

**Under Which Conditions Does Public Participation
Really Advance Sustainability Goals?
Findings of a Meta-Analysis of Stakeholder Involvement
in Environmental Decision-making**

Paper prepared for the conference

‘Earth System Governance: Theories and Strategies for Sustainability’

2007 Amsterdam Conference on the Human Dimensions
of Global Environmental Change

Vrije Universiteit Amsterdam, 24 - 26 May 2007

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1. Public participation and sustainability – a paradox?

Environmental governance on both sides of the Atlantic increasingly relies on the participation of non-state actors such as citizens and organized interest groups. Prompted by the U.S. Negotiated Rulemaking Act of 1990 and the Rio Declaration of 1992, which demands in principle 10 that “environmental issues are best handled with the participation of all concerned citizens”, followed by the Århus Convention of 1998, four recent European Union directives¹ have legally institutionalized access to information and public participation in environmental decisions.

Among the motives and rationales for public participation, which have traditionally centered around emancipatory and legitimacy aspects, it is now an increased *effectiveness of governance* that is being discussed – and aimed at (Heinelt 2002; Beierle and Cayford 2002; Newig 2005; Koontz and Thomas 2006). In the face of continuing implementation deficits of environmental policy (Knill and Lenschow 2000) and increasingly complex societal structures, participatory decision modes that are suited to foster collective learning are indeed regarded as a prerequisite for the advancement of sustainable policies (Dryzek 1997). Focusing on substantive outcomes rather than on fairness or other aspects, participation thus becomes a means to achieve environmental goals in a more targeted, swift and effective way (Bulkeley and Mol 2003). Symptomatic is the claim of the guidance document on public participation relative to the EC Water Framework Directive that “public participation is not an end in itself but a tool to achieve the environmental objectives of the Water Framework Directive” (EU 2002: 6).

Specifically, participatory governance relies on the expectation that participation improves the ‘quality’ of decisions by incorporating the knowledge of local actors (Steele 2001; Pellizzoni 2003; Yearley et al. 2003). Moreover, it is expected that the involvement of non-state actors leads to a higher acceptance of decisions and thus improves implementation and compliance (Thomas 1995). Both mechanisms are assumed to ultimately lead to better environmental outcomes as opposed to more hierarchical modes of steering (Newig forthcoming).

However, this ‘instrumental claim’ has not remained undisputed. Scholars have pointed out multiple dangers and trade-offs which Dahl (Dahl 1994) has termed a ‘democratic dilemma’ between effectiveness and participation. From a rational choice perspective, the collective use of resources regularly implies social dilemma situations (Hardin 1968), which call for institutional arrangements on scales large enough to internalize the negative externalities. Participatory decision-making, however, is typically located on local or regional scales, and, contrary to sustainability goals, the interests of local actors tend to focus on shorter time horizons.

Who is ‘right’ – those who purport that participation supports environmentally favorable decisions, or those who claim the opposite? The crucial question becomes whether this claim – that participatory modes of implementation actually improve substantive policy outcomes – actually holds. Or, more specifically, to what extent and under what circumstances it holds. Even if one does not embrace the notion of participation as the “new tyranny” (Cooke and Kothari 2001), “there is something of a dilemma if participation turns out, empirically, not to improve outcomes” (Lee and Abbot 2003: 87-8).

Although the whole field of participation research has now reached a welcome degree of differentiation and variety, the issue of the ecological outcomes of participatory governance has received surprisingly little attention (Beierle and Cayford 2002; Koontz and Thomas 2006).

¹ These are the Water Framework Directive (2000/60/EC), the Strategic Environmental Assessment Directive (2001/42/EC), the new Environmental Information Directive (RL 2003/4/EC) and the Public Participation Directive (2003/35/EC).

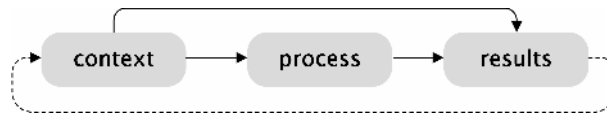
Accordingly, the empirical basis is still weak and, above all, fragmented (see Diduck and Sinclair 2002; Beierle and Cayford 2002). To our knowledge, there is not a single study in English or German that systematically addresses this question. Moreover, systematic conceptualisations of relevant causal mechanisms are also lacking. Although a considerable body of empirical and theoretical knowledge exists, this lies scattered throughout a large number of single (case) studies, most of which – if at all – only touch upon aspects of outcome effectiveness; the underlying mechanisms are often only implicitly assumed. Thus, Beierle and Cayford in their seminal study on public participation demand that

”[...] more research on implementation is needed. The value of public participation will ultimately be judged by its ability to enhance implementation and show demonstrable benefits for environmental quality. Understanding the links between participation and actions on the ground is a high priority. Research should focus on the specific links between public participation and the political, legal, and social forces that drive implementation forward“ (Beierle and Cayford 2002: 76).

The aim of this paper is to conceptualise the instrumental claim on the basis of a causal model and to present the preliminary results of an empirical test. We will proceed as follows: In section 2, the existing knowledge on mechanisms is integrated into a causal model containing hypotheses as to why and how and which participatory processes (are expected to) lead to better implementation of decisions and better environmental outcomes. This is to serve as a conceptual framework for further qualitative and semi-quantitative analysis. Section 3 presents the initial results of a comprehensive meta-analysis of existing case studies. The final section is devoted to our conclusions.

2. Conceptual framework: How participation can improve regulation

If we are to understand whether and how public participation enhances the *output* legitimacy of decisions in terms of the effectiveness of policy implementation, we need hypotheses on causal mechanisms against which we can compare empirical findings. This section attempts to integrate existing hypotheses and causal assumptions from the literature on public participation and on policy implementation in a generic model²:



Its general structure is based on the assumption that the substantive outcomes of a decision depend on the type of decision process (and how it is carried out) which, in turn, happens within, and is influenced by, the societal context. Ultimately, the substantive outcomes of a decision process – changes in environmental quality but also in the social system – feed back to the context. Thus, the outcomes of one process may affect the context of future decisions.

² A more complete version of this model is outlined in Newig submitted.

2.1 Concepts and terminology

Naturally, the ‘instrumental claim’ only applies to a subset of all possible and existing forms of public engagement. We exclude all those forms of civic engagement that do not aim at collective decisions, such as Agenda 21 processes, as well as participation in votes or plebiscites (which are democratic routine mechanisms). Moreover, the analysis shall be restricted to those forms of public participation that are situated at a sufficiently regional or local level such that non-organised citizens still have a fair opportunity to participate (cases that are comparable to public participation envisaged by the EU). Public participation thus ranges from public consultation by competent authorities to cooperative decision-making, including different forms such as public hearings, consensus conferences, regional forums, councils, citizens’ juries or stakeholder platforms, to name but a few (see Rowe and Frewer 2005).

With its focus on effective policy implementation, the conceptual stance of our model follows the traditional heuristics of implementation research in the sense of policy design – implementation – impact, as has been known since the 1970s (see, e.g. Pressman and Wildavsky 1984) and thus ultimately follows a top-down approach (Hill and Hupe 2002). This may be surprising at first sight, since participation research focuses precisely on those forms of decision-making that differ from the traditional authoritative mode. However, given that *effective policy implementation* constitutes the goal and the yardstick for (successful) participatory processes, the direction of the analysis can only be from the decision of a state authority (which may or may not involve non-state actors) to the implementation and compliance by the legal addressees.

Public participation can have a twofold impact on effective policy delivery. The first is that it influences the decision itself (otherwise it would not be participation). By incorporating environmental values, participation can lead to environmentally ‘better’ decisions (section 2.2). The second is that participation can lead to a more complete implementation of decisions (section 2.3). Furthermore, we will also touch upon the influence of the process characteristics and of the societal and environmental context in which a decision process is situated (sections 2.4 and 2.5).

2.2 Mechanisms I:

‘Better’ decisions through participation?

It is claimed that participation enhances the quality of decisions. The main mechanism that can be assumed is that, in the course of the participatory process, information is generated or made available that would not have been so otherwise, and that, further, the decision profits from this information, i.e. the information is actually incorporated into the decision. Thus, it seems plausible that environmental decisions can profit from the factual knowledge of actors involved about their (local) conditions (López Cerezo and González García 1996; Pellizzoni 2003), assuming that those who are closest to a problem develop the best understanding of it (Steele 2001). Other authors, however, contest this claim and hold that it is rather the authorities who have different and usually more reliable means of information provision at their disposal, especially regarding highly technical issues and the corresponding need for specialised expert knowledge (Munnichs 2004).

Then again, there may be information that ‘emerges’ from the close interaction of actors in a group process. Many authors stress the positive effects of social learning, the plurality of perspectives and thus the more creative decision-making as characteristics of participatory decision-making (Doak 1998). Yet group processes also have the potential to create adverse effects. For instance, Cooke 2001 points out problematic findings from social psychology re-

garding consensus-oriented group processes, such as the tendency towards taking risky decisions or an immunisation towards independent and critical arguments. Which of these mechanisms prevails in a given context seems to be unclear at present.

Another type of information from which decisions could profit is information regarding the extent to which planned measures will be accepted by the addressees. In this respect, participation becomes an “instrument for the anticipation of resistance to planning and implementation” (Linder and Vatter 1996, 181).

2.3 Mechanisms II:

Better implementation through participation?

Generally, participation is expected to prevent implementation problems from occurring (Bulkeley and Mol 2003). Quite plausibly, the addressees of a decision must know of it in order to be able to implement it – obey rules, comply with requirements. If future addressees are involved in decision-making, they can be assumed to be thoroughly informed about these decisions, and a higher rate of compliance can reasonably be expected, as the possibly necessary measures of reorganisation and adaptation to new (regulatory) conditions, which usually take some time, can duly be taken. Furthermore, compliance with a decision is expected to depend positively on the degree of acceptance, or even identification, on the part of the addressees (see, e.g. Webler and Renn 1995).

Acceptance may, firstly, be supported by providing the interested actors with early and comprehensive information. This may prevent actors from feeling left out or ignored and create a sense of involvement and belonging. Moreover, an intensive involvement of the concerned actors in a decision process that is perceived as fair and based on mutual communication is expected to enhance the acceptance of the decision. This even holds when the result does not correspond to the actors’ expectations (Creighton 1981), as procedural justice research has found that the acceptance of a decision crucially depends on aspects of fairness of the decision procedure (Lind and Tyler 1988). Furthermore, a decision that involves conflicting interests is more likely to be accepted by the different parties if it is based on either a consensus or at least a compromise to which most of the parties agree. This in turn most likely requires an intensive participatory process that allows the concerned actors to effectively claim their stakes, but also a spectrum of interests that does not fundamentally rule out any consensual solutions.

Furthermore, in the medium and long term, the building of trust relationships both among the non-state actors involved and between non-state and state actors through participation (Bulkeley and Mol 2003) can lead to an increased regional collective social capital and can thus influence the context of future decision processes. In particular, the building of trust can improve acceptance of and thus the willingness to comply with measures, as empirical studies in other contexts have shown (Murphy 2004).

2.4 Mechanisms III:

Importance of process design and characteristics

The choice of the process type and design basically determines whether, for instance, a mere road show, a public hearing, or a forum with large possibilities for public involvement (such as a citizens’ jury) is to be carried out and thus largely influences both actual participation and intervention of non-state actors as well as the mutual information flows (Rowe and Frewer 2005). Moreover, the process design plays an important part in securing the fairness of the

procedure, as measured, e.g. by a fair representation of all concerned actors or equal opportunities for all participants to voice their concerns (Webler 1995). ‘Success criteria’ that are frequently mentioned in the literature include the transparency of the process, open communication, early involvement, joint determination of process rules and the impartiality of the moderation. A basic premise for all the aforementioned criteria is, of course, that there is sufficient openness regarding the decision to be made. If, on the other hand, the participants get the impression that decisions have already been taken (‘foregone conclusions’), then the motivation to participate and, ultimately, acceptance of the decision, is expected to remain rather poor (Diduck and Sinclair 2002).

2.5 Mechanisms IV: Importance of the context

Research has been suggesting that the context of environmental decision processes plays a decisive role for both the output and the substantive outcomes. Some key factors (others are possible) are mentioned in the following.

Naturally, a participatory process can only be legitimate and successful as to its outcomes if those non-state actors who have a stake in the issue actually participate. The tendency to participate – and thus to invest time and other resources – is primarily a function of the degree to which an actor perceives a problem to touch his own interests, combined with the perceived chances to influence the output of the decision process and to expect a clear benefit from it. However, a lack of participation does not necessarily imply disinterest: rather, actors may feel that their interests and concerns are already sufficiently represented in the process (Diduck and Sinclair 2002). On the other hand, the non-participation of certain groups can also reflect their estimation to better achieve their interests outside of state-run participatory processes, such as Whelan and Lyons 2005 have shown for environmental activists.

The results of participatory decision-making also crucially depend on the interests and concerns of the actors involved. This implies that if the majority of the participants favour a less ‘environmental’ decision, the decision is likely to be shaped in this way. Even financial compensation and a fair decision process may not, in severe cases, lead to a decision being accepted by those immediately concerned.

The extent to which a decision is shaped by particular actors depends of course on their power position, i.e. their resources (Lee and Abbot 2003). Moreover, a higher degree of participation is more likely with dominant, influential and financially strong actors and those with a high degree of other resources, including individual social capital. Processes with strong power asymmetries among the participants may therefore risk suppressing the interests of weaker actors more than would be the case in an authoritative decision (see, e.g. Hilp 2003).

Finally, the structure of a problem can have a decisive influence on the success of a participatory decision process. While a complex and intricate issue may be difficult to comprehend for some actors and increase asymmetrical information (Kartez and Bowman 1993; Diduck and Sinclair 2002), a decision process involving open deliberation can open up possibilities for win-win situations and more creative, and ultimately more effective, solutions. Moreover, the design and potential ‘success’ of a participatory decision process is most likely to crucially depend on the existence of possible solutions – be they of a technical, organisational or legal nature, including the financial and other costs involved in their realisation. If these do not exist, a consensual conflict resolution in the case of conflicting interests will hardly be achievable.

3. Preliminary results of the secondary case study analysis

In this chapter, we present preliminary results of an ongoing empirical analysis. The aim is to put the approaches discussed above to an empirical test. Facing the alternative of conducting our own case studies or of drawing on the extensive set of studies that already exists in the literature, we chose the second option for a comprehensive meta-analysis. For in spite of many commonalities, there is a wide range of differences in both context settings and ways of involving citizens in participatory decision-making. Consequently, we believe that only the analysis of a large number of cases will give us a reliable insight into the factors determining outcome effectiveness and into the interdependencies between different factors. Attaining such a large number of cases is far easier when drawing on existing case studies, which have not yet been systematically analysed and compared.

3.1 Methodology and case studies

Methodologically, we rely on qualitative and quantitative instruments of case study meta-analysis (Lucas 1974; Larsson 1993). By way of a comprehensive literature review, we identified more than 200 in-depth case studies of deliberative governance focussing on environmental decision-making that have been conducted over the past 20 years in Northern America and Europe. A subset of 120 studies forms the final case study pool, while the remaining case studies will be selectively consulted for specific factors of interest.

The case study pool is characterised by a predominance of public participation processes conducted in the United States, making up almost 60 percent of all case studies. This reflects the popularity of public participation approaches, mediation and negotiated rule-making in US environmental politics over the last 30 years. The remaining cases describe environmental deliberations in EU member states. The smaller number of public participation events in the EU can be explained by a less 'experimental' public administration and a more rigid application of constitutional laws and decision-making rules. Due to its recency only a fistful of cases analysed in this paper have really been motivated by current EU regulation on public participation. As a consequence, we primarily analysed decisions made in the EU before the 'participatory turn' as well in the US and argue by way of analogy.

For the purpose of this paper, we selected and analysed 47 cases chosen from the case study pool that reflect the plurality and multi-facetedness of participatory environmental governance. The cases represent various geographic regions and political scales and different fields of environmental policy, e.g. waste policy, energy policy, water policy, or natural resource management. Furthermore, the cases comprise varying intensities of participation, duration and problem complexity. For an overview, see the Annex at the end of this paper.

Due to space constraints, we do not intend to present and discuss these cases in detail. Rather, drawing on a detailed analysis of these 47 cases, we attempt to ascertain the extent to which public participation in environmental decision-making brings about ecologically valuable policy outputs, enhances policy implementation and, consequently, increases the ecological outcome.

For the purpose of this paper, we found it useful to differentiate between three types of situations in which public participation was applied. As citizen deliberation can always be mirrored against a hypothetic top-down process (non-participatory regulation), we suggest to differentiate between public deliberations with a) policy-setting, b) policy implementation and c) conflict resolution characteristics. We argue that these three types of public participation are

set in quite different policy contexts with implications for the involved actors, the problem to be discussed and the conflict to be dealt with.

Public participation in a *policy-setting* context is about finding out the general direction of the policy. As a consequence, there is disagreement about the actual problem and whether there is need to take action. Public participation exercises defined as policy-setting may also be pursued by administrative bodies. The classification is not about leading actors or policy levels involved, but about the logic of the process: Policy-setting public participation means open-process decision-making without pre-defined substantial goals or limits. This may include the development of a management plan for a natural resource by a state agency (below the legislative level) as long as the management process itself is not guided by pre-defined goals, but pursued in order to develop those goals in the light of public interest. These processes more often than not take place at the regional or local level.

Public participation in a *policy-implementation* context means the involvement of civil society actors or business interests during the implementation of a political decision ‘on the ground’. The primary decision on what the problem is about and what the general goal is, has already been made by a superior legislative body. Yet, there is a desire to involve the public in order to communicate agency actions as well as to find out how to apply the rule in a particular political and social context and how to best attain the given goal.

While it is a general rationale of public participation to reduce litigation, there are certain cases, termed mediation, which are of a genuine juridical character in the sense that public participation replaces a law suit as the traditional top-down procedure for such conflicts. These include, on the one hand, conflicts between multiple state actors and civil society actors with controversial jurisdictions and accountabilities or conflicts between several civil society actors on the other. As the goal of mediations is the resolution of conflicts among stakeholders, the predominant logic in those processes is not concerned with the public interest. Nevertheless, we can analyse the cases regarding their differential environmental outputs and outcomes.

3.2 Implementation quality

In the previous chapter we introduced several accounts of why deliberative policy-making is expected to enhance implementation. Our analysis confirmed the widely held view that public participation improves the implementation of policy measures. In 24 out of 47 cases, the final agreement has been implemented more completely and swifter as compared to top-down approaches, whereas 13 cases report a lower implementation effectiveness.

<i>Implementation quality:</i>	<i>Higher</i>	<i>No difference</i>	<i>Lower</i>	<i>No information</i>
Policy-setting cases	10	4	6	1
Policy implementation cases	3	1	5	2
Conflict resolution cases	11	1	2	1
Total	24	6	13	4

Looking into these cases, we find that improving acceptance does in fact increase compliance and, as a result, implementation. Although we do not want to rule out the procedural justice

hypothesis, the case studies suggested that a general satisfaction with the substance of the agreement forms the basis that explains compliance.

The 301(h) case, one of the cases in which participation did not enhance implementation, highlights the importance of the substantial agreement of all parties to the final decision in order to avoid litigation. This federal law regulated the discharge of wastewater into the sea and was regarded as a highly demanding piece of rulemaking from an environmentalist point of view. Yet shortly after Congress passed the law, US EPA was directed to renegotiate the law with selected stakeholders from public agencies at the state level and with business interests who opposed the law as being too strict and costly. Environmental NGOs were invited to join in the talks but refused to participate, as they rightfully expected that the negotiation would simply water down Congress' version of the law. After the agreement was settled, they chose to file suit. While they were unsuccessful in re-installing Congress' version of the law, the court ordered a compromise that, in most respects, was closer to the original law than to the negotiated agreement (Burgess et al. 1983).

The conflict resolution cases provide a further reason why public participation increases implementation effectiveness by reducing litigation. One third of the conflict resolution cases, all of them in the US, report legally binding pre-negotiation agreements that specifically prohibit post-negotiation law suits against the agreements to be made. While this theoretically does not rule out legal actions by non-participating third parties, in practice these self-commitments turned out to be very effective.

The implementation of policy decisions made prior to the involvement process looks considerably worse than the policy-setting or conflict resolution cases. Five out of nine cases report a weaker implementation or even non-implementation (failed process). The main reason seems to be that opponents of the overall goal shy away from participating at all and rely on the legal process to stop the project.

3.3 Output quality

Referring to output quality, many authors have argued that extending the knowledge base as well as social learning processes and discursive communication will have a positive impact, yet they have failed to substantiate the claim. According to our research, this position does not necessarily prove correct. More specifically, it appears to be very much dependent on the particular definition of 'quality'. As long as quality criteria are that the decision is, on the one hand, based on a broad and well-balanced set of facts and values and, on the other, is the product of a truly critical discourse, we will not dispute this claim.

However, the picture looks different if we define 'quality' by the decision's substantive content. As we have argued above, current EU regulation expects an improvement of environmental output quality, i.e. expects these policy decisions to be more ecologically beneficial than classic modes of regulation. Based on our preliminary analysis of 47 cases, this expectation is not justified. Instead, we find that policy makers tend to face a loss of ecological quality when establishing participatory modes of governance. 18 out of 47 case studies report a lower ecological quality of decision, and authors of 13 case studies identify no change in quality. Only ten case studies provide evidence that deliberative regulation increases policy-goal attainment.

The inclusion or exclusion of actors, their ideological background and preferences appear to be the most influential factors on the output of participatory regulation in environmental politics. In contrast, both procedural features such as transparency or fairness and contextual variables such as problem complexity or public attention only show a limited impact. According

to the case studies, conservationists were rarely discriminated against to a significant extent. They often had a say in the matter, but this does not necessarily mean that their opinions were listened to. Rather, environmentalist positions in public participation cannot claim to represent majority positions but instead have to compete with social and economic actors.

<i>Output quality:</i>	<i>Higher</i>	<i>No difference</i>	<i>Lower</i>	<i>No information</i>
Policy-setting cases	6	5	8	2
Policy implementation cases	1	6	1	3
Conflict resolution cases	3	2	9	1
Total	10	13	18	6

This is important in two respects: On the one hand, deliberation in public participation decisions involves finding a compromise between different positions rather than convincing each other that a particular position is better or more morally justified than another. As a consequence, ‘good green arguments’ often do not predominate in public deliberations but are just one position being discussed around the table. On the other hand, only very few decisions are on purely ecological issues. The overwhelming majority of cases also had social and economic dimensions in addition to the ecological aspect, whereby the term ‘social’ could comprise a large number of conflictive issues such as racial-ethnic questions, cultural divides and socio-political issues of interest. The consequence is that the options available to reach a decision did indeed have an ecological impact, but the decisions were not made on purely ecological grounds. That is, environmentalist positions have to compromise with competing world views preventing high standards of environmental quality.

In particular, this is observable when environmental agencies, such as the US EPA, initiated ‘policy-setting’ public participation processes. Their ambitious ecological approach is regularly watered down by participants who neither share the agency’s environmental awareness nor the will for rigorous implementation of ecological measures. The study on the 301(h) law discussed above is a case in point. The EPA defends a high-end ecological position but has to compromise with business interests or competing public agencies, whereby the participatory process was not designed for increasing the ecological quality of the rule. Rather, the overall motive of the public participation process was to water down the governmental federal rule and the only key question was to what extent non-state actors would succeed in doing so (Burgess et al. 1983). A similar observation can be made in environmental mediations that seem to be initiated as replacements of litigation. The overall logic of the decision-making process here is not to reach a high-quality policy goal, but to resolve a socio-political conflict. As a consequence, compromising is the road to success although, from an environmentalist perspective, lawsuits (as usual top-down way) are more promising for better outputs.

This line of reasoning cannot, of course, be applied to public participation exercises which we characterised as policy-implementing in the sense that a decision has already been made. As the policy goals are already fixed to a large extent, they are not up to deliberation anymore and cannot be watered down. Public involvement is expected to support the local implementation of decisions by providing local knowledge. However, in only one of eleven public participation processes in a policy-implementation setting, an improvement of policy can be observed. As outlined in the previous chapter, a high number of processes fail due to the fact that participants either want to decide on more than locally relevant details or oppose the pre-defined goals from the outset. The analysis reveals that involvement is considered far less

relevant to potential participants: While in the view of supporters of a pre-defined decision there is no need to get involved as their interests are well represented, opponents shy away from participating as they cannot change the direction anymore. While this is up to future case study-based research, we hypothesise that a pre-defined goal might be a serious obstacle for improving agency decisions through public participation.

Admittedly, only one of the policy-implementing cases report a worse policy output. More than half of the cases discuss neither improvements nor changes to the worse. That is, the output does not seem to be affected at all. While several deliberative processes are widely regarded as purely environmental decisions, we observed that the political issue under discussion indeed has ecological consequences, but the options themselves are equal with regard to their environmental impact. Many such cases describe siting decisions, i.e. public involvement processes in which unpopular major projects such as power plants, toxic waste sites or industrial areas are discussed. In such situations citizens often debate on compensation, job programmes or social benefits rather than the aspect of 'where' (do we prefer location a, b or c?) or even 'whether at all'. While the latter questions have an ecological dimension, the former definitely do not. As a consequence, the decisions were instead made on social or economic grounds. This makes it difficult to assess whether the expectations of environmental improvements put forward by advocates of public participation are justified. After all, this dilemma would even occur in a classic top-down process with equally indifferent options.

3.4 Consequences: Environmental Outcomes

While the insights of implementation research and administrative studies have shown that traditional environmental policy was doomed to failure because of compliance deficits and a lack of implementation, only few would claim that the policy output itself was inappropriate in respect to the performance objective. Implementation failed due to the resistance of societal actors who refused political compliance or reacted by way of litigation. As a result, when the outcome of a political decision is a product of output quality and implementation effectiveness, top-down approaches failed due to the implementation factor.

Following on from our above claim, we argue that environmental participatory governance only conditionally promises a way out. Such modes of governance might significantly enhance implementation, yet face limitations regarding the ecological quality of the policy output. Assuming that output quality and implementation effectiveness determine outcome effectiveness, we argue that participatory decision-making fails with regard to the 'output'.

Our preliminary findings suggest that there is a trade-off between environmental output quality and policy implementation: One gains one thing but loses the other – the claim of a tension between democracy (participation) and effectiveness so often discussed in public policy seems to hold for participation research as well.

Yet, to conclude that participation research is wrong in claiming that citizens' involvement might produce far more effective outcomes than classic regulatory approaches would be an error in reasoning. Rather, we argue that collaborative environmental governance tends to be superior to top-down approaches, because in an outcome-oriented perspective the implementation of an average output is far better than a weak or even non-implementation of a potentially high-quality output.

4. Conclusions

Will environmental governance improve through the employment of public participation in policy implementation? Will it, more specifically, thus achieve improved substantive policy outcomes as the dominant rationale in current international and EU environmental regulation suggests? In this paper, we have sought to contribute to responding to these questions in two ways.

First, we have sketched a conceptual framework for analysis, drawing on and integrating existing hypotheses on causal relations. Taking on a 'classical' stance of implementation research, we have identified four major areas of influence: by incorporating relevant local information and environmental values, participation can lead to environmentally 'better' decisions. Most importantly, participation can lead to an improved implementation of decisions by fostering acceptance and conflict resolution. Furthermore, process characteristics and the societal and environmental context in which a decision process is situated largely influence the potential success of a participatory decision process with respect to improved substantive policy outcomes.

Second, we undertook – by way of analogy – a preliminary examination of the above propositions by systematically reviewing 47 cases (chosen from a larger pool of case studies) that reflect the plurality and multi-facetedness of participatory environmental governance, representing various geographic regions and political scales and different fields of environmental policy, and varying intensities of participation, duration and problem complexity. With respect to our main hypotheses, we found a divided result that expresses a trade-off: on the one hand, the 'quality' of decisions with respect to more environmentally sound outputs was rather lessened than improved through participation. On the other hand, participation did indeed foster the effective implementation of these decisions.

Much is left to be done. While in our own project, the in-depth analysis of several dozen case studies and their systematic semi-quantitative analysis is yet to be undertaken, we invite researchers in the field to join us in our effort to better understand the impact that participatory regulation has and will have on enhancing substantive policy outcomes.

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Annex: case studies analysed

Case	Policy field	Country	Type³	Reference
301(h)	Water management	USA	S	Burgess et al. 1983
Aargau	Waste management	Switzerland	I	Renn et al. 1998
Albamarle-Pamlico Estuarine Study	Water management	USA	S	Koontz et al. 2004
Berlin-Brandenburg	Airport siting	Germany	I	Barbian and Zilleßen 1997; Barbian et al. 1998
Brayton Point Coal Conversion	Air pollution management	USA	C	Burgess and Smith 1983
Brown Company	Air-pollution management	USA	C	Gilmore 1983
Cardiff Environmental Strategy	Municipal environmental plan	UK	S	Mills et al. 1993
Chesapeake Bay	Water management	USA	S	Meyers et al. 1995; Randolph and Kerns 1997
Chiwaukee Prairie	Wetlands management	USA	S	Haygood 1995
Cold Lake	Plant siting	Canada	S	Elder 1982
Colstrip Power Plant	Air pollution management	USA	C	Sullivan 1983
Denver's Clean Air Task Force	Air pollution management	USA	S	Stewart et al. 1984
Dortmund	Waste management	Germany	I	Gremler and Maibaum 1994
Dresden	Infrastructure politics	Germany	S	Schmidt-Lerm 2005
Dublin Transport	Infrastructure politics	Ireland	S	Flynn 1998
East Everglades Planning Study	Wetlands management	USA	S	Abrams et al. 1995
Foothills	Water management	USA	C	Burgess 1983
Fort Ord Restoration Advisory Board	Nature restoration management	USA	I	Szasz and Meuser 1997
Frankfurt/Main	Airport siting	Germany	I	Geis 2005
General Permit for Wetlands Fill	Wetlands management	USA	I	Rosener 1983; Delli Priscoli 1988
Gevelsberg	Infrastructure politics	Germany	S	Fischer-Ohlemacher and Körber 1993
Holston River	Water management	USA	C	Jaegerman 1983
Homestake County	Plant siting	USA	C	Watson and Danielson 1983; Kartez and Bowman 1993
Hudson River Settlement	Water management	USA	S	Talbot 1984

³ S = Policy Setting, I = Policy Implementation, C = Conflict Resolution.

Inland Northwest Field Burning	Air pollution politics	USA	C	Mangerich and Luton 1995
Interstate 90	Infrastructure politics	USA	S	Talbot 1984
Jackson	Urban development	USA	C	Hill 1983
Kleinhüningen Hazardous Waste Incineration	Waste management	USA	I	Vatter 1998
Konrad	Waste management	Germany	I	Müller-Erwig 2000
Monongahela Forest	Worest management	USA	S	Steelman 1996, 2001; Steelman and Ascher 1997
Münchehagen	Waste management	Germany	I	Müller-Erwig 1995; Striegnitz 1997
Pig's Eye	Water management	USA	C	Nelson 1990a
Portage Island	Natural resources management	USA	C	Talbot 1984
Promised Land	Natural resources management	USA	S	Purdy and Gray 1994
Quincy Library	Forest management	USA	S	Duane 1997
Sand Lake Quiet Area	Water management	USA	C	Nelson 1990b
San Juan Forest	Forest management	USA	S	Tableman 1990
Snoqualmie Flood Control	Water management	USA	C	Mazmanian 1979
Swan Lake	Water management	USA	C	Talbot 1984
Texas Copper Company	Plant siting	USA	C	Kartez and Bowman 1993
Tonascet	Forest management	USA	S	Geisler et al. 1994
Umatilla Basin	Water management	USA	C	Neuman 1996
Upper Narragansett Bay	Water management	USA	I	Burroughs 1999
Varresbeck	Waste management	Germany	I	Schmidt et al. 1994; Linnerrooth-Bayer 1995
Wildcat and San Pablo Creek	Water management	USA	S	Mazmanian 1979
Yosemite National Park	Natural resources management	USA	S	Buck and Stone 1981; Buck 1984
Yukon Wolf Management	Wildlife management	USA	S	Todd 2002
