Environmental justice: An Analysis

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Environmental Justice: An Analysis

Native American Forum on Nuclear Issues

University of Nevada, Las Vegas
Dennis A. Bechtel
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Presentation Objectives

• Background
• Importance of the Environmental Justice
• EJ examples
• Regulatory backdrop
• Stigma effects
• Recommendations
The Problem

• “One of the major lessons of environmental justice is that EPA’s past failure to account for aggregation of risks and cumulative impacts has caused EPA’s existing standards to fail to protect human health and the environment in certain communities.”

(Richard Lazarus & Stephanie Tai, *Integrating Environmental Justice into EPA Permitting Authority*)
What is Environmental Justice?

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state and local, and tribal programs and policies. (U.S. EPA, 1998)

Low income – U.S. Census Bureau poverty thresholds and the Department of Health and Human Services poverty guidelines.
Models of Environmental Injustice

• Intentional Bias Model
  – Deliberate racial/social policy in siting Locally Undesirable Land Uses (LULU)

• Institutional Bias Model
  – Rules, procedures, policy-making processes biased against poor and minorities

• Neighborhood Transition Model
  – Poor and minorities arrive after environmental hazard
  – Cannot afford more desirable locations
Environmental Justice Concerns

- Environmental programs do not consider adequately poor and minority communities.
- Low-income and minority populations are disproportionately exposed to air pollution and other environmental risks, according to Environmental Protection Agency (EPA) studies.
- Siting of environmentally undesirable facilities are a low priority in clean up.
- There is racial/class bias in Locally Undesirable Land Uses (LULU) siting.
- There is racial/class bias in environmental protection efforts. (e.g., Superfund)
- Environmental justice is most actively advocated today on behalf of native Americans, Hispanics and black Americans.

R. Bullard et al.
Numerous studies and litigation on the siting of hazardous waste facilities and minority communities in the 1980’s-1990’s.

- Warren County, North Carolina. 40,000 cubic yards (or 60,000 tons) of soil contaminated with the highly toxic PCB illegally dumped along 210 miles of roadways in fourteen North Carolina counties in 1978. State and federal sources spent $18 million to detoxify contaminated soil stored at the PCB landfill.

- A 1999 Institute of Medicine study, *Toward Environmental Justice: Research, Education, and Health Policy Needs*, concluded that low-income and people of color communities are exposed to higher levels of pollution than the rest of the nation.

- *In re Louisiana Energy Services*, 47 N.R.C. 77 (1998), the Nuclear Regulatory Commission reversed in part a determination by the Atomic Safety and Licensing Board that an EIS for a uranium enrichment facility failed to adequately consider disproportionate socio-economic impacts on affected low-income communities of color.
Environmental Justice: A survey

• Mohai and Saha* conducted a comprehensive reassessment of racial inequality in the distribution of the nation’s hazardous waste facilities.

• They concluded that impacts to minorities greater than previously anticipated.

*Racial Inequality in the Distribution of Hazardous Waste: A National-Level Reassessment
Methodology

• Compiled data from the U.S. Environmental Protection Agency’s (EPA) Resource Conservation and Recovery Information System (RCRIS) database.
• The RCRIS database includes all hazardous waste TSDFs* in the United States subject to regulation under the Resource Conservation and Recovery Act.
• The researchers used Geographic Information System (GIS) techniques which when combined with census and other data provided better control for proximity, and Motai and Saha yielded more consistent and definitive results.

* Treatment, storage and disposal facilities
Unit Hazard versus Distance Approach

Figure 1a – Selected TSDFs and host tracts in a large metropolitan area

Figure 1b – Largest host tract containing a TSDF

Figure 1c – Neighborhoods within 1.0 mile of TSDFs using 50% areal containment

Figure 1d – Neighborhoods within 1.0 mile of TSDFs using areal apportionment

Source: Data from U.S. Census Bureau (2000)

Figure 1 • Comparing Neighborhoods around TSDFs Identified by Unit-Hazard Coincidence and Distance-Based Methods
# Demographics of Study Areas

## Table 2: Demographic Characteristics of Aggregate Populations in Neighborhoods Defined by 50 Percent Areal Containment Method Using Block Groups, Census Tracts, and Zip Code Areas as the Building Block Units

<table>
<thead>
<tr>
<th>Variables</th>
<th>Neighborhoods within 1-Mile Radius</th>
<th>Beyond 1-Mile Radius</th>
<th>Neighborhoods within 3-Mile Radius</th>
<th>Beyond 3-Mile Radius</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Block Groups</td>
<td>Tracts</td>
<td>Zip Code Area</td>
<td>Block Groups</td>
</tr>
<tr>
<td>No. of units composing neighborhood:</td>
<td>3,432</td>
<td>859</td>
<td>62</td>
<td>222,966</td>
</tr>
<tr>
<td>Total pop. in 1000s</td>
<td>3,210</td>
<td>2,896</td>
<td>1,035</td>
<td>245,500</td>
</tr>
<tr>
<td>Race vars.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent black</td>
<td>19.1</td>
<td>20.2</td>
<td>15.3</td>
<td>11.9</td>
</tr>
<tr>
<td>Percent Hispanic</td>
<td>21.4</td>
<td>21.8</td>
<td>29</td>
<td>8.6</td>
</tr>
<tr>
<td>Percent nonwhite</td>
<td>44.4</td>
<td>46.2</td>
<td>49.6</td>
<td>24.0</td>
</tr>
<tr>
<td>Economic vars.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean household income</td>
<td>$31,191</td>
<td>$30,598</td>
<td>$31,808</td>
<td>$38,546</td>
</tr>
<tr>
<td>Mean property value</td>
<td>$91,343</td>
<td>$89,747</td>
<td>$128,246</td>
<td>$111,043</td>
</tr>
<tr>
<td>Percent below poverty line</td>
<td>20.0</td>
<td>20.6</td>
<td>21.8</td>
<td>13.0</td>
</tr>
<tr>
<td>Percent unemployed</td>
<td>9.2</td>
<td>9.6</td>
<td>9.3</td>
<td>6.3</td>
</tr>
<tr>
<td>Sociopolitical vars.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent without a high school diploma</td>
<td>35.9</td>
<td>36.5</td>
<td>39.5</td>
<td>24.6</td>
</tr>
<tr>
<td>Percent with college degree</td>
<td>13.4</td>
<td>13.1</td>
<td>15.2</td>
<td>20.4</td>
</tr>
<tr>
<td>Percent employed in exec., mana., or prof. occup.</td>
<td>20.0</td>
<td>19.7</td>
<td>21.6</td>
<td>26.4</td>
</tr>
<tr>
<td>Percent empl. in prec. prod., trans., or labor occup.</td>
<td>32.1</td>
<td>32.2</td>
<td>31.9</td>
<td>26.1</td>
</tr>
</tbody>
</table>

Source: Data from U.S. Census Bureau (1990)
Distribution of hazardous waste treatment, storage, and disposal facilities (TSDFs)
Minorities and Exposure to Pollution

Source: Department of Environmental Protection and 2000 U.S. Census
Major Nuclear Weapons Sites
Hanford, WA Nuclear Site

Hanford Site Location Map

Washington State

Hanford Site
560 Square Miles
Nuclear Waste Clean-up
Hanford Washington State, 2002 - present day

- **The Challenge:** From 1943 to 1987, the federal government produced plutonium for nuclear weapons at the Hanford Nuclear Reservation in south-central Washington:
  - This process has produced millions of gallons of mixed radioactive waste, which is stored underground in scores of vast tanks. 67 of the tanks have leaked more than one million gallons of waste into the soil. Hanford is one of the most contaminated nuclear sites in the United States.
  - Local communities suspect that this waste has already polluted underlying groundwater along its route to the nearby Columbia River, which supplies water and fish stocks to the Yakima (Yakama) Nation.
  - They attribute the high rate of cancer among the Yakama to continued exposure to contamination from the site. DOE slowly moved forward with a clean up effort.
  - The Bush administration devised a plan to sidestep completing the $50 billion job. While the law mandates that high-level waste must be solidified and buried in a permanent repository, the administration proposed reclassifying some of the waste as low-level and leaving it in the tanks.
Litigation

• In February 2002 Natural Resource Defense Council (NRDC) brought litigation to force the DOE to protect the health and safety of the Yakama Nation and others who utilize the water and fish stocks of the Columbia River.
• NRDC joined with the Yakama Nation, the Shoshone-Bannock tribes and the Snake River Alliance to file a lawsuit to block the reclassification of the waste, arguing that such a move would violate the Nuclear Waste Policy Act.
• Several co-plaintiffs connected with two other radioactive waste sites that would also be affected by the waste reclassification-joined the suit.
• Tanks holding high-level waste at an Idaho facility sit directly above the Snake River aquifer, a main water source for the Shoshone and Bannock tribes. Another facility, at Savannah River in South Carolina, also threatens groundwater.
Status of Law Suits

• In July 2003, NRDC celebrated a short-lived victory in the case when a federal district court ruled that the DOE could not reclassify the waste in order to avoid cleaning it up. The Bush administration and appealed the ruling.

• The administration then proposed a change in the law. Legislation was introduced that would allow officials to reclassify the waste. Administration supporters in Congress inserted a provision into a Department of Defense funding bill in late 2004 that gave the DOE the power to reclassify and abandon the waste at the Idaho and South Carolina sites.

• An appellate court overturned the July 2003 ruling, concluding that there wasn't enough information to determine whether the DOE was in violation of the law. NRDC senior attorney. "We will continue to explore all legal options to make sure the DOE cleans up its mess."
The National Environmental Policy Act (NEPA)

- NEPA serves as “our basic national charter for protection of the environment.”

  - Aids in Decision Making: "is intended to help public officials make decisions that are based on an understanding of environmental consequences, and take actions that protect, restore, and enhance the environment."[1]

  - Action forcing: (e.g., Environmental Impact Statement)

  - Requires public Input: Ensures that the public has an opportunity to provide input before decisions are made.

NEPA General Provisions relatable to EJ

- to “fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;”
- to “assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;”
- to “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;”
- to “preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;”
- to “achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life’s amenities;” and
- to “enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.”
The NEPA document must be able to address the following issues:

- The population characteristics of the project area delineated by race, ethnicity, age, and other demographic factors.
- The income levels of affected residents.
- The housing stock by type, age, and price in the project area.
- Comparisons of these factors with community-wide characteristics.
- To what extent will the project affect low-income and minority populations?
- Are there alternatives or alternative locations that would not adversely affect minority or low-income persons?
- Are there mitigation measures that would reduce or minimize the effects of the project on minority or low-income persons?
- Have the target populations been effectively involved in the entire NEPA process?
NEPA and Environmental Justice

• Section 101(c) confirms the right of each person to enjoy a healthful environment, as well as the responsibility of each person to contribute to the preservation and enhancement of the environment. 42 U.S.C. § 4331(c).

• The Administrator noted that “[i]n the National Environmental Policy Act of 1969 (NEPA), Congress could not have been any clearer when it stated that it shall be the continuing responsibility of the Federal government to assure for all Americans ‘safe, healthful, productive and aesthetically and culturally pleasing surroundings.’” Memorandum from Christine Todd Whitman, Administrator, U.S. EPA, EPA’s Commitment to Environmental Justice (Aug. 9, 2001).
Executive Order 12898 “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.”

• Requires each federal agency to develop an agency-wide environmental justice (EJ) strategy.
• Promote enforcement of all health and safety laws in minority and low-income areas.
• Improve research and data collection relating to the health and environment of minority and low-income persons.
• Requires federal agencies to ensure that appropriate programs, policies, and activities do not exclude persons from participation because of their race, color, or national origin.
• Requires federal agencies to apply the order to Native American programs, and after consultation with tribes, shall coordinate steps pursuant to this order that address federally-recognized Indian tribes.
February 11, 1984 Presidential Memorandum*

Federal agencies are required to:

• Analyze the environmental effects (health, economic, and social) of federal actions, including such effects on minority and low-income communities, when such analysis is required by NEPA.

• Provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities, improving the accessibility of meetings, and providing access to crucial documents and notices.

• Address the significant adverse effects of any mitigation measures outlined or analyzed in an environmental assessment (EA), environmental impact statement (EIS), or record of decision (ROD) on minority and low-income communities; and

* The Memorandum was intended “to underscore certain provisions of existing law that can help ensure that all communities and persons across this nation live in a safe and healthful environment.”
Governmental Regulatory Role

• The EPA created the Office of Environmental Justice in 1992 and produced its own study, *Environmental Equity: Reducing Risks for All Communities*, a report that finally acknowledging the fact that low-income and minority populations shouldered greater environmental health risks than others.

• The Office of Environmental Justice, located within EPA’s Office of Enforcement and Compliance Assurance, provides a central point for the agency to address environmental and human health concerns in minority communities and/or low-income communities.
EPA Environmental Justice Strategy

- In 1995, EPA issued an Environmental Justice Strategy that included, among other provisions, (1) ensuring that environmental justice is incorporated into the agency’s regulatory process, (2) continuing to develop human exposure data through model development, and (3) enhancing public participation in agency decision making.
CEQ Guidance on EJ ISSUES

• Federal agencies need to address:
  – The composition of the affected community or population to determine whether minority or low-income communities are present;
  – Relevant public health data or projects concerning the potential for cumulative exposure to health or environmental hazards;
  – Cultural, social, occupational, or economic factors that may amplify the effects of agency action;
  – Public participation strategies; and
  – Community or, when applicable, tribal representation in the process.
### CEQ’s Recommendations for Considering Environmental Justice

<table>
<thead>
<tr>
<th>Stage of NEPA Process</th>
<th>CEQ’s Recommendations for Considering Environmental Justice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scoping</strong></td>
<td>Seek input from low-income and minority groups. Develop a proactive outreach strategy that relies on individuals, community organizations, and nonmainstream media. Ensure effective communications with diverse groups through cooperative working relations and educational efforts.</td>
</tr>
</tbody>
</table>
| **Public participation** | Use innovative approaches to overcome linguistic, institutional, cultural, economic, and historic barriers to effective participation, including the following:  
  - direct coordination with affected individuals and organizations  
  - translations of important documents  
  - providing opportunities for translation of comments  
  - personal interviews or recordings to capture nonwritten comments  
  - newsletters or summaries  
  - innovative meeting formats that encourage participation  
  - holding meetings in convenient locations  
  - providing assistance for hearing- or sight-impaired persons. |
| **Determining affected environment** | Use Bureau of Census or other demographic data to identify the composition of potentially affected populations by race, ethnicity, and income. |
| **Evaluating impacts** | Identify quantitatively and spatially, whether the effects on minority or low-income populations would be disproportionally high and adverse. Include a specific, written statement as to the nature and extent of such impacts. |
| **Comparing alternatives** | Encourage the potentially affected persons to recommend alternatives. Consider low-income and minority impacts in identifying the environmentally preferable alternative. |
| **Record of decision** | Specifically identify how any disproportionally high and adverse impacts on a low-income minority population were considered in the decision-making process. Discriminate the ROD to the affected community, using translation and plain-English summaries if necessary. |
| **Mitigation** | Seek community input on ways to mitigate any disproportionally high or adverse impacts to minority or low-income populations. Consider the needs and preferences of such people in developing or adopting mitigation measures. |
Executive Order 13175 “Consultation and Coordination With Indian Tribal Governments”

• To establish regular and meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications, to strengthen the United States government-to-government relationships with Indian tribes, and to reduce the imposition of unfunded mandates upon Indian tribes.

• In transmitting any draft final regulation that has tribal implications to OMB pursuant to Executive Order 12866 of September 30, 1993, each agency shall include a certification from the official designated to ensure compliance with this order stating that the requirements of this order have been met in a meaningful and timely manner. (Sec. 7(a) Accountability)
Property Value Impacts

Fernald Nuclear Weapons Production Site (Ohio)

Source: Department of Energy
Influences on Property Values

• Physical Factors
  – Type of hazard
  – Magnitude and scale
  – Temporal factors
  – Distance from hazard

• Cognitive Factors
  – Knowledge
  – Perception
  – Values
Komis v. City of Santa Fe, NM

- City of Santa Fe (New Mexico) condemned land for the construction of a highway to transport (nuclear) waste from (Los Alamos National Laboratory to the (then) proposed Waste Isolation Pilot Project site in Carlsbad, New Mexico).

- The Komis' sued, and following a jury trial, were awarded $888,192 in damages. $337,815 was awarded for severance damages due to public perception of risk related to the planned shipments of TRU waste (on the remaining land).

- The New Mexico Supreme Court later upheld the jury's decision.

## Selected Property Value (PV) Analyses

<table>
<thead>
<tr>
<th>Authors</th>
<th>Method</th>
<th>Variable</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michaels &amp; Smith (1990)</td>
<td>Hedonic</td>
<td>11 Hazmat sites on PV</td>
<td>Loss of $115/Mile (10 miles)</td>
</tr>
<tr>
<td>Nelson et al (1992)</td>
<td>Hedonic</td>
<td>Housing price; distance to landfill</td>
<td>12% loss adjacent to site</td>
</tr>
<tr>
<td>Greenburg, Hughes (1993)</td>
<td>Survey</td>
<td>Hazmat site on PV</td>
<td>- 5 to 25% within ¼-1 mile</td>
</tr>
<tr>
<td>McCluskey et al (2002)</td>
<td>Hedonic</td>
<td>Post naming Superfund site</td>
<td>Loss average 18.2% of value</td>
</tr>
<tr>
<td>Jenkins-Smith et al (2002)</td>
<td>Contingent Valuation</td>
<td>Willingness to pay near smelter site</td>
<td>30.9-53% Discount</td>
</tr>
</tbody>
</table>
Major Events That Have Created Fears About Nuclear Power

- Hiroshima/Nagasaki
- Chernobyl
- Three Mile Island

Source: BRAMA, Wikipedia, Gensuikin
Dangers of Hazardous Facilities

Mustang, Nevada

Source: University of Nevada, Reno
Proposed Yucca Mountain Nuclear Waste Repository

Yucca Mountain Repository Site

Source: State of Nevada
Potential Yucca Mountain National Transportation Routes

Source: State of Nevada, DOE
A Statement on Environmental Justice*

Environmental Justice focuses on eliminating inequalities from social, political and environmental decision making, actions and policies including:

– The increased likelihood of being exposed to environmental hazards;
– Negative impacts of environmental processes and policies; poverty;
– The segregation of jobs, housing, communities, facilities, and public conveyances;
– The appropriation of land, destruction of indigenous cultures;
– The abrogation of traditional treaty rights; and the expulsion or removal of people from particular territories.
– The preservation of land, and the environmental practices and cultures of marginalized peoples; and
– Shaping new environmental discourses, ethics, policies, and plans for the twenty-first century.

* University of Michigan, Natural Resources and Environment
When drafting clean air rules, EPA devoted little attention to environmental justice.

- The first recommendation called upon EPA rulemaking workgroups to devote attention to environmental justice while drafting and finalizing clean air rules.

- To enhance identification of potential environmental justice issues, EPA should (a) provide workgroup members with guidance and training to help them identify potential environmental justice problems and (b) involve environmental justice coordinators in the workgroups when appropriate. In response to the call for better training and guidance,

- Improve assessments of potential environmental justice impacts in economic reviews by identifying the data and developing the modeling techniques needed to assess such impacts.

- EPA Administrator should direct cognizant officials to respond more fully to public comments on environmental justice by better explaining the rationale for EPA’s beliefs and by providing supporting data.
Recommendations

• Pass a *National Environmental Justice Act* codifying Executive Order 12898.
• Require Assessments of Cumulative Pollution Burdens in Facility Permitting.
• Require Safety Buffers in Facility Permitting.
• Protect and Enhance Community and Worker Right-to-Know.
• Adopt Green procurement Policies and Clean Production Tax Policies.
• Reinstate the Superfund Tax.
• Establish Tax Increment Finance (TIP) Funds to Promote Environmental Justice-Driven Community Development.