

June 2000

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Mary R. English, *Who Are the Stakeholders in Environmental Risk Decisions - How Should They Be Involved*, 11 RISK 243 (2000).

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Who Are the Stakeholders in Environmental Risk Decisions? How Should They Be Involved?

Mary R. English*

Introduction

In the United States, as in other countries, public participation in environmental policy decisions has come a long way. In its infancy, it was limited to public hearings concerning decisions that were, for all practical purposes, “done deals.” Overturning public agency decisions could be accomplished only through expensive, often protracted, usually futile court cases, and then only if the issue was justiciable and the plaintiff had the funds and standing to sue.

In recent decades — especially since the 1960s — opportunities for public participation in the U.S. have been overhauled. Access to documents has been assured through federal and state “freedom of information” acts.¹ The public may be asked to help “scope” the issue at hand (i.e., determine its salient features) early in the decision-making process. Informal question and answer sessions often supplement the formal, one-way testimony of public hearings. No longer are decisions typically made behind closed doors. Public comments usually are documented and accompanied by written responses from the decision-making agency. Administrative reviews of decisions are often a first recourse, before bringing suit. And, standing to sue is more broadly interpreted.

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¹ For the federal Freedom of Information Act, see 5 U.S.C. § 552.

But public participation has two inherent deficiencies. First, it fails to differentiate among members of the public. Second, it preserves an “us/them” distinction between the decision-making agency and citizens. As a remedy, stakeholder involvement — which does differentiate among citizens and does help to lower “us/them” barriers — is an increasingly popular supplement to conventional public participation, especially on controversial issues involving environmental risks.

In this paper, I examine different types of environmental risks, ranging from local to diffuse, short-term to long-term environmental risks. In particular, I focus on the stakeholders in risk decisions, using four broad categories of stakeholders: risk losers, risk gainers, risk perpetrators, and risk managers. I then consider (1) the viability and (2) the appropriateness of centrally involving stakeholders in different types of environmental risk decisions. The first is a practical question; the second, a normative question. Yet, the two are closely linked. I conclude by commenting on what roles stakeholders can and should play in controversial environmental risk decisions, and on other decision processes that may be needed for some of these decisions.

A Range of Environmental Risks

Beginning in the 1970s, in the U.S. and elsewhere, the disposal of radioactive wastes riveted the attention of regulators, waste generators, waste management companies, state and local governments, and some members of the public. This attention, while still pressing, has abated somewhat as the extent and urgency of disposal capacity needs have been questioned and as other environmental issues have come to the fore.

In the discussion of stakeholders that follows, I draw primarily upon examples from radioactive waste management. Before shifting to this discussion, however, I wish to emphasize that radioactive waste disposal is only one of many environmental issues facing society today. The following list of issue clusters, largely derived from English et al., is similar to other taxonomies of environmental issues (e.g., Miller, The Conservation Foundation, and McKinney & Schoch).² It indicates

² See Mary R. English et al., *Overview*, in *Tools to Aid Environmental Decision Making*

the range of environmental risks currently considered in environmental decision making.

- *Waste cleanup and management.* Includes the cleanup of contaminated sites and the treatment, storage, and disposal of current waste streams (commonplace garbage, yard waste, and construction and demolition materials, as well as chemically hazardous waste, radioactive waste, and spent nuclear fuel). Related issues include how to reduce the quantity and toxicity of wastes.
- *Air quality.* Includes indoor as well as outdoor air pollution, accidental as well as routine releases into the atmosphere, and nonpoint as well as point sources. Air quality is a function, not only of the type, number, and use frequency of pollution sources, but also of the sophistication of air pollution control and prevention technologies.
- *Water quality and supply.* Includes contaminants to groundwater and surface water from nonpoint as well as point sources through accidental as well as routine releases. As with air quality, water quality can deteriorate with an increase in various pollution sources, but this deterioration can be at least partially offset with pollution control and prevention technologies. In addition, however, an increasingly pressing fresh water issue (across the U.S., not simply in the arid and semi-arid western regions) is water supply, and how that supply should be allocated and replenished.
- *Natural resource management.* Includes the management of trees and other plants, minerals, soils, fish, and wildlife for purposes such as materials and food as well as for consumptive and non-consumptive recreation. With a growing awareness that some natural resources are (for all practical purposes) finite while others can be jeopardized through overuse or misuse, the need to move from exploitation to holistic management strategies is increasingly recognized.

(Virginia H. Dale & Mary R. English eds., 1999). See, e.g., The Conservation Foundation, *State of the Environment: A View Toward the Nineties* (1987); G. Tyler Miller, Jr., *Living in the Environment: An Introduction to Environment Science* (1992); Michael L. McKinney & Robert M. Schoch, *Environmental Science: Systems and Solutions* (1996).

- *Critical natural areas.* Beyond natural resource management, there is a growing awareness that some areas — e.g., coastal areas, flood plains, wetlands, ecological “bioreserves,” parks, endangered species’ habitats, and other special locales — need to be identified and protected, both for their importance to larger ecosystem integrity and for their intrinsic worth.
- *Energy production and distribution.* While sometimes thought of as distinct from environmental issues, energy production (from conventional means such as coal-fired, gas-fired, nuclear, and hydro plants, as well as from alternative means such as those capturing energy from solar, wind, geothermal, and biomass sources) and the distribution of energy have major implications for environmental issues such as air quality, water quality and supply, and waste management.
- *New technologies.* New technologies and practices in manufacturing, construction, agriculture, and energy production offer the opportunity to improve productivity while also improving environmental quality; in some cases, however, they may have hidden risks. Similarly, new technologies and practices in waste cleanup and management offer new ways of handling old problems, but their societal costs and benefits (and how those cost and benefits will be distributed) may as yet not be fully understood.
- *Urbanization and land use.* The type, intensity, and distribution of “developed” land uses (e.g., residential, commercial, and industrial development) and accompanying infrastructure needs such as transportation systems, sewerage, water, electricity, schools, police and fire protection, have been longstanding local issues in the U.S., but their environmental implications only now are receiving widespread national attention.
- *Historical, cultural, and esthetic resources.* Identifying and protecting historic buildings and districts, archeological artifacts, sacred places, and “view sheds” has become an important part of responsible, culturally sensitive stewardship of the built as well as the natural environment.

The first five clusters are the most well-entrenched in the U.S., since they have been the targets of the most intensive and long-standing federal and state regulatory attention. The remaining clusters have come to be widely regarded as environmental issues only recently, and to varying degrees. In other words, the forces of “social construction” of environmental problems have been at work.³ It remains to be seen whether these issues will wax or wane in their prominence, and whether new issues will come to the fore. Moreover, many of these issues are closely linked (e.g., energy production and air quality; natural resource management and cultural and esthetic resources), yet often these links are not yet fully recognized, understood, or accepted.

The Spatial and Temporal Dimensions of Environmental Risk

Regardless of the type of issue, each can be characterized as having a spatial dimension and a temporal dimension. I first encountered this basic point in an article by Clark Bullard, and it continues to be a helpful construct in thinking about environmental risks.⁴

The spatial dimension of an environmental issue can range from highly local (a few acres or less) to highly diffuse (multi-national or global). An example of the former might be a solid waste collection center; the current paradigmatic example of the latter is global climate change. An environmental issue can be characterized as falling somewhere along this spatial continuum:

local ----- diffuse

Similarly, the temporal dimension of an environmental issue can range from very short term (a few hours or less) to very long term (thousands of years). An example of the former might be a toxic chemical spill that is quickly and easily mopped up; the current paradigmatic example of the latter is permanent disposal of highly radioactive wastes and spent fuel. An environmental issue can be characterized as falling somewhere along this temporal continuum:

short-term ----- long-term

³ See John A. Hannigan, *Environmental Sociology: A Social Constructionist Perspective* (1995).

⁴ See Clark W. Bullard, *Management and Control of Modern Technologies*, 10 *Tech. in Soc'y* 205 (1988).

Granted, with both the spatial and the temporal dimensions of an environmental issue, the points on the continua rarely will be clear-cut. The environmental risks of a solid waste collection center may be highly localized, but its economic and social ramifications may be much more widespread. A chemical spill that is cleaned up quickly may have required prior emergency preparations and will require subsequent treatment or disposal of the contaminated mop-up materials. Global climate change is highly diffuse and long-term in its effects, but its causes occur partly from billions of highly localized, often short-term decisions (for example, whether to go to the theater by car or by metro).

Despite these ambiguities, thinking in terms of the spatial and temporal dimensions of an environmental issue can help identify both who is likely to regard themselves as stakeholders and who should be regarded by others as stakeholders.

Stakeholders in Environmental Risk Decisions

Before turning to the question of how the spatial and temporal dimensions of an environmental issue help to clarify “stakeholder” status, I will briefly discuss what it means to be a stakeholder. In doing so, I will draw upon a much more extensive discussion of stakeholder involvement in environmental policy making.⁵ I will also describe, in the following section, four broad categories of stakeholders.

Originally, a stakeholder was someone holding the stakes during a wager — presumably someone neutral and trusted. As currently used in the U.S., however, the term means something quite different: It refers to someone with a vested interest, someone who stands to gain or lose. In the U.S., the term “stakeholder” does not have a universally accepted definition, but typically has been adopted — especially by federal agencies — to refer to interested and/or affected groups or individuals within what has traditionally been thought of as “the public.”⁶ This

⁵ See Mary R. English, *Stakeholders: Whose Interests? At What Sacrifice?* (1999) (manuscript under review).

⁶ See e.g., Presidential/Congressional Comm’n on Risk Assessment and Risk Management, *Framework for Environmental Health Risk Management*, Final Report, Vol. 1 (Washington D.C.: Gov’t Printing Office, 1997); Terry F. Yosie & Timothy D. Herbst, *Using Stakeholder Processes in Environmental Decision Making: An Evaluation of Lessons Learned, Key Issues, and Future Challenges* (1998).

restricted usage has been employed by the U.S. Department of Energy (DOE), which routinely distinguishes stakeholders from the DOE and its regulators.

Yet “stakeholder,” strictly speaking, includes those who are responsible for environmental risks, either because they caused it or because it is their duty to manage it. Their stakes are different — they may involve jobs, funding, profit, a sense of pride in mission accomplishment — but they are stakes. Particularly with elected officials and public agencies, whose responsibility it is to serve the public interest, we avoid using the term “stakeholder.” We reserve it for those whom we assume are acting from self-interest or personal values; we are reluctant to relinquish the notion that our public bureaucracies speak for the public interest, untainted by personal values or concerns. Yet, it is naive to assume that they are not stakeholders as well. And as their decision-making authority is questioned and they turn, sometimes in desperation, to decision-making modes such as negotiation and other forms of conflict management, they increasingly rely not only on their own judgement, but also on other stakeholders to make decisions.

Four Categories of Stakeholders

The following taxonomy develops thoughts first articulated in an article, sparked by Peter Sandman’s concept that “risk equals hazard plus outrage,” in which I examined different perspectives on environmental risk decisions and their outcomes.⁷ Here, I will speak of four broad categories of stakeholders: risk “losers,” risk “gainers,” risk “perpetrators,” and risk “managers.”

- *Risk losers*: those who may be adversely affected by an environmental risk decision, in terms of their health, economic, or social well-being, and possibly their deeply held values. It is this group which conventionally comes to mind with the term “stakeholders.” An example might be those living on or owning property near a proposed low-level radioactive waste disposal facility.

⁷ See Mary R. English, *Victims, Agents, and Outrage*, in *The Analysis, Communication, and Perception of Risk* (B.J. Garrick & W.C. Geckler eds., 1991); Peter M. Sandman, *Risk Communication: Facing Public Outrage*, Nov. EPA J. 21 (1987).

- *Risk gainers*: those who may be favorably affected by an environmental risk decision, typically through economic gains. An example might be those who own the property to be purchased for the proposed low-level radioactive waste disposal facility, as well as those who will be employed there.
- *Risk perpetrators*: those who create the risk (assuming it is not a wholly natural, unexpected hazard). An example might be those who generate the waste to be disposed at the low-level radioactive waste disposal facility, as well as the waste management company(ies) that build and operate the facility.
- *Risk managers*: those with responsibilities for preventing or minimizing the risk (anthropogenic or natural). Typically, these include federal, state, and local regulators and emergency management personnel, as well as those with ongoing monitoring and maintenance responsibilities. Experts providing advice also are included in this category.

These categories are not mutually exclusive. For example, a risk loser also might be a gainer in some respects (e.g., through new employment opportunities); a risk perpetrator is likely to be a gainer as well and also may be expected to be a risk manager. And in the environmental risk decisions, there may be at least as much concern about the process of reaching the decision as about the decision outcomes.⁸ But despite these potential overlaps and ambiguities, the four categories remind us that stakeholders are likely to bring not only radically different perspectives to the decision process and its outcomes, but also different abilities to participate.

When Can Stakeholders Participate Centrally in Environmental Risk Decisions?

Using the two sets of theoretical constructs laid out above — the spatial and temporal dimensions of environmental issues, and the four broad categories of stakeholders — I now argue that all stakeholders

⁸ See, e.g., *Fairness and Competence in Citizen Participation: Evaluating Models for Environmental Discourse* (Ortwin Renn et al. eds., 1995); National Research Council Committee on Risk Characterization, *Understanding Risk: Informing Decisions in a Democratic Society* (Paul C. Stern & Harvey V. Fineberg eds., 1996).

cannot participate equally in all environmental risk decisions. Instead, their ability to participate in a meaningful, central way will depend on the spatial and temporal dimensions of the environmental issue and also on the type of stakeholder. My argument is summarized in Table 1.

Table 1
Possibility of Stakeholder Participation in Environmental Risk Decisions

<i>Risk Category</i>	<i>Type of Stakeholder</i>			
	<i>Losers</i>	<i>Gainers</i>	<i>Perpetrators</i>	<i>Managers</i>
(1) Local & Short-term	Yes	Yes	Yes	Yes
(2) Local & Long-term	Partially	Partially	Partially	Partially
(3) Diffuse & Short-term	Minimally	Minimally	Partially	Partially
(4) Diffuse & Long-term	Very Minimally	Very Minimally	Very Partially	Very Partially

I reach these conclusions through the following reasoning about each of the four categories of environmental risk decisions.

- *Local and short-term risks.* If the risk is sufficiently local and reasonably short-term (e.g., a temporary radioactive waste storage facility), it is plausible to conceive of bringing together all stakeholders to deliberate about the risk decision.
- *Local and long-term risks.* If, however, a localized risk is likely to extend far into the future (e.g., a low-level radioactive waste disposal facility), then the stakeholders can only be partially represented in the deliberations, since future stakeholders of all four types must deal with the consequences of the current decision process and cannot be involved in that process.
- *Diffuse and short-term risks.* If the risk is diffuse but short-term (e.g., a Three Mile Island-type incident at a nuclear power plant), then risk losers and gainers can be consulted only minimally because they are numerous and scattered. In contrast, the perpetrators and managers, if only because they are fewer and more easily identified, can more readily participate in the risk decisions, but they too may be somewhat scattered and decisions must be made quickly.
- *Diffuse and long-term risks.* This is the hardest case of all for stakeholder involvement. Both losers and gainers are not only numerous and scattered, but most are not born yet. And while key

present-day perpetrators and managers can sometimes, with difficulty, be identified and engaged in deliberations, the longevity of the risk means that their successors will inherit the consequences of past decisions without the opportunity to “weigh in” on those decisions.

This is an age-old problem, one not restricted to environmental risks. For example, it motivated the argument of John Rawls, who, in his *A Theory of Justice*, proposed that principles of justice should be procedurally developed, as it were, from behind a “veil of ignorance,” without knowledge of our respective stations in life.⁹ We all have inherited the consequences of the decisions of those who have gone before us, and we cannot avoid making decisions that will have consequences for those who come after us. The question is not whether to make those decisions, but how.

When Should Stakeholders Participate Centrally in Environmental Risk Decisions?

“Can” is related to, but different from, “should.” In considering when stakeholders should participate centrally in environmental risk decisions — in effect, when they should drive the decision process and its outcomes — one needs to consider which normative criteria to apply. Below are four fairly common, widely accepted criteria for an ethically sound environmental decision-making process in which stakeholders are placed in a central, decision-making role:

- adequate representation of the interests and concerns of each stakeholder type
- roughly equal balance among the types of stakeholders in the decision-making process
- rough equality of knowledge, or of access to information and ability to learn
- roughly equal ability to devote the time to participate

These criteria can be met much more readily with local, short-term environmental risk decisions than with the other three categories of environmental risks. As the spatial dimension of the risk becomes more diffuse and as its temporal dimension becomes more long-term,

⁹ John Rawls, *A Theory of Justice* (1971).

satisfying these criteria — especially the first two criteria — becomes increasingly unlikely. The plausibility of true, robust stakeholder involvement diminishes. If only for this reason, the role of stakeholders and, especially, stakeholder-based deliberations in the decision-making process should become less central, although stakeholders may (and should) still have opportunities for input. This point is summarized in Table 2.

Table 2

Appropriateness of Stakeholder-Centered Environmental Decision Making

Temporal Dimension of Environmental Risk	Spatial Dimension of Environmental Risk
Short-term	<div style="display: flex; justify-content: space-between; align-items: center;"> Yes ← <div style="text-align: center;"> <p>Appropriateness of Stakeholder Centered Decision Making</p> </div> → No </div>
Long-term	

Conclusion: Collaborative Deliberation on the Long-Term Common Good

As we move toward diffuse, long-term environmental risks, especially those with large uncertainties and potentially grave consequences, such as those typified by high-level radioactive waste disposal, we need to move away from a stakeholder-centered model of environmental decision making. Instead, we need to move toward a model that draws upon the concept of collaborative learning, and emphasizes the long-term common good. Collaborative learning (which also has been referred to as adaptive work or transformative facilitation)¹⁰ is especially appropriate when values are diverse and the dimensions of the problem and its possible solutions are not well-understood.¹¹ Emphasis on the long-term common good calls upon people to think of themselves not simply as self-interested stakeholders, but also as trustees for the well-being of other people and the

¹⁰ See Ronald A. Heifetz, *Leadership Without Easy Answers* (1994); Chris Maser, *Resolving Environmental Conflict: Towards Sustainable Community Development* (1996).

¹¹ See Bruce Tonn, Mary R. English & Cheryl Travis, *A Framework for Understanding and Improving Environmental Decision Making*, 43 *J. Envtl. Planning & Mgmt.* 165 (2000).

environment.¹² Together, the two concepts suggest a process that should challenge prevailing knowledge and values without being adversarial, that should have as a goal a sustainable future for all, and that should be deliberative and iterative. Incremental steps, revisited as needed, should be preferred over “final solutions.”

This ideal is far easier to prescribe than to implement. For example, as Leon Mayhew notes in *The New Public*, political communication increasingly is dominated by specialists whose techniques historically are rooted in advertising, market research, and public relations, with the result that trust is diminished and ties between citizens and their leaders are weakened.¹³ Nevertheless, there is still reason to believe that it is possible to pursue models of decision making on critical issues of environmental risk that rely neither on stakeholder negotiations nor on manipulative persuasion. As Mayhew notes, while Habermasian conceptions of pure, rational discourse may be implausible, citizens still should be able to insist on getting more than mere rhetoric as explanation.

I close with a quote from John W. Gardner, who, in a forward to *Boundary Crossers: Community Leadership for a Global Age*, comments that:

What we need, and what seems to be emerging in some of our communities, is something new — networks of responsibility drawn from all segments coming together to create a wholeness that incorporates diversity. The participants must come to be at home with change and exhibit a measure of shared values, a sense of mutual obligation and trust. Above all, they must develop a sense of responsibility for the future of the whole city and region.¹⁴

And, I would add, for the land and people beyond.



¹² See English, *supra* note 5.

¹³ Leon H. Mayhew, *The New Public: Professional Communications and the Means of Social Influence* (1997).

¹⁴ John W. Gardner, *Forward* to Neal Pierce & Curtis Johnson, *Boundary Crossers: Community Leadership for a Global Age*, at iii (1997).