medium/Low)
4. Per capita income of African Americans with deviation from National Income (High/Medium/Low)
5. Percentage of African Americans below poverty level (High/Medium/Low)
6. Percentage of African Americans with at least high school education (High/Medium/Low)
7. Percentage of unmarried African American population (High/Medium/Low)
Example

For Escambia County, FL

1. Hurricane Risk Areas (High-Medium High: 10)
2. Percentage of African American Population (Medium: 5)
3. Number of Older African American Population (High: 10)
4. Per capita income of African Americans with deviation from National Income (High: 10)
5. Percentage of African Americans below poverty level (Medium: 5)
6. Percentage of African Americans with at least high school education (High/Low: 1)
7. Percentage of unmarried African American population (High: 10)

Total points = 51
## Ranking

<table>
<thead>
<tr>
<th>Rank</th>
<th>County</th>
<th>State</th>
<th>Value</th>
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<tbody>
<tr>
<td>1</td>
<td>Orleans</td>
<td>Louisiana</td>
<td>56</td>
</tr>
<tr>
<td>2</td>
<td>Ascension</td>
<td>Louisiana</td>
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<td>3</td>
<td>Tangipahoa</td>
<td>Louisiana</td>
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<tr>
<td>4</td>
<td>Mobile</td>
<td>Alabama</td>
<td>51</td>
</tr>
<tr>
<td>5</td>
<td>Escambia</td>
<td>Florida</td>
<td>51</td>
</tr>
<tr>
<td>6</td>
<td>Jefferson</td>
<td>Louisiana</td>
<td>51</td>
</tr>
<tr>
<td>7</td>
<td>Lafourche</td>
<td>Louisiana</td>
<td>51</td>
</tr>
<tr>
<td>8</td>
<td>St. John the Baptist</td>
<td>Louisiana</td>
<td>51</td>
</tr>
<tr>
<td>9</td>
<td>St. Landry</td>
<td>Louisiana</td>
<td>51</td>
</tr>
<tr>
<td>10</td>
<td>Terrebonne</td>
<td>Louisiana</td>
<td>51</td>
</tr>
</tbody>
</table>
Socio-economic Vulnerability to Hurricanes

High vulnerable counties
Value >=40; Total = 43

Florida
Jackson, Gadsden
Escambia, Levy
Citrus, Highlands
Manatee, Lee, Collier
Pinellas, Hillsborough

Alabama
Baldwin, Mobile

Mississippi
Oktibbeha, Hinds
Yazoo, Neshoba, Harrison
Warren, Lauderdale
Jones, Forrest, Jackson

Louisiana
Orleans, Tangipahoa, Iberia
East Baton Rouge, St. Mary
Jefferson, Evangeline
St. Landry, St. Martin
Iberville, Lafayette, SJTB
Ascension, St. James
Vermilion, St. Charles,
Lafourche, Terrebonne

Texas
Jefferson, Matagorda, Nueces
Role of Historically Black Colleges and Universities (HBCUs)

• Historically Black Colleges and Universities (HBCUs) were established as early as 1837 primarily with the purpose to provide “separate but equal” educational opportunities for the Black community.

• In 1992 Walter Allen identified six specific goals of HBCU’s-
Role of Historically Black Colleges and Universities (HBCUs)

1. the maintenance of the Black historical and cultural tradition
2. the provision of key leadership for the Black community given the important social role of college administrators, scholars, and students in community affairs (i.e., the HBCU functions as a paragon of social organization);
3. the provision of an Economic function in the Black community
4. the provision of Black role models to interpret the way in which social, political, and economic dynamics impact Black people;
5. the provision of college graduates with a unique competence to address the issues between the minority and majority population groups; and
6. the production of Black agents for specialized research, institutional training, and information dissemination in dealing with the life environment of Black and other minority communities (Brown and Davis, 2009).
Role of Historically Black Colleges and Universities (HBCUs)

• All these goals indicate that HBCUs are vehicles of change for the socio-economic conditions in surrounding Black communities.

• Considering that the majority of HBCUs are located in Southern States, it is meaningful to further consider the socio-economic condition of GOM states in order to characterize specifically their social vulnerability to disasters and further to identify opportunities to improve these conditions.
Location of HBCUs

HBCU Locations

- HBCUs
- Low (0 - 29)
- Medium (30 - 39)
- High (>40)

Miles
Role of Historically Black Colleges and Universities (HBCUs)

- Financial preparation of this and future generations of students
- Focused research on asset-building/disaster relief resiliency techniques specifically geared towards minority and low income communities
- Focused extension to minority and low income communities in close proximity
Hurricane Preparedness Workshop—“Prepare Pensacola” in Escambia, FL

- The Gulf of Mexico Alliance (GOMA)
- Be Ready Alliance Coordinating for Emergencies (BRACE)
- Southern Regional Asset Building Coalition
- The Little Rock Baptist Church

PREPARE PENSACOLA
A WORKSHOP ON HURRICANE PREPAREDNESS

November 6, 2010
9 am – 3 pm (lunch will be provided on site)
Auditorium, Greater Little Rock Baptist Church
901 N. "A" Street, Pensacola, FL 32501

For more information, please contact: brace@bereadyalliance.org
Phone: (850) 444-7135; (850) 561-2128

Organized by
Hurricane Preparedness Poster Competition
FEMA Federal Aid to States: Disaster Relief

Year | FL | MS | LA | TX | AL
---|---|---|---|---|---
2005 | US $494,147,000 | | | | |
2006 | US $4,168,573,000 | US $6,968,960,000 | | | |
2007 | | | US $3,976,837,000 | | |
2008 | | | | US $4,168,573,000 | |
FEMA Federal Aid to States: Emergency Management Planning and Assistance

- $US 279,511,000 (2006)
- $US 267,913,000 (2005)
- $US 188,417,000 (2007)
- $US 145,448,000 (2008)

States: FL, MS, LA, TX, AL
Thank you!
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