Public Participation in Environmental Decisions: An Evaluation Framework Using Social Goals

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Abstract

This paper presents a framework for evaluating mechanisms that involve the public in environmental decision-making. These include traditional participatory mechanisms--such as public hearings, notice and comment procedures, and advisory committees--as well as those considered more innovative--such as regulatory negotiations, mediations, and citizen juries. The framework is based on a set of "social goals," defined as those goals which are valued outcomes of a participatory process, but which transcend the immediate interests of any party in that process. The goals are: educating the public, incorporating public values and knowledge into decision-making, building trust, reducing conflict, and assuring cost-effective decision-making.

The paper begins with a discussion of the need for an evaluative framework which 1) identifies the strengths and weaknesses of a number of different participatory mechanisms, 2) is "objective" in the sense of not taking the perspective of any one party to a decision, and 3) measures tangible outcomes. Section One presents the social goals framework as an approach for meeting these objectives. It illustrates how the framework can be applied to one case study in environmental decision-making: the performance of the Restoration Advisory Board at the Fort Ord military base in California. In Section Two, we contrast the social goals framework with two alternative approaches to evaluation, one based on participatory processes and one based on stakeholder interests. We find that, while useful for answering some questions about public involvement, these two approaches fail to meet all three objectives and may miss important information about the success of a particular participatory effort. In Section Three we take a closer look at participatory mechanisms and discusses how each is likely to perform against the various social goals.

Key Words: public participation, alternative dispute resolution, consensus building, public hearing, advisory committee, regulatory negotiation, mediation, evaluation, trust, social capital

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Thomas C. Beierle*

INTRODUCTION

Public managers are continually faced with the challenge of making high quality decisions while remaining responsive to the citizens those decisions affect. Meeting the challenge in the environmental policy arena poses particular problems because issues are often technically complex and value-laden, and multiple interests operate in an atmosphere of conflict and mistrust. A legacy of gridlock has widely discredited the "decide, announce, defend" approach to environmental decision-making in which agencies confront the public only after determining a course of action. At the same time, experience with public participation[1] fails to support the position that involving the public is an unmitigated good and that more of it is always better. Federal, state, and local governments are increasingly seeking better ways to fulfill their regulatory mandates while constructively engaging the public in environmental decision-making. This paper presents a framework for evaluating the success of such public participation programs and for comparing the results of a variety of different mechanisms for involving the public.

A number of research findings and policy trends have signaled the importance of improving public involvement in environmental decision-making. Gridlock over issues of chemical and nuclear risk have shown that experts and the lay public view risks differently (Krimsky and Golding, 1992). Recent national research reports have discussed at length the subjectivity of even the most technical tools of environmental decision-making--risk assessment and cost-benefit analysis (NRC, 1996; PCRARM, 1997). Policy initiatives aimed at regulatory flexibility, such as EPA's Project XL, have underlined the need to introduce social values into deliberations when making tradeoffs among risks which are difficult to compare using standard decision tools (reducing cancer risk from airborne toxics versus conserving fresh water, for example). Reflecting increased attention to the importance of the public's role in environmental decision-making, the National Research Council (NRC) recently concluded that public involvement "is critical to ensure that all relevant information is included, that it is synthesized in a way that addresses parties' concerns, and that those who may be affected by a risk decision are sufficiently well informed and involved to participate meaningfully in the decision" (NRC, 1996). Yet the participatory methods institutionalized in

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1 "Public participation" and "public involvement" are used interchangeably. Unlike the term "stakeholder involvement" they do not necessarily imply that participants represent discrete constituencies.

environmental law, such as formal comments, public hearings, and citizen suits, have proved inadequate to effectively meet the challenge of constructively involving the public.

Recent efforts at many levels of government show a commitment to moving beyond formulaic approaches to public involvement. The Environmental Protection Agency, Department of Energy, and Department of Defense have initiated over 200 citizen advisory groups at contaminated sites around the country (FFER, 1996); a number of states have incorporated public involvement into comparative risk efforts (Perhac, 1997; WCED, 1997); and public advisory groups have become important components of EPA's environmental justice activities, place-based decision-making efforts, and reinvention programs (Davies and Mazurek, 1998; Mlay, 1996; NEJAC, 1996; NAPA, 1997).

Despite the resurgence of interest in public participation, no consistent method has emerged for evaluating the success of individual processes or the desirability of the many participatory methods. One reason is a lack of consensus on what public participation is supposed to accomplish. Are participatory programs intended to empower disenfranchised groups or to make it easier for government agencies to implement their programs? Is a program successful if it simply involves more of the public, or should it have to result in demonstrably better decisions?

A second, and perhaps more intractable, barrier to consistent evaluation arises from fundamental differences of opinion on the nature of democracy. Most people would not dispute that, in a democracy, citizens have a right to participate in the decisions which affect them. However there are wide-ranging views on what form that participation should take. A *managerial* perspective entrusts elected representatives and their appointed administrators with identifying and pursuing the common good (Laird, 1993, p. 343). While knowledge of public preferences is vital to a managerial approach, the direct involvement of the public in decision-making is seen as a threat to the common good because it opens the door to self-interested strategic behavior. A *pluralist* perspective views government, not as a manager of the public will, but as an arbitrator among various organized interest groups. In pluralism, there is no objective "common good" but a relative common good arising out of the free deliberation and negotiation among organized interest groups (Williams and Matheny, 1995). The *popular* perspective calls for the direct participation of citizens, rather than their representatives, in making policy. Popular democratic theory stresses the importance of direct participation in instilling democratic values in citizens and strengthening the body politic.

Each perspective favors a different form of participation. The managerial perspective may favor a survey while the pluralist perspective favors a stakeholder mediation, and the popular perspective favors a citizen advisory group. Given these divergent models of the proper role of citizens in decision-making, it is not surprising that the state of evaluation still resembles one researcher's 1983 description: "the participation concept is complex and value laden; there are no widely held criteria for judging success and failure; there are no agreed-upon evaluation methods; and there are few reliable measurement tools" (Rosener, 1983, p. 45).

The framework described in this paper is a response to the need to evaluate public participation programs. It is designed with three objectives in mind: (1) to identify the

strengths and weaknesses of a number of different participatory mechanisms--including those favored by managerial, pluralist, or popular perspectives; (2) to be "objective" in the sense of not taking the perspective of any one party to a decision; and (3) to measure, to the extent feasible, tangible outcomes. There is little doubt as to the usefulness of such an evaluative framework. It can determine whether participatory programs are working, how they can be improved, which mechanisms work best for particular needs, and, ultimately, whether participatory programs justify the commitment of public and private resources.

In order to arrive at evaluative criteria that meet the three objectives, its is important to return to one of the core tasks of program evaluation: identifying the set of goals that a program is intended to achieve. Policy evaluation typically measures the impact and efficiency of an intervention in ameliorating the societal problems at which it is directed. This can be relatively straightforward when evaluating, for example, the success of after-school programs in reducing neighborhood juvenile crime or the effectiveness of prison job training programs in reducing recidivism. But what is the problem (or problems) public participation programs are meant to fix?

We start with the premise that the environmental regulatory system has a number of systemic ailments to which public participation may provide at least a partial cure. The problems are well known: the public lacks basic knowledge about many environmental issues; policymakers inadequately consider public values and preferences; opportunities to correct mistakes or find innovative solutions go unexplored; the public mistrusts agencies' resolve to protect health and the environment; and, a culture of conflict prevails. Six "social" goals emerge from this problem assessment and form the basis of this paper's evaluative framework. The goals are:

- Educating and informing the public,
- Incorporating public values into decision-making,
- Improving the substantive quality of decisions,
- Increasing trust in institutions,
- Reducing conflict, and
- Achieving cost-effectiveness.

Section 1 describes this social goals framework in detail. It presents the goals and justifies their inclusion. The section ends with a brief illustration of how the framework can be used to analyze public participation in clean-up decisions at California's Fort Ord military base in California.

One of the enduring characteristics of public participation and its evaluation is the absence of obvious answers to even the most basic questions. In fact, researchers, practitioners, and participants give a number of different implicit or explicit answers to the question posed above: what problem (or problems) is public participation supposed to fix? Different answers to this question lead to different approaches to evaluation. Section 2 looks at two of these alternative approaches. In the first, a generalized lack of democracy in

environmental decision-making is the problem. Related evaluations focus mainly on the process, rather than outcomes, of participation. In the second approach, barriers which hamper the fulfillment of a particular group's objectives are the problem. Related evaluations focus on the specific goals of one or several stakeholders. The section presents a comparison of the advantages and disadvantages of these approaches with those of our framework.

While the first two sections of the paper discuss public participation as a concept, Section 3 addresses it in practice. The real world has only a limited number of formalized mechanisms to foster participation. This section describes a number of them and asks which are most likely to achieve each of the six social goals. The mechanisms discussed include:

- traditional participatory mechanisms, such as public hearings, public comments, and advisory committees;
- one-way flows of information such as surveys, focus groups, and public education;
- mechanisms associated with collaborative decision-making and conflict resolution, such as mediation and regulatory negotiation; and,
- innovative forms of public deliberation, such as citizen juries and consensus conferences.

The section identifies four characteristics that define and distinguish these mechanisms: their pattern of information flows, how they represent the public, the public's decision-making role, and the number of potentially opposing interests involved. By tying these characteristics to the goals of interest, the section identifies what various public involvement mechanisms ought to be expected to accomplish.

Section 4 concludes the paper with a summary of the social goals framework and its implications. It suggests areas for further research to test many of the assumptions built into the framework, to clarify the relationship between the process of participation and its outcomes, and to investigate how different types of environmental issues may require different approaches to participation.

1. EVALUATING PUBLIC PARTICIPATION USING SOCIAL GOALS

The framework presented in this section evaluates the outcomes of participatory processes, but it takes a broader view of outcomes than is typical. Normally, the "outcome" of a decision-making process refers to its substantive decisions, conclusions, or recommendations--such as whether an incinerator should be built, what environmental problems should receive priority attention, or what emergency response system should be established at an industrial facility. These substantive outcomes can be evaluated (and even compared with comparable non-participatory decision processes) using a variety of criteria, including stakeholder satisfaction with the result, cost-effectiveness, or risk minimization. But narrowly interpreting "outcome" to refer only to substantive decisions misses some of the most important results of participatory processes--and indeed those which justify opening up decision processes to the

public in the first place. A more expansive interpretation of outcomes includes the extent to which a participatory process has achieved a set of "social goals."

Social goals are those goals which public participation ought to be expected to achieve but which transcend the immediate interests of parties involved in a decision. The benefits of achieving these goals spill over from the participants themselves to the regulatory system as a whole. How well they are achieved often depends as much on how participants feel about the decision-making process as by the substantive decisions made during it.

The first social goal deals with participation's educational function--its effectiveness at providing the public with sufficient knowledge to participate in decision-making and to become active partners in a functioning regulatory system. The next two goals turn the educational table around and address how well public participation informs agencies about public values, preferences, and substantive knowledge. The following two goals address the Herculean tasks of restoring trust in regulatory institutions and reducing conflict among stakeholders. The final goal is the cost-effectiveness of the decision-making process (rather than the result of that process). It recognizes the importance of choosing the right approach--or no approach at all--to public participation. Each of the six goals are discussed in subsections that follow. The section concludes by showing how the framework can be used to analyze the Fort Ord Restoration Advisory Board, a public advisory committee established to help make clean-up decisions at the Fort Ord army base in California.

Goal 1: Inform and Educate the Public

Public education is increasingly important to a well-functioning environmental regulatory system. Knowledge about environmental issues allows the public to carry out the role envisioned in major environmental legislation of identifying violations, applying community pressure, enforcing laws, and contributing to permitting and rulemaking. Programs such as the Toxic Release Inventory and other right-to-know initiatives continue this tradition of utilizing the public as a regulatory resource. Because it is a precursor to behavioral change, education also plays an increasingly important role as environmental priorities come to focus on issues in which the collective effects of individual decisions are crucial. Examples include the environmental effects of transportation, contaminated run-off, and energy use. Finally, education ensures that the technical complexity of issues does not hamper the public's ability to participate in decision-making.

Although a large cadre of citizens well-informed about the environment might fulfill a Jeffersonian ideal of public participation, such a vision is clearly not realistic. Instead, we can differentiate between what the actively involved public and the wider affected public might reasonably be expected to know. Ideally, the active public would gain sufficient knowledge to enable them to deliberate issues and formulate alternatives with government representatives and experts. This does not mean that they should simply be supplied with the information that supports agencies' decisions. Information is not neutral, and disagreement on facts and their interpretation are valid. There may also be considerable disagreement on the relevance of different types of knowledge to a decision-making process. Often, members of the public will

contest information because they distrust its source. These complications add tremendously to the knowledge that the participating public might ideally possess. In the best of situations, all of the active public would understand the relevant technical and economic issues (including their inherent uncertainties), the tradeoffs involved in various outcomes, and the interests of other stakeholders.

The knowledge requirements for the active public are clearly too ambitious for more than a handful of citizens. But the wider public ought to know enough about relevant issues so that, if called on to decide an issue or offer an opinion, they would have a realistic understanding of the consequences of their choice. Yet evidence suggests that even this moderate requirement is ambitious. In Roper's most recent "National Report Card" on environmental attitudes and knowledge, nearly two-thirds of Americans received a failing grade on basic questions about the environment (NEETF, 1997). Perhaps more importantly, respondents consistently chose the same wrong answer to some questions. A majority attributed, for example, the principal cause of U.S. water pollution to factories (rather than run-off) and cited hydroelectricity (rather than fossil fuels) as the main source of electricity in the U.S. This misinformation clearly affects how well the public controls its own contribution to water and air pollution. Misinformation also hampers the public's ability to apply pressure to other polluters or contribute to public decision-making when the opportunity arises.

In order to assess achievement of the goal, questions of quantity and quality are important. How many members of the public were actively involved in participatory fora or took advantage of information and access provided to them? What percentage of the wider public was reached through education campaigns, media relations, or interaction with more active participants? Did the active public feel that they had sufficient knowledge to contribute to deliberations and decision-making? Did members of the public understand their role in the participatory process? Was there sufficient time and money available to obtain credible, relevant and, if necessary, independent information?

Goal 2: Incorporate Public Values, Assumptions, and Preferences into Decision-making

While the first goal focused on educating the public, this goal and the next focus on educating public agencies. The risk perception and communication literature contains numerous examples of the differences between public and expert perception of risk (Krimsky and Golding, 1992). In a much noted example, a 1987 study by EPA on ranking environmental risks assigned priority to various environmental issues that were nearly opposite the ranking the public reported in opinion polls (Davies and Mazurek, 1998). Even the most technical aspects of environmental policy analysis--risk assessment and cost-benefit analysis--require often unacknowledged value judgements (NRC, 1996).[2] Discussions of the

[2] A short list of "technical" decisions on which public values might ideally come to bear include the protection accorded future generations through discounting, the weight given to children's health as opposed to that of adults in aggregating risks, or the importance of cancer rather than non-cancer effects in identifying health endpoints to be researched.

validity of public and expert perceptions of risk for guiding policy are beyond the scope of this paper.[3] However, differences over values, assumptions and preferences need to be discussed in a process that fosters mutual education and, ideally, results in their incorporation into analyses and decisions. In order to give the widest range to discussions about values, assumptions, and preferences, all of the affected stakeholders should be included in the process.

Relevant questions for measuring the goal include the impact of public input and the scope of the public represented. Was information from the public participation process used to inform or review analyses or decisions? Did the public feel that it had an impact on decisions? Where public input was not incorporated into analyses or decisions, did the relevant agency provide justification which was acceptable to the public? Were all reasonably affected parties included or represented, particularly those with no formal organization? Did participants reflect the larger "public" they were expected to represent, for example, in terms of socioeconomic criteria? Were there mechanisms to hold participants accountable to the community which they represented?

Goal 3: Increase the Substantive Quality of Decisions

Not only is the public a source of values, assumptions, and preferences, but a source of facts and innovative alternatives. This goal relies less on the normative argument of Goal 2 and more on the substantive argument that public input can make decisions more technically rigorous and satisfying to a wider range of interests. This goal stops short of defining efficiency or equity criteria for what constitutes a "better" decision. In most cases, it is simply impossible to calculate costs and benefits against a baseline, figure out whether participants have "expanded the pie," or come up with an objective decision about who ought to get what.[4] Instead, we have to settle for evidence that the public participation process added useful substantive knowledge or ideas that would not have been available otherwise. These might include identifying relevant factual information, identifying mistakes, or generating alternatives which satisfy a wider range of interests.

Relevant questions concern evidence that decisions were "better" in terms of participant satisfaction and in terms of generating new information. Did the public involvement process clearly increase all parties' satisfaction with the outcome relative to the likely non-participatory outcome? Were new alternatives generated? Were new opportunities for trade-offs or compensation between parties identified? Were relevant new facts revealed that corrected or otherwise clearly improved the technical analysis? Were decisions technically, financially, or otherwise achievable?

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[3] For a discussion of the normative issues surrounding lay and expert risk perception as guides for policy, see Perhac (1996).

[4] For some participatory mechanisms, such evidence may emerge from the decision itself. In mediations or regulatory negotiations, for example, participants would not be expected to join the process or agree on a resolution unless it was superior to what they would have achieved through a less participatory method. In these cases, an implementable agreement may be sufficient evidence of achieving the substantive quality goal.

Goal 4: Foster Trust in Institutions

The percentage of Americans reporting that they trust the government has dropped by roughly half from the time of the Kennedy Administration to today (PRC, 1998). Parallel declines in party identification, voter turnout, and confidence in institutional leadership signal what has been described as a "decline of deference" to society's authoritative institutions (Laird, 1989). The precipitous drop in trust and deference may represent a healthy public skepticism in the wake of scandals and mismanagement by these same authoritative institutions. However, it is also symptomatic of what some claim to be a general decline in the norms of civil society (Putnam, 1995). As "social capital" decreases, the ability to resolve environmental issues is seriously circumscribed.

Three characteristics of many environmental issues--the long time horizon to realize benefits and costs, the absence of clear feedback on the success of management efforts, and the diffuse nature of benefits--make agency trustworthiness particularly important (DOE, 1993, p. 19). A number of analyses of public trust suggest that it is far easier to lose than to regain. However, one of the most effective ways to regain public trust may be to involve and empower the public in decision making (Slovic, 1993; Schneider et al., 1997).

Trust may be the most difficult goal to measure, partly because it is difficult to define. In some cases, changes in the level of trust may be reported. Often however, indicators of trust have to be imputed from its two components: competence (i.e., the ability to do what is "right") and fiduciary duty (i.e., the will to do what is "right") (DOE, 1993, p. 12). Evidence that the public feels that an agency is capable of, and obliged to, serve the public interest (however defined) can serve as a proxy for trust. Does the public have confidence in the agency's technical abilities? Does the public feel that its interests are the same as the agency's interests, or at least valued by the agency? Would the agency be willing to turn over decision-making authority? Would the public let the agency undertake a similar decision-making process with less public oversight?

Goal 5: Reduce Conflict Among Stakeholders

Goal 5 arises from the view that public participation ought to be a process of identifying shared norms and values rather than a lever for exercising the will of one set of stakeholders. Adopting this perspective, however, leaves room for the belief that opportunities for consensus on a particular issue may be quite limited. Where decisions are reached, they should be realistic enough to be implementable. Even if parties cannot resolve a particular issue, the process ought to help participants understand the goals and perspective of others by fostering communication and building relationships. Ideally, relationships (and decisions, if made) would remain stable over time, reflecting an ongoing absence of conflict or agreed-upon mechanisms for resolving emergent differences (Susskind and Cruikshank, 1987).

In some cases, there are direct measures of conflict reduction: Did public involvement reduce political or public opposition to the decision as reflected in testimony at public hearings, letters and op-eds in relevant news sources, the level of activism, or political debate? Did it lead to less litigation than a reasonable norm or baseline? If an agreement was reached,

was it stable over a reasonable period of time? Were there mechanisms for re-negotiation and discussion as information and situations changed? Concerning relationships with a public agency, did public involvement improve the image of the agency (perceptions of trust, competence, etc.) in such a way that future issues may be easier to deal with? Concerning relationships between other stakeholders: Did public involvement improve or worsen communication and/or cooperation among interested parties during and after the process?

Goal 6: Cost-effectiveness

Certainly not every environmental decision justifies an active public participation program. Few can support as extensive a process as many observers would like. The goal of cost-effectiveness addresses the appropriate use and scope of public participation mechanisms. It does not refer to the cost-effectiveness of decisions made in participatory processes, but to the cost-effectiveness of choosing among the different participatory or non-participatory approaches to decision-making.

The goal of cost-effectiveness can be considered the goal which constrains the achievement of the first five goals: was the public participation mechanism the most cost-effective way (in terms of money, time, risk, and opportunity cost) of achieving the benefits (in terms of Goals 1 though 5) relative to other mechanisms which reasonably could have been expected to achieve the same results? Was an advisory committee used when a public hearing would have been sufficient? Was a citizen jury convened when public education would have achieved the same goals? The goal argues that public participation programs must earn their keep by producing results--such as education, trust, and conflict reduction--which justify the added effort.

The most important step in determining cost-effectiveness is the evaluation of the first five goals, as these define "effectiveness" in our framework. The evaluation is then supported by questions of valuation: How much did the public involvement process cost all participants in terms of time and money? What were the opportunity costs for all participants in terms of shifted resources and delayed action? What costs did the process help avoid?

Evaluating the Fort Ord Restoration Advisory Board

A recent example of public participation at California's Fort Ord Army Base illustrates how this framework can be used in practice. The Department of Defense (DOD) recently established Restoration Advisory Boards (RABs) to assist with decisions about environmental clean-up at all of its closing, and some of its operating, installations (FFER, 1996, p. 48). DOD intended the boards to be composed of "diverse interests within the local community" as well as, in the Fort Ord case, representatives of a variety of federal and state agencies. They would meet frequently and, through deliberation on clean-up decisions, educate the public and seek consensus on site decisions. In spite of these goals, controversy has wracked California's Fort Ord RAB since its inception. Rather than a forum for tackling the large number of substantive decisions that needed resolution, it became, in the words of a Fort Ord official, "a forum for the activist community to say [its] piece" (*Inside EPA*, 1998, p. 19). Conflict over

minor procedural issues and bylaws paralyzed the process in spite of DOD's efforts to address these problems by bringing in outside facilitators. As a result of the persistent problems, EPA hired consultants who ultimately recommended the dissolution of the RAB. To avoid the further ire of community activists, DOD and the Army decided to retain the Fort Ord RAB but to seek community input through alternate means.

The Fort Ord RAB has become somewhat notorious for its level of contention, and it is clearly not representative of the vast majority of RABs operating at other bases.[5] However, the board's recognized dysfunction provides a stark opportunity to ask the question: On what basis can we judge its success or failure?

But for a few substantive contributions to cleanup decisions, the grades on our evaluative goals are mostly failing. In spite of workshops intended to educate RAB members, most reported not being confident in their understanding of the issues, had difficulty digesting relevant documents, could not keep up with technical RAB members, and questioned their ability to provide meaningful input (Szasz and Meuser, 1995; Wernstedt and Hersh, 1997). Perhaps more importantly, members were confused about the purpose of the RAB and whether its decisions were binding on the Army (Siegel and Houghton, 1997a). Little information appears to have made it out of the RAB to the wider public. RAB members reported that their communication with community members outside the group was non-existent or, at best, haphazard (Szasz and Meuser, 1995, p. 12). Although RAB meetings were open to the wider public, active participation was limited to questions at the beginning of the meeting (Wernstedt and Hersh, 1997).

Procedural paralysis of the RAB prevented much substantive contribution to decision-making. In one case, however, RAB input caused the Army to include sewage outflows located on the beach in a surface and storm water study rather than designating them a "no action site" (Wernsted and Hersh, 1997). Fort Ord also gets a modest grade for involving a range of affected interests. Membership in the RAB included interests from federal, state, and local agencies, conservation and environmental groups, environmental justice advocates, and local political interests (Wernsted and Hersh, 1997). However, some members of the RAB charged that it under-represented Latino, African-American, and Asian populations in surrounding communities.

The RAB performed decidedly worse on trust and conflict. Siegel and Houghton (1997a) reported that an "ongoing lack of trust among community RAB members themselves and between some citizen members and the Army" was a chronic problem. Rather than resolving conflict, the RAB was a forum for amplifying it, earning it a "national reputation for contentiousness" (Siegel and Houghton, 1997a). The lack of trust and conflict contributed to the RAB's attrition rate. Some agency representatives on the board stopped attending because the RAB was becoming a "political committee" that wouldn't fulfill its task to address cleanup issues. Half of the original public members of the RAB dropped out before their terms had

[5] Robert Hersh, personal communication (March 9, 1998).

expired. If mistrust and conflict had such an impact inside the RAB, one could surmise that it did little to alleviate these problems among the wider community.

Finally, the determination of cost-effectiveness depends on how one values the RAB's achievements. When we weigh its moderate substantive input against lost ground on most other important goals, the gains from the process appear slight. It clearly increased mistrust and conflict, making opportunities for education and substantive community contribution more difficult in the future. With a deficit on the benefits side of the balance sheet, we can easily postulate that a less resource-intensive method of public participation (or no participation at all) could have arrived at better outcomes. Table 1 summarizes the results of the Fort Ord Evaluation.

Table 1: Summary of Fort Ord Evaluation

Goal	Result
Inform and educate the public	Little education of active or wider public on substantive issue or participatory process
Incorporate public values, assumptions, and preferences into decision-making	Some evidence of impact of public preferences on decisions (sewage outflows) and moderate success in including representative stakeholders.
Increase the substantive quality of decisions	Few substantive issues addressed by RAB.
Foster trust in institutions	Mistrust among public participants and between the public and government was likely augmented by the process.
Reduce conflict among stakeholders	Process likely increased conflict.
Cost-effectiveness	Given the poor performance on Goals 1 though 5, another process--or no process at all--might have been equally effective.

Conclusion

The evaluative framework presented here fulfills the three requirements outlined in the paper's introduction. It is flexible enough to apply to a wide range of mechanisms. It is objective in the sense of addressing the concerns of "society" rather than those of any specific interest. And, it measures the tangible outcomes related to our social goals. But it is only one possible approach to evaluating public participation. The next section turns to two other possible approaches and discusses how their advantages and disadvantages compare with the framework we have presented here.

2. ALTERNATIVE APPROACHES TO EVALUATION

The introduction to this paper asserted that the principal question regarding the evaluation of public participation concerned problem formulation: what is the societal problem (or problems) public participation programs are meant to fix? It suggested that different answers to that question would lead to different approaches to evaluation. The framework presented in Section 2 answered the question by identifying a number of systemic problems plaguing environmental policy. As the introduction noted, however, many different kinds of answers--and therefore different approaches to evaluation--are possible. This section looks at two different alternatives: what we will call process evaluations and interest-based evaluations.

Process Evaluations

One possible set of answers to the problem formulation question shares the common theme that environmental decision-making is insufficiently democratic: unelected administrators dominate the policy-making process, legislators pander to special interests, and public agencies lack accountability to the people they are intended to serve. These criticisms often emanate from a desire for a more popular, rather than representative or pluralist, democracy. They take for granted the benefits of more public involvement, and leave evaluators the task of judging how well actual decision-making processes match a participatory ideal.

The evaluations typically don't examine what participation accomplishes, but what it looks like. Were participants representative? Was the membership balanced? Did participation occur early in the process? Were there face-to-face discussions between the public and agency representatives? Was the agency committed to the participatory process and responsive to public input?[6] In an evaluation of U.S. Forest Service land management, for example, Blahna and Yonts-Shepard (1989) evaluated programs using these five questions. Crosby, et al. (1986) used a similar approach to evaluate a citizen's panel on agriculture and water quality in Minnesota. Although a process approach is appealing, and suggests that an evaluator need only a complete checklist, we note three difficulties below.

The first difficulty arises from the implicit assumption that good processes lead to good outcomes. Clearly, process-related issues are important to the kinds of goals outlined in Section 1. Indeed, the literature on procedural justice suggests that fair processes are likely to have an equal or greater impact on the level of participant satisfaction than any substantive decisions made (Lawrence et al., 1997, p. 578; Kim and Mauborgne, 1997). If participants

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[6] These and many other criteria for what constitute good processes have been derived from theory (Webler, 1995; Fiorino, 1990, pp. 229-230) or "rules of thumb" which practitioners and researchers have found to be consistently successful over time (Ashford, 1984, p. 79; Crosby, 1986, p. 171; Blahna and Yonts-Shepard, 1989, pp. 211-213; Peelle, 1996). Additional criteria on which a rough consensus has emerged include: clarity of goals and roles of participants; sufficient resources, including financial support, time, and information; recognition of the legitimacy of public input equal to that of officials and technical experts; procedural independence of public to make decisions, set the agenda, and acquire technical information; and, the presence of a strong chairperson or facilitator.

are satisfied, they may learn more, share more opinions, brainstorm solutions, trust the sponsoring agency more and engage other stakeholders more constructively. Unfortunately, the relationship between procedural criteria (balanced membership, face-to-face discussions, etc.) and the goals of interest are poorly supported by the literature. As a result, process evaluations are unclear about what aspects of the process are necessary rather than merely sufficient for a desired result.

The five evaluative questions used in the Forest Service and water quality studies mentioned above, for example, would give a much more optimistic picture of the Fort Ord RAB than that painted in Section 1. It was reasonably balanced, represented a variety of community points of view, met early in the process, allowed for face-to-face discussions, and the agency was at least committed enough to try to salvage the process when it began to deteriorate. Only if we extend the questions to other aspects of the process, do the problems emerge. Lack of financial support, confusion over the RAB's decision-making role, an overly strict scope of discussion, and the appearance of a lack of commitment are probably the procedural factors that most fed the RAB's failure (Wernstedt and Hersh, 1997). Only by beginning with our expansive definition of outcomes, however, can we identify these as the important procedural issues to examine.

Second, process criteria can't be applied to the wide variety of public participation mechanisms available. For example, it may make sense to have an advisory committee meet early in a process, but it is probably inappropriate to hold a mediation among stakeholders until relatively late, when interests are clear and deadlines are looming. Similarly, face-to-face discussions are probably not necessary if the goal is simply to transmit information, through online access to TRI data, for example.

Third, the criteria may not capture all of the important factors affecting a participatory process. Community conditions, existing relationships among stakeholders, and the institutional capacity of agencies may be very important contextual factors in how well processes function (English, 1991; Peelle, 1996). For example, economic, cultural, and racial differences among Fort Ord's surrounding communities probably made public involvement more difficult than it would have been for a more homogenous public. The advantage of looking at outcomes is that they capture all of these contextual forces. Attention to procedural issues is clearly an important part of evaluation, but, for all of these reasons, is an inadequate measure of program success.

Interest-based Evaluations

A second set of answers to the problem formulation question concerns the interests of specific parties: public opposition prevents agencies from implementing projects, a community group can't stop the construction of a nearby incinerator, or a disenfranchised group can't get action on its unique concerns. All of these responses focus attention on the goals of only one set of interests, without regard to those of others. Regulatory agencies, the affected community, the active community, taxpayers or a myriad of other special interests may be the focus. In most decision-making settings with multiple stakeholders, these parties

will seek incompatible goals. In some cases, tradeoffs can "expand the pie," but all participants will rarely be fully satisfied (English, 1991, p. 18; Rosener, 1983; Sewell, 1979). The multiplicity of interest-specific goals gives rise to competing definitions of success.[7] Corresponding evaluations focus on whether participatory decisions satisfy one or more of these particular interests.

The most common type of interest-based evaluation--and the type most often criticized as a relic of the "decide, announce, defend" approach to agency decision making--takes the perspective of the sponsoring agency. Goals are often some form of public ratification of agency decisions. In a survey of 22 public participation program evaluations, Sewell (1979) reported that "to secure public acceptance of agency proposals" was the dominant objective in all evaluations performed solely by agency personnel. Evaluations performed by citizen groups, independent observers, and consultants, on the other hand, contained a variety of different objectives.

At the other pole of interest-based evaluations are those taking the point of view of the public. Of course, the public may have a panoply of competing and complementary goals or may have goals regarding the quality of the participation itself. For groups which have traditionally been excluded from decision making processes, their mere inclusion may represent a significant goal.

The main advantage of interest-based evaluations is their relative simplicity: Did party X get what it wanted or not? This simplicity, however, is also these evaluations' main weakness as it forces the evaluator to determine which parties' demands are more legitimate. In the Fort Ord case, the Army saw the RAB as a fiasco because it failed to address substantive issues. Activists saw the RAB as a success to the extent that they were able to make their opposition known. Who was in the right? The consultants who recommended that the RAB be disbanded did so because the wider community's views were not being heard. Yet there appears to have been no unified community voice at Fort Ord. Instead, there were likely to be disagreements among various "publics." Which one of these should triumph?

Some researchers have attempted to overcome the problem of picking the "right" interest by attempting to measure the achievement of all stakeholder's goals and then aggregating the results into some overall measurement of success. At least in theory, these evaluations would measure the satisfaction of all affected parties to a decision, add them up, and compare the result to a similar decision achieved without participation. Kerwin and Langbein (1995) took this type of approach for a very comprehensive attempt to measure the effectiveness of regulatory negotiations. Although the authors were able to get overall measures of participant satisfaction, the task of identifying a baseline with which to compare the negotiated approach proved more complicated than anticipated, and baselines were not included in the report. The difficulty of this methodology for a very formal mechanism such

[7] For a list of the variety of definitions of success used to evaluate public participation programs, see Lynn and Busenberg (1995).

as regulatory negotiation bodes ill for using it to evaluate other, considerably more messy, methods for involving the public.

Conclusion on Evaluative Frameworks

Process and interest-based evaluations, as well as the social goals approach presented in Section 1, all have advantages and disadvantages. Neither the process evaluations nor the interest-based evaluations meet the three requirements spelled out in the introduction: applicability to multiple mechanisms, objectivity, and outcome-orientation. However, they are better designed than the social goals framework to tackle important issues of re-democratizing environmental decision-making or addressing problems that any particular party has in achieving its objectives. There is no "right" evaluative framework. The choice of approach should be tailored to the kind of problems the evaluator is interested in and the questions he or she is trying to answer. That said, it is reasonable to assume that some of the social goals--particularly restoring trust and reducing conflict--will not be achieved without attention to the democratic values and specific interests of the various participants which form the basis of the alternative evaluative frameworks discussed in this section.

3. LINKING MECHANISMS AND GOALS

The six societal goals outlined in Section 1 apply to public involvement writ large. In practice, participation occurs through only a limited number of mechanisms. The discussion in this section is limited to mechanisms intentionally instituted by government to involve the lay public, or their representatives, in administrative decision-making on environmental issues. The definition explicitly excludes important conventional and regulated methods of participation such as voting and lobbying as well as unconventional and extralegal methods such as striking, picketing, and violence.[8] In an important sense, formal participatory mechanisms are substitutes for a more direct approach to democracy than that provided by our representative system. If all decisions were made through popular vote by informed individuals--the model of the New England town meeting, for example--most of these participatory mechanisms would not be necessary. The controversies over direct democracy, however, are well known.[9] The participatory mechanisms discussed here can be viewed as an indirect but manageable way of introducing popular democracy into a representative system.

Each participatory mechanism can be anticipated to be relatively better at achieving some of the social goals and worse at others. This section outlines which goals each mechanism ought to be expected to achieve. It covers one-way flows of information such as surveys, focus groups, and public education; traditional participatory mechanisms, such as public hearings, public comments, and advisory committees; mechanisms associated with collaborative decision-making

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[8] It also excludes public input through referenda, initiatives, and citizen suits although the analysis could be extended to include these mechanisms.

[9] See Cronin (1989) for an interesting recent discussion.

and conflict resolution, such as mediation and regulatory negotiation; and innovative forms of public deliberation, such as citizen juries and consensus conferences.

Matching mechanisms to goals is useful for the evaluator and the practitioner. It provides the evaluator with an appropriate set of goals by which to realistically assess the success of a given public participation process. For the practitioner, it assists in selecting the type of mechanism which is most likely to achieve the goals of interest. Should an advisory committee be formed, or will a public education campaign suffice? Could a mediation be used, or would a public deliberation be more appropriate? Of course, goals are only one consideration in such decisions. Some mechanisms, such as mediations and negotiations, have quite a specific list of prerequisites before they can be undertaken successfully (Bingham, 1986; Kerwin and Langbein, 1995). Rather than delving into these contextual issues, this section deals with the question of what goals each mechanism could achieve if undertaken under the best of circumstances.

The approach we take for matching mechanisms with goals is reductionist in nature. It breaks down the various mechanisms into four component characteristics, including:

- information flows,
- the degree of interaction among potentially opposing interests,
- the type of representation, and
- the decision making role of the public.

Figures 1 and 2 present a graphic typology of mechanisms showing how they are arrayed along the dimensions defined by each of the four characteristics.[10] *Information flows* can be one-way, with information flowing from the public to the government in forms such as surveys and focus groups (Group A). Or, they can go in the opposite direction, with government providing information to the public through public notices or the provision of right-to-know information (Group C). Mechanisms employing two-way flows of information, such as advisory committees or mediations--offer varying degrees of opportunity for deliberation among participants (Group B). The degree of *interaction among potentially opposing interests* can range from none, as in the case of a survey, to high, as in the case of a multi-party mediation. The *type of representation* ranges from citizens representing themselves at a public hearing, to "representative" members of an advisory committee, to professional public interest or environmental group representatives engaged in a regulatory negotiation. The *decision-making role of the public* can range from none, in the case of a focus group, to a direct decisional role in ratifying an agreement arrived at through mediation.

[10] The figure describes each mechanism in its stylized form. This raises questions about how they are supposed to be designed and used as opposed to how they are designed and used in practice. In practice, the applications of some of these mechanisms may differ so much that it may be possible to array case studies of the same mechanism along many of the same dimensions we are using to distinguish between *different* mechanisms. This is one reason to break each mechanism down into component parts rather than use the qualities of a generic form.

Figure 1

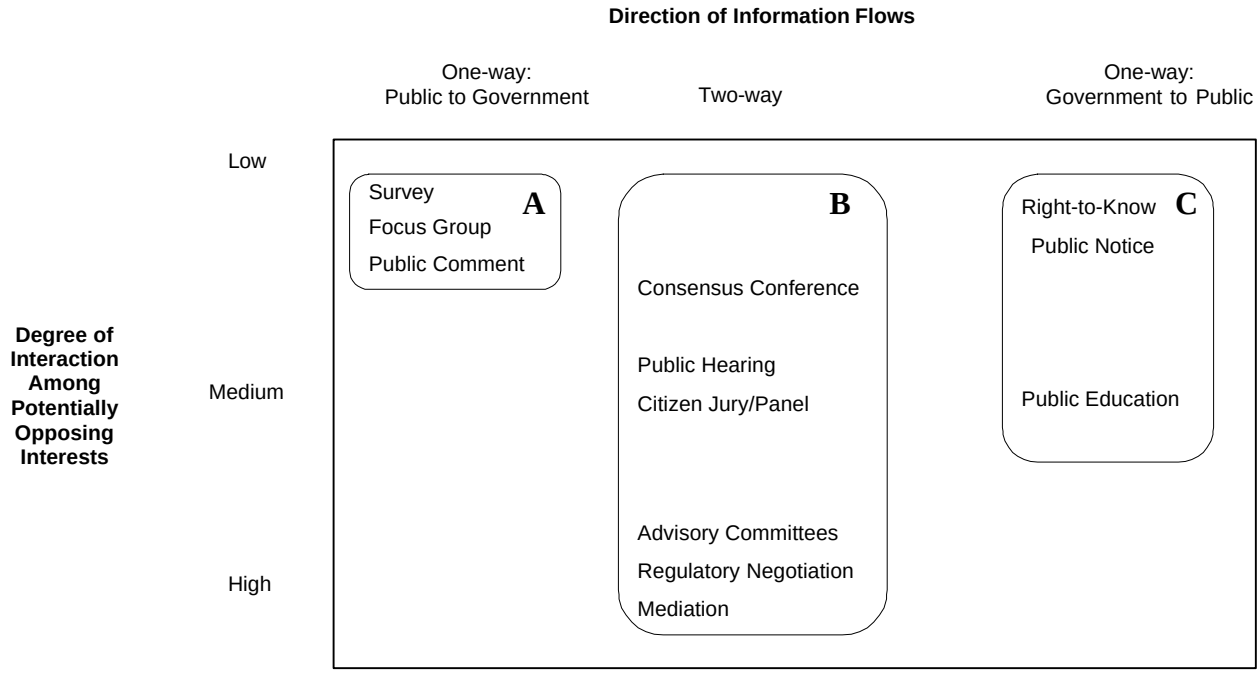
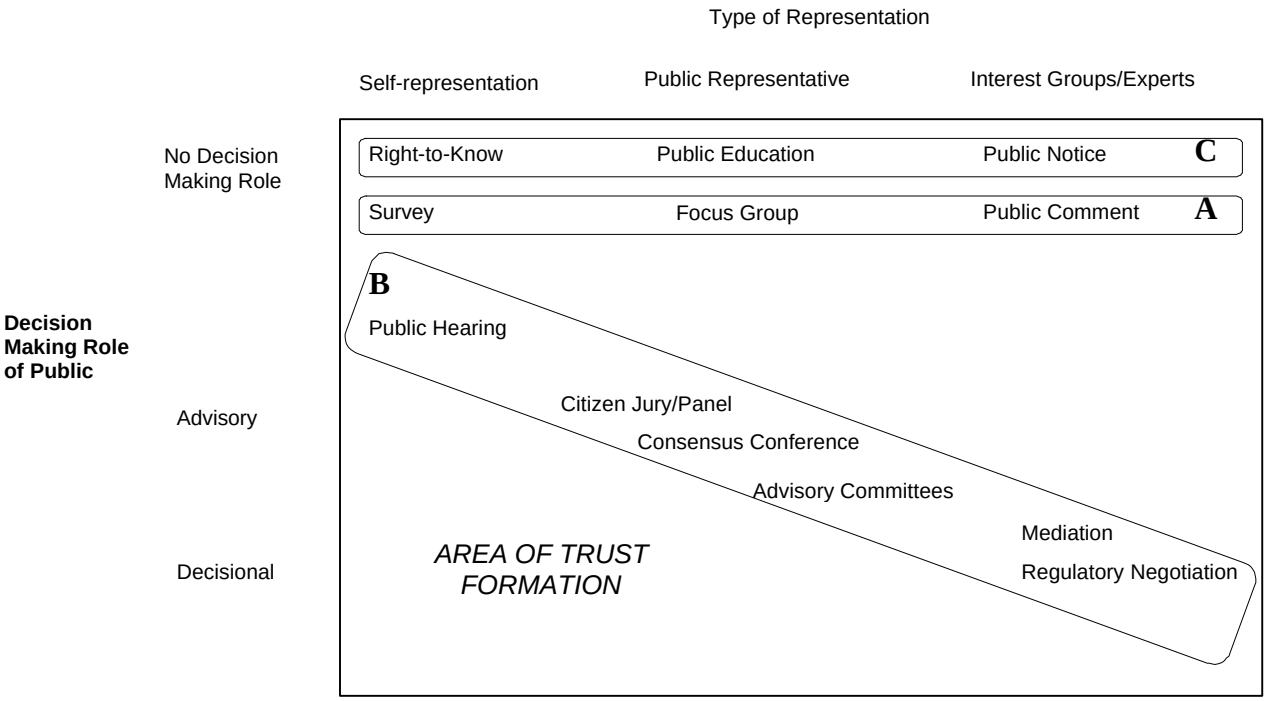


Figure 2



Each characteristic is linked to goals by way of hypothesized relationships:

- Information flows. Mechanisms which provide information about the public to the government--Group A--will be mainly useful for providing decision-makers with public values, assumptions, and preferences (Goal 2) and substantive information to improve decisions (Goal 3).[11] Mechanisms which provide information from the government to the public--Group C--will be mainly useful for increasing public knowledge (Goal 1) and, to the extent that they increase transparency, increase trust in institutions (Goal 4). Mechanisms which allow for two-way flows--Group B--ought to be expected to achieve all of these first four goals.
- Interaction among potentially opposing interests. The greater the degree of interaction among potentially opposing interests, the greater will be the opportunity for reducing conflict among stakeholders (Goal 5). This applies mainly to mechanisms in Group B.
- The type of representation. All else equal, mechanisms in which the public represents itself (through direct participation) will be better at achieving the goals of education (Goal 1) and trust formation (Goal 4) than those where the general public is represented by "representative" members or professionals (such as lobbyists, etc.).
- The decision making role of the public. All else equal, mechanisms which give the public a direct decision-making role will be better at achieving the goal of trust formation (Goal 4) than those which do not. This applies mainly to mechanisms in Group B.

One important relationship between mechanisms and goals should be highlighted. For mechanisms in Group B, there is an evident trade-off between the control the public has over decision-making and the extent to which the members of the public represent themselves in the process (see Figure 2). This has its greatest implications for issues of trust. According to our assumptions, trust formation will be greatest where the public is both self-represented and plays a decision-making role. However, none of the mechanisms we are discussing have both of these characteristics. The discussion returns to this issue at the end of the section.

The reductionist approach presented here allows us to abstract from the great variety of participatory mechanisms to a manageable set of variables and to make explicit the relationships that we believe tie each mechanism to the goals it can achieve. However, the literature supporting this approach is only suggestive. Although the four characteristics allow us to make useful distinctions, we may have overlooked other important ones. Likewise, the hypothesized relationships between characteristics and goals may turn out to be more complicated than

[11] Although there has been evidence (Stout et al., 1996) that mechanisms such as surveys can increase public knowledge about an issue (Goal 1) and improve the public perception of an agency (related to trust, Goal 4) these are certainly secondary effects, if they occur at all.

suggested here. Beyond its utility for simplifying a complex world, the advantage of the reductionist approach is to make these various assumptions clear. We suggest them as areas for further research.

Discussion of Mechanisms

The characteristics and hypotheses outlined above provide general insights into what goals different mechanisms might achieve. These are described in Table 2 and are refined in sub-sections below.

Table 2: Goals and Mechanisms

	Goal 1		Goal 2	Goal 3	Goal 4	Goal 5	Goal 6
Mechanisms	education	information	public values	substantive quality	trust	reduced conflict	cost-effectiveness
Non-Deliberative Mechanisms for Obtaining Information From the Public							
Survey	○	○	●	●	○	○	●
Focus group	○	○	●	●	○	○	●
N &C Rulemaking	○	○	●	●	○	○	●
Non-deliberative Mechanisms for Providing Information to the Public							
Information provision	◗	●	○	○	●	○	●
Public Notice	○	◗	○	○	◗	○	
Public education	●	◗	○	○	●	○	●
Traditional Mechanisms							
Public hearing	○	●	●	●	◗	◗	●
Citizen Advisory Ctte.	●	◗	●	●	●	●	●
Public Deliberation							
Citizen Juries/Panels	●	◗	●	●	◗	◗	●
Consensus Conference	●	◗	●	●	○	◗	●
Alternative Dispute Resolution							
Mediation	○	○	●	●	◗	●	●
Regulatory Negotiation	○	○	◗	●	◗	●	●

○ = not applicable; ◗ = may be applicable; ● = applicable

Non-deliberative mechanisms for obtaining information from the public

These mechanisms include statutory procedures for soliciting public input through comments on proposed rules or environmental impact statements. They also include non-statutory mechanisms, such as surveys and focus groups, that help public managers incorporate information about the public into decision making. For example, Roper's "Environmental Report Card," mentioned in Section 1, could be used by EPA to guide an education campaign about the role of run-off in water pollution. Likewise, polls may be used to help decide between policy options.

As a group, these mechanisms provide one-way flows of information from the public to the government. Little to no deliberation among different stakeholders takes place, and input is rarely binding on decision-makers. The source of public input differs, however, among mechanisms. While surveys collect the views of individual citizens, focus groups use

"representative" citizens as a proxy for public opinion. Comments on permits and proposed rules are still more distant from the average citizen as they have come to be dominated by those with a professional stake in the outcome (ELI, 1991, p. 1).

The primary goals against which surveys, focus groups, and public comments should be judged include the degree to which they facilitate the incorporation of public values into decision making (Goal 2) and foster the generation of policy alternatives (Goal 3). An interesting research question is how the achievement of these goals changes as the consulted public changes from many citizens (surveys) to representative citizens (focus groups) to citizen representatives (public comments).

Non-deliberative mechanisms for providing information to the public

At the other end of the information spectrum are one-way flows of information from the government to the public in forms such as public education campaigns, the provision of right-to-know information, and public notices. The accessibility of chemical emissions and transfer data through the Toxics Release Inventory (TRI) may be the best known example. Although these mechanisms are relatively passive, the intent is often to inspire more active participation. For example, Advanced Notices of Proposed Rulemaking, which alert the public through a *Federal Register* notice of upcoming opportunities to comment on rules, are intended to encourage public input into the rulemaking process. Proposed federal legislation requiring electricity providers to supply information on emissions and fuel-type to customers on their monthly bill may encourage customers to select power suppliers based on environmental performance (NAPA, 1997, p. 33). For some of these mechanisms--such as the dissemination of TRI data--intermediaries, such as the media or community groups, play important roles in identifying and disseminating information to a wider public.

These mechanisms should be expected to create a better informed and educated public (Goal 1) and to increase trust (Goal 4) by making government and the regulated community more accountable and transparent to citizens. Whether information provision informs a large number of people or educates a small number will depend on the mechanism and how it is used. For example, on-line access to Superfund databases has the potential to reach a large (although perhaps not representative) number of people with summary data on listed sites, while public education campaigns may reach a targeted (and more representative) audience with in-depth information. In contrast, few, if any, members of the public can be expected to monitor the *Federal Register* for public notices except those who are paid to do so. Similarly, the type and quality of government information provided to citizens will determine its impact on trust.

Public hearings

Public hearings remain the most common form of face-to-face public involvement in spite of nearly universal criticism of their ability to provide meaningful participation. EPA convenes hundreds of hearings per year (Fiorino, 1990, p. 230). Most are used to defend agency decisions rather than to involve the public in the decision-making process itself.

Agencies often hold hearings late in the process, present technical information beyond the understanding of the lay public, and seek to do little more than fulfill administrative requirements (Fiorino, 1990, p. 230).

Although information flows in a public hearing are nominally two-way, they are generally not deliberative. The two-way flow of information would suggest that public hearings ought to be able to achieve the first four goals: increasing public knowledge (Goal 1), providing decision-makers with public values, assumptions, and preferences (Goal 2), providing substantive information to improve decisions (Goal 3), and, to the extent that hearings increase transparency, increase trust in institutions (Goal 4). However, the lack of real deliberation might lead one to predict *a priori* that most public hearings will do a poor job of achieving these goals. Hearings might best be thought of as active forms of notice and comment procedures, with the government contributing summary information and the public responding with comments for the record (ELI, 1991).

The outlook for trust formation is particularly bleak. Public hearings include all of the active and concerned public who choose to attend, but the non-binding nature of public input militates against trust formation. Moreover, a number of studies have determined that the majority of those who choose to attend hearings actually represent organized interests with significant economic stakes in the outcome (Fiorino, 1990, p. 231). This latter point also suggests that the educational value of public hearings will be limited, except insofar as they educate the government about the political array of forces on an issue.

Because they offer an opportunity for government and the active public to interact, public hearings ought to be expected to reduce conflict (Goal 5). However, the process is not deliberative; it may encourage participants to take more extreme positions, and the opportunities for conflict reduction are likely to be limited.

Citizen advisory committees

Citizen advisory committees (CACs) encompass a wide variety of groups that represent "a relatively small group of citizens who are called together to represent ideas and attitudes of various groups and/or communities" (Rosener, 1978, p. 188). They should be distinguished from expert advisory committees which agencies use extensively to bring outside scientific, economic, and other technical information into government decision-making processes (Jasanoff, 1990). The Fort Ord RAB provides an example of a citizen advisory committee, but the form and function of CACs vary widely. Federally endorsed committees established under the Federal Advisory Committee Act follow strict requirements regarding representation, transparency, and government involvement. CACs may also be quite informal, including groups which were established without government involvement but that have come to represent public views in policy making. For example, the Anaconda-Deer Lodge Advisory Committee was formed by community leaders and residents to represent the community's interests in the Anaconda, Montana Superfund site clean-up process (WMREI, 1991). CACs are used to advise numerous aspects of environmental policy including rulemaking, standard setting, permitting, and planning.

Advisory committee members are intended to serve as the voice of the larger public, although in practice this has been interpreted to include elected officials and other elites as well as "typical" members of the community.[12] Even in the latter case, a number of studies have shown that participants are often not representative of the wider community in terms of income and education (Lynn and Kartez, 1997). CACs often present members with the opportunity to engage in discussions with a number of other interests, either internally in committees with "balanced representation" or externally with other organized interest groups. They typically play only an advisory role, but ideally their input is explicitly incorporated into the decision-making process. Where committees are balanced, the CAC can act like a voluntary negotiating body where each participant represents broad constituent interests (Lynn and Kartez, 1997). The stakeholder groups established under EPA's Project XL program are an example (NAPA, 1997, pp. 75-106). In such cases, consensus agreements may carry considerable weight in forming the basis for government decision-making.

The deliberative and representative nature of advisory committees suggests that they ought to achieve the first four goals: increasing public knowledge (Goal 1), providing decision-makers with public values, assumptions, and preferences (Goal 2), providing substantive information to improve decisions (Goal 3), and, increasing trust in institutions (Goal 4). To the extent that the committees are "balanced" they ought to provide opportunities for conflict reduction (Goal 5) between the stakeholders represented. Balance may also make it more likely that recommendations will be acted on. If this is the case, trust formation gets an additional boost.

Alternative dispute resolution mechanisms

The two primary alternative dispute resolution mechanisms in environmental decision making are regulatory negotiations and stakeholder mediations. Regulatory negotiations provide a formal process for stakeholders to negotiate the content of federal regulations. Stakeholder mediation describes a far more diverse, and often non-governmental, set of approaches for bringing together opposing interests to settle divisive issues. Some of the most successful mediations have been over resource issues in the western United States. For example, a grass roots effort to seek consensus on water management issues in Montana's Clark Fork River Basin brought miners, ranchers, municipal officials, and environmentalists together after decades of acrimonious conflict to successfully resolve disputes over water use (NAPA, 1997, pp. 107-126).

Regulatory negotiations and stakeholder mediations offer substantial opportunity for two-way deliberations among a variety of opposing interests. Their explicit purpose is to reduce conflict and reach consensus, often in cases where other forms of agreement or dispute settlement have failed. If parties reach a decision, they are generally bound by it. In fact, this

[12] Organizers of CACs, such as agency officials, often have considerable power in picking committee members (Lynn and Kartez, 1997). For the variety this discretion fosters, see Perhac (1997) on public involvement in comparative risk assessments.

may be a critical aspect of successful negotiations or mediations (Bingham, 1986). Participants--particularly those representing the public interest--are often professional representatives rather than members of the lay public. One of the principal criticisms of regulatory negotiations, in particular, is that they only involve the "usual suspects" of lobbyists, NGOs, and government officials (Applegate, 1997).

The deliberative nature of alternative dispute resolution mechanisms would suggest that they would be likely to achieve the first four goals. However, to the extent that participants are "the usual suspects," this limits opportunities for public education. In spite of this trait, the mechanisms are still likely to be excellent fora for providing decision-makers with public values, assumptions, and preferences (Goal 2) and substantive information to improve decisions (Goal 3). The binding nature of many agreements would suggest opportunities for trust formation (Goal 4), however, the "usual suspects" issue once again may be a roadblock to achieving this goal. The explicit attention to consensus building and conflict resolution among a wide range of stakeholders suggests that negotiations and mediations provide ample opportunities to reduce conflict among stakeholders (Goal 5).

Citizen deliberations

Mechanisms for citizen deliberation include citizen juries (or the related "citizen panels") and consensus conferences. Many of the examples of these mechanisms in the U.S. have been non-governmental experiments in participatory policy analysis on complex issues such as education policy, energy planning, and public spending priorities. Some states have used these mechanisms to inform decisions about risk prioritization, water quality planning, and sludge disposal (Jefferson Center, 1997; Crosby et al., 1986; Renn et al., 1991). Although the format varies across different mechanisms, their purpose is to help non-expert citizens, acting as "value consultants," analyze technically complex subjects. Organizers provide a group of selected citizens with access to expert information and sufficient time to engage in deliberative analysis with experts and among themselves. They are expected to combine the technical facts with public values into a set of conclusions and recommendations.

These mechanisms are explicitly designed to allow two-way communication between experts and the public, and sometimes government. However, experts and the government are mainly information resources, and most of the actual deliberation takes place among the citizen members of the group. Participants are not interest group representatives although they are regarded as representative of the public. In some citizen juries, they may even be selected through random sampling (Fiorino, 1990, p. 235). All of these factors would suggest that deliberative fora ought to be particularly good at educating participants (Goal 1), providing decision-makers with public values, assumptions, and preferences (Goal 2), and generating substantive information to improve decisions (Goal 3). In the past, many of these mechanisms have had public or media outreach programs which extend educational opportunities beyond those who actually participate.

The mechanisms involve a limited number of opportunities for interaction between interest groups (other than the extent to which participants identify themselves with various

groups in their daily lives). Opportunities to reduce conflict (Goal 5) are therefore minimal. Trust formation (Goal 3) is also unlikely as the results of the efforts are purely advisory, and many have had no formal tie to government decision making processes.

Discussion

An examination of the characteristics of various public participation mechanisms allows us to come to tentative conclusions about what goals they should achieve (see Table 2). These are useful for the practitioner in knowing which mechanism to pick. They are also useful for the evaluator in knowing what goals to use in evaluation, as well as allowing an analysis of whether the right mechanism was chosen.

The discussion provides new insights on the Fort Ord case. One of the issues following review of the RAB was what type of alternative forms of public participation at Fort Ord would be considered legitimate. Some felt that the Army's decision to seek other forms of public input beyond the advisory committee was an end-run around legitimate opposition and the subversion of a democratic form of decision-making. The above discussion casts this debate in a different light. Changing the forum for public involvement from the RAB to another type of mechanism could be viewed, not as a violation of some model of democracy, but as a narrowing of the goals which can be achieved. If, for example, the Army chooses to use surveys or focus groups to solicit public opinion, opportunities for educating the public, building trust, and reducing conflict recede. If they try a mediated solution, it may resolve conflict but the problems of education and trust remain. If they use a public hearing format, all of the same goals apply, but the likelihood of achieving them is reduced. On a more positive note, the analysis can suggest more effective participation strategies. Perhaps the Army could combine a public education campaign with a well-publicized citizens' jury and accomplish many of the same goals that the RAB might ideally achieve.

The analysis generates a few additional observations. As mentioned previously, in spite of the importance of rebuilding trust, no mechanism is ideal for it. According to Schneider, et al. (1997) and Slovic (1993), the ideal mechanism would be one which provided individual citizens with binding decision-making authority. It is quite unlikely, and often illegal, for government to cede this authority to citizens except through voting. The only possible mechanisms to meet this goal may be the direct democratic processes of referendum, initiative, and recall. However, these are born of a profound mistrust of government and are not processes which government can explicitly utilize in decision-making. Suffice to say that building trust through public participation may be a daunting task and that research on the topic is that much more important.

Equally disheartening is that mechanisms that stand a good chance of achieving many of their goals are far less frequently used than those which could be predicted to fail. Between 1980 and 1996, EPA completed only 12 regulatory negotiations (Coglianese, 1997). Combined, the number of citizen juries and consensus conferences undertaken in the U.S. on environmental issues is even less. In Executive Order 12838, President Clinton called for the elimination of at least one-third of all federal advisory committees not required by Congress

(GSA, 1996). In contrast, EPA holds hundreds of public hearings a year, and public notices in the *Federal Register* are still the most frequent method of providing public information. Legal requirements, habit, uncertainty, and cost certainly play roles in this pattern. A bit more investment in different forms of public participation, however, may increase the benefits dramatically. The apparent increase in local mediations in communities around the country and the use of citizen advisory committees at federal facility Superfund sites (the Fort Ord case notwithstanding) are a positive sign (Bernard and Young, 1996; FFER, 1996).

4. CONCLUSION

This paper should make clear that public participation and its evaluation are complex phenomena. Participation is expected to play multiple roles in environmental policy, including solving the ills of a conflictive regulatory system, restoring democracy, and empowering particular parties to a decision. Even when we realize that there are various useful and legitimate mechanisms for involving the public, we find that some very important goals--such as rebuilding trust--are very difficult to achieve.

Through tailored evaluations of participatory programs' ability to achieve six social goals, the framework presented in this paper can (1) identify the strengths and weaknesses of a number of different mechanisms available for involving the public, (2) be "objective" in the sense of not explicitly taking the perspective of any one party to a particular decision, and (3) measure--to the extent feasible--tangible outcomes from participation.

These tangible outcomes (i.e., the social goals) are:

- educating the public;
- incorporating public values, assumptions, and preferences into decision making;
- increasing the substantive quality of decisions
- fostering trust in institutions;
- reducing conflict; and
- achieving cost-effectiveness.

The discussion of alternative frameworks pointed out their weaknesses in accomplishing what this paper set out to do. However, we maintained that those approaches may be entirely appropriate for a different set of questions and constraints. Notable among these would be cases where equity considerations make it clear that a particular group should have its interests met. The paper suggested that, although process evaluations may be of limited use, attention to process is clearly important for examining why social goals were, or were not, met.

There are a number of areas which would benefit from further research. The first was suggested in the discussion of process evaluations. An "impact model" which describes how an intervention (the participatory process) affects an outcome (the social goals) does not exist in the literature. Further research on how various procedural factors affect the outcomes of interest will be important for designing and evaluating participatory programs in the future.

The second research need was suggested in Section 3. Many of the relationships between the characteristics of various mechanisms and the goals which they might accomplish are merely hypothesized. Further research could address whether, for example, bringing more stakeholders to a decision actually does lead to more opportunities for conflict resolution. The posited relationships between representation and education or the public's decisional role and trust should also be analyzed. Finally, further research should address how the analysis of mechanisms and goals changes when dealing with different environmental issues. How does participation in a controversial facility siting decision differ from that of a relatively non-controversial comparative risk assessment? What goals are important? Which mechanisms are more effective? A starting point for addressing all of these research needs would be the application of the evaluative framework described here to multiple case studies where different participatory mechanisms were used to address a variety of environmental issues. Not only would such a study pay attention to whether social goals were achieved, but would examine what procedural factors (early involvement, face-to-face discussions, etc.), structural factors (information flows, representativeness, etc.), and contextual factors (type of environmental issue, technical complexity, etc.) influenced goal achievement.

The evaluative framework we propose here provides a starting point for this larger research effort and should prove useful in evaluating a number of different types of public participation programs. The strength of the framework is its utility for answering the question "What is society getting from efforts to involve the public?" In so doing, the outcome-oriented framework may allow us to get beyond seeking ways to simply increase public involvement, and help us tackle unanswered questions of when, how, and why it should be used.

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