

A SCORE-POINT-ZERO APPROACH FOR ENVIRONMENTAL JUSTICE APPLICATIONS

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ABSTRACT

Ever since President Clinton passed Executive Order 12898, federal agencies have looked for ways to prevent environmental injustice due to their actions. Agencies, many of which are State Agencies such as Departments of Transportation, have spent large amounts of money doing research and implementing guidelines to effectively consider this order. In this paper, a guideline for environmental justice will be proposed that is easy enough to follow, improve and implement by any agency or institution interested. The paper is divided into three main sections. The first section provides the background on Environmental Justice and defines the term by including explanations given by an array of different authors and institutions. The second section presents the Score-Point-Zero approach to environmental justice. Finally, the third section gives examples of specific areas where this approach can be applied.

The beneficiaries of such study range from scientists and engineers to policymakers and developers. In conclusion, this study is intended to aid in the decision making process and prevent “disproportionately high and adverse” effects on low-income and minority populated communities.

BACKGROUND ON ENVIRONMENTAL JUSTICE

To understand environmental justice, it is important to explore the roots of the concept. As synthesized by Cunningham and Saigo (1999), environmental justice is rooted in environmental ethics and defined by morals and values. In morals, the distinction between right and wrong as a method of judgment is where the concept is applied. In values, it is found that the definition relies on the “worth” of the actions taken [1].

A review of environmental ethics suggests that environmental justice may be reached through a moral relationship among humans that is reflected on their actions towards each other as well as the environment in which they live. So, what does that mean for environmental justice? In reaching out to environmental justice, one should know and realize injustices first. As Theodore (1996) suggests, distributive and disproportionate justice in minority populations are often found in terms of bias in political, legal and economic privileges. Environmental decisions have been guided by environmental discrimination towards people of color and low-income communities. The environmental agenda has been driven by votes and money. Great attention has been called by cases where minority communities and socially disadvantaged groups are burdened disproportionately by environmental hazards such as toxic waste dumps, incinerators, airborne pollutants, contaminated water, and pesticide exposure. This is especially obvious in nonwhite, poor, less educated and politically less powerful populations [3].

Environmental health education interventions that target individual households may be a useful mechanism for increasing the access of low-income communities to government health resources and reducing adverse health effects from the environment. Even though, racial/ethnic disparities in education and health remain an important consideration, more recently, the deteriorating state of the global environment and public opinion (persuaded by environmental ethics) have pushed environmental concerns to higher integrity and levels. This is done by pushing leaders and politicians to pass executive orders and regulations involving environmental justice. As Palmer (1998) indicates, the process of reaching such state of ethical responsibility can be found at many levels. The levels extend from the mere realization of an individual of such concept, to the actual awareness of an individual towards environmental ethics, and the collective and combined awareness that leads to a deep sense of realization in which actions are taken. When these realizations lead to actions, a set of goals is then reached through structure [4]. Such structures include President Clinton's executive order on environmental justice. It is then, that such problems can be moved forward and minority populations can be considered as worthy as the upper classes when deciding their environment's sake.

Defining Environmental Justice

With the realization of the concept of environmental ethics inherent within us, how can we be able to provide environmental justice? The answer to this question might be difficult, maybe even arbitrary depending on a specific situation or the actual understanding and awareness of such concept. However, to simplify the answer we will start by defining environmental justice [1].

In defining environmental justice, Aaron Sachs demonstrates human costs of environmental degradation. Human costs are really the heart of the environmental justice issue [5]. Even though environmental degradation takes a toll on human kind, Sachs points out that the cost of environmental degradation "is often borne disproportionately by the people least able to cope with it-people already on the margin of society" [5]. Environmental Injustice is defined by Sachs as an issue that links human rights and environmental rights and environmental agendas-largely involving unfair distribution of the costs of ecological damage and inequitable access to ecological benefits. Sachs continues to explain environmental justice issues by indicating that it is difficult to document and quantify environmental justice issues usually because they are kept hidden due to their illegality and to the unheard complains of lower classes of society affected by these injustices. It is important to note that environmental injustices arise at different levels of society whether they involve individuals, communities or even entire countries.

Sachs also explains that environmental justice should be reached by equal protection from pollutants and "access to natural resources should be equalized rather than reserved for those who can afford to live in the safest suburban communities" [5]. However, in real life situations the term justice and equality are very vague in terms of regulation. So, Sachs explains that "the key to working toward environmental justice, then, maybe ensuring that the people in power cannot monopolize the right to determine what..." environmental justice and equality mean. This is done by expanding access to information, the protection of free speech, free press, fair elections, freedom to organize groups and coalitions, freedom of mounting protests and

exposing governmental shortcomings, and finally the ability to vote uncooperative and environmental unjust politicians out of office.

In pursuing the definition of environmental justice, Nicholas Low and Brendan Gleeson (1998) explore political ecology in their book *Justice, Society and Nature*. They begin their definition of justice as a “continuous human task” that is continuously expanding, where the distribution of environmental quality is the major shaper of environmental justice. Low and Gleeson also explain that the institute of medicine defines environmental justice as efforts to address “the broad array of environmental burdens and hazards...being borne disproportionately by lower-income communities and by racial and ethnic minorities” that overburdens them with environmental degradation and environmental health hazards in particular [6].

The United States Environmental Protection Agency (EPA) defines environmental justice as, “the fair treatment and meaningful involvement of all people regardless of race, ethnicity income, national origin or educational level with respect to the development implementation and enforcement of environmental laws, regulations and policies” [7]. Fair treatments indicate that no population due to policy or economic disempowerment is forced to bear a disproportionate burden of the negative human health or environmental impacts of pollution or other environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local and tribal programs and policies.

The definition provided by David Schlosberg in his book *Environmental Justice and the New Pluralism* sounds similar to all the other definitions. Schlosberg defines Environmental Justice as “inequity in the distribution of environmental risks...the problematic distribution of environmental ills, which mirrors the inequity in socio-economic and cultural status” [8].

The Status of Environmental Justice

Until recently, the environmental justice concept has somehow escaped most leaders and citizens. So, what finally awakened this issue as a significant concern for the future and a responsibility for today’s leaders, policymakers and capable citizens? Well, we have basically witnessed “alarming images of ruptured 55-gallon drums, flaming rivers, industrial ghost towns, deformed children, and “glow boys” in spacesuits diving into damaged nuclear containment vessels to receive a year’s allowable radiation in a few seconds” [9]. The ones who have not observed such situations are simply shielded by their own ignorance and will soon be overpowered. Even in the news and media, environmental issues have been receiving more attention. Lately, the entertainment industry presented a story, based on a real life case, acted by a well-known and highly popular actor, Julia Roberts portraying “Erin Brockovich” in a highly compromising environmental story. Thankfully, it is now more difficult for environmental polluters to make more money due to more stringent regulations, permits and fees.

Environmental justice is still highly regarded as a political issue disregarding the influence of economics. Until the political agenda is free from legal liability, wars, economic conflicts and discrimination, it will be difficult to see the environment as a major driving force in policy making. There are simply too many issues to fix that are of higher priority to most

politicians and voters, and the environment will not be healthy until these conflicts are set straight and resolved.

So, what has been done in the United States to address Environmental Justice? Recent studies have shown that in the U.S., some governmental decisions have adversely affected low-income and minority communities disproportionately to the rest of society [10]. This is why President Clinton issued Executive Order 12898, which requires federal agencies to consider environmental justice when carrying out their missions. The guidance issued by the Executive Office of the President requires every federal agency to consider environmental justice when conducting impact evaluations under the National Environmental Policy Act (NEPA). Therefore, making environmental justice analysis a highly focused form of social impact assessment that must be conducted within the framework of NEPA [10]. Environmental justice in this sense refers to 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 indicating that minority and low-income groups should not bear a disproportional share of the negative environmental impacts caused by governmental actions.

The executive order was issued in February of 1994 entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. The main objective of this order is contained in the first section summarized by Bass 1998,

“To the greatest extent practicable and permitted by law...each federal agency shall make achieving environmental justice a part of its mission by identifying and addressing...disproportionately high adverse human health or environmental effects of its programs, policies, and activities on minority and low-income population in the United States” [10].

Most importantly, the federal agency is now expected to answer the fundamental question posed by President Clinton's executive order: *“Will the proposed federal action have a significant, adverse effect on minorities and low-income persons to a greater extent than on the general population of an area?”* If the answer is yes, then the federal agency should make every effort to modify its proposal to achieve a more socially equitable solution to the problem [10].

The executive order was not the only action taken trying to address Environmental Justice in the United States. On December 30, 1997, the 3rd Circuit Court of Appeals entered the arena when it discovered that a private cause of action existed to challenge the plant permitting process. In February 1998, the EPA seized the initiative by citing the President's Executive Order and issuing an interim guidance that clearly recognizes a private cause of action in both the site permitting and renewal process. This is based on the Civil Rights statute, Title VI indicating that no person in the United States shall, on the grounds of race, color or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving any financial assistance [11]. Not only did that mean that there was an increase in environmental permitting litigations, but also in the permit renewal indicating that:

“Generally, permit renewals should be treated and analyzed as if they were facility permits, since permit renewal is, by definition, an occasion to review the overall operations of a permitted facility and make any necessary changes. Generally, permit renewals are not issued without public notice and an opportunity for the public to challenge the propriety of granting a renewal under the relevant environmental laws and regulations” [12].

However EPA’s policy on environmental justice has evoked strong response and opposition by environmental activists, citizens, civil right activists, corporate officials and state agencies because the guidance would impose burdens on state agencies and hinder the operations of environmental permitting programs.

So, what is to be done when seeking environmental justice? Well, the environmental justice movement has grown over the last ten years fueled by a passionate rhetoric. Environmental justice is now a very important part of the public component. Therefore, it is necessary to approach environmental justice issues in a way that facilitates the communication between the public, policymakers and other parties involved. The following section will provide some answers in a guideline called, “The Score-Point-Zero Approach.”

THE SCORE-POINT-ZERO APPROACH

The Score-Point-Zero approach, which is administered as a numerical scoring guideline, is developed to comparably evaluate actions based on variables including social, physical, economic, geographic and safety aspects of low-income and minority populations. The use of this guideline is intended to provide an example of how to integrate environmental justice to various types of operations. This approach is simple and flexible enough to accommodate different variables and actions presented by the different operations. The approach is also important in facilitating the communication between opposing sides whether being policymakers, scientists, engineers, or the community. And finally, this guideline is important because of its scoring system that provides a cutting point in which the action will or will not be carried out to eliminate doubts and legal liability regarding actions being disproportionate or discriminatory.

The variables important for the Score-Point-Zero approach are, but not limited to:

1. The Population Classification
2. The Location
3. The Action Proposed
4. Political Implications

The variables are to be treated as either, positive or negative. In the positive criteria, the variable will produce a positive impact to the community while in the negative criteria the variable will produce a negative impact to the community. Such criteria are scored from –5 to 5 where the negative variables are from –5 to –1 and the positive ones are 0 to 5. The decision to conduct action is reached when the total final score is a positive number from 0 to 5 (Table I).

Table I. The Score-Point-Zero Approach Scoring System.

Negative Criteria					Positive Criteria					
E	D	C	B	A	A	B	C	D	E	F
-5	-4	-3	-2	-1	0	1	2	3	4	5
DO NOT CONDUCT ACTION					≥ 0 CONDUCT ACTION					

Such positive criteria include but are not limited to:

- A. Cost Effectiveness (0 points)
- B. No Other Option/Route/Alternative (1 point)
- C. Dominant “Voters” Population (Therefore, no liability due to impact on a minority population) (2 points)
- D. High-Income Population (Therefore, no liability due to impact on a low-income population) (3 points)
- E. Causes Positive Development In Area (such as new job opportunities) (4 points)
- F. Urgent Need of Action in Specific Area (5 points)

The negative criteria include but are not limited to:

- A. No Need For Action At Location (-1 point)
- B. Causes Adverse Effects (-2 points)
- C. Low-Income Population (-3 points)
- D. Minority Population (-4 points)
- E. Different Alternatives Possible (-5 points)

The determination of action will add up both the positive and negative criteria scores. The decision to conduct action will be reached at a positive summed score equal or greater than zero. However, if the final score is a negative number, the action should be refused as environmentally unjust (Figure 1).

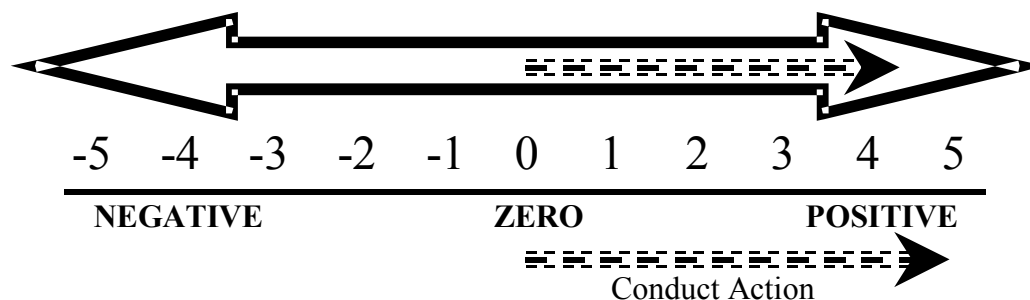


Fig. 1. The Score-Point-Zero Scale

APPLICATIONS

The Score-Point-Zero approach can be easily applied as a decision-making tool that engineers, scientist, policymakers, the community and other parties can use to get their points across or negotiate the implementation of a given action. This guideline's flexibility makes it easy for different institutions to provide their own positive and negative criteria and variables to compare and evaluate the actions presented. Such institutions are not only limited to federal organizations. The private industry and consulting firms can also use this method. Examples of cases can range according to the different users. Some examples of where this approach can be helpful include:

1. Nuclear Waste Disposal
2. Placement of Nuclear Plants
3. Transportation Routes
4. Transportation of Hazardous Waste
5. Placement of Various Treatment Plants
6. Placement of Landfills
7. Placement of Factories/Mills,

In conclusion it is important to realize that integrating environmental justice will not only prevent the adverse impact on low-income and minority populations but also prevent future adversities that can affect various populations as a whole.

REFERENCES

- [1] Cunningham, W., and Barbara W. Saigo. (1999) "Chapter 2: Tools for Building a Better World." Environmental Science: A Global Concern (5th Ed.). Boston: WCB/McGraw-Hill.
- [2] Theodore, M. (1996) "Environmental Justice." in Theodore, M. and L. Theodore (eds), Major Environmental Issues Facing The 21st Century. New Jersey: Prentice Hall PTR.
- [3] Coughlin, S. (1996) *Environmental Justice: the role of epidemiology in protecting unempowered communities from environmental hazards*. The Science of the Total Environment 184 (67-76).

- [4] Palmer, C. (1998) Environmental Ethics and Process Thinking. Oxford New York: Clarendon Press.
- [5] Sachs, A. (1995) Eco-Justice: Linking Human Rights and the Environment. World Watch Paper 127.
- [6] Low, N. and B. Gleeson. (1998) Justice, Society and Nature. Routledge: London.
- [7] EPA. (1992) Environmental Equity: Reducing Risk For All Communities. Workshop Report to the Administrator. Vol.1, R.M. Wolcott. Report EPA 230-R-92-008. Washington, D.C.
- [8] Schlosberg, D. (1999) Environmental Justice and the New Pluralism. Oxford University Press: United Kingdom.
- [9] Dowie, M. (1995) Losing Ground: American Environmentalism at the Close of the Twentieth Century. Massachusetts: The MIT Press.
- [10] Bass, R. (1998) *Evaluating Environmental Justice Under The National Environmental Policy Act*. Environ Impact Asses Rev 1998; 18:83-92.
- [11] Block, W. and R. Whitehead. (1999) *The Unintended Consequences Of Environmental Justice*. Forensic Science International 100 (57-67).
- [12] EPA Interim Guidance for Investigating Title V Administrative Complaints Challenging Permits, 1998.