Environmental Impact Assessment

Practical Solutions to Recurrent Problems

David P. Lawrence

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ENVIRONMENTAL IMPACT ASSESSMENT

To Barbara

PREFACE

This book was born from a nagging concern about how the environmental impact assessment (EIA) process is commonly depicted in EIA literature and applied in practice. It also stems from a perception that EIA practitioners need more help to cope with the many competing demands and recurrent problems encountered in their day-to-day work. More effective EIA process design and management can, I believe, help practitioners in their efforts to balance competing demands and to ameliorate recurrent problems.

My uneasiness about the EIA process has arisen over the past three decades. Over that period I have become increasingly convinced that there are far more process design and management choices available in practice than are customarily conveyed in EIA literature. It also seemed to me that EIA regulatory analyses usually began from and sought to refine current requirements rather than exploring, at a more fundamental level, the full range of potential regulatory choices.

This uneasiness was reinforced through my ongoing interest in EIA and planning processes. I have maintained a joint interest in planning and EIA for many years. I have practiced and taught in both fields and have addressed the interrelationships between the two fields through graduate and undergraduate papers, a doctoral dissertation, a series of journal articles, and considerable EIA process management experience. A central feature of planning theory is the plurality of overlapping and competing prescriptive planning theories. A central feature of EIA is the largely unitary approach to process design. Planning theory literature can be extremely frustrating! It is plagued by hyperbole, jargon, and, until very recently, a huge gulf between theory and practice. Still the claims, counterclaims, debates, and critiques alert the reader to the dangers of hidden assumptions and to the value of multiple perspectives. Such debates exist in EIA literature, but they are more muted. They

also seem to take more for granted regarding shared assumptions and perspectives. Depictions of the EIA process, in particular, are, from my perspective, less diverse than they should be.

My concern about the multiple demands and recurrent problems faced by EIA practitioners is a product of both direct experience and interchanges with other practitioners. EIA practitioners must counterbalance multiple, often conflicting internal and external demands. Frequently, it is expected that EIA requirements, procedures, and documents should be rigorous, rational, practical, substantive, democratic, collaborative, ethical, and adaptable simultaneously. These demands commonly reflect fundamentally different perspectives on the environment and on the appropriate role of EIA in decision making. Almost invariably, perspective differences are translated into varying interpretations of critical issues, the nature and significance of potential effects, and most centrally (in terms of the purpose of this book), how best to proceed from proposal inception to final proposal decision making and implementation. Difficulties encountered in dealing with multiple demands and perspectives often coalesce as recurrent problems that hamper effective EIA process design and management. EIA practitioners need additional assistance in navigating through this minefield.

This book is intended to help EIA participants (regulators, managers, EIA specialists, other study team specialists, nongovernment organizations) and observers (commentators, instructors, students) to contribute jointly to more effective EIA processes. Effective processes can help refine and achieve EIA regulatory objectives and further the goals of EIA as a form of environmental management. The book challenges the prevailing assumption that EIA should be structured around a unitary EIA process. It begins by identifying, through a scenario, eight recurrent problems encountered in EIA practice. The characteristics of multiple variations of conventional EIA processes, at both the regulatory and applied levels, are then presented. These analyses open up consideration of available regulatory and applied EIA process design and management choices. But they address the recurrent problems only partially. The residual problems that remain provide the springboard for a description and analysis of eight EIA processes for coming to grips with recurrent problems. The description of each of these EIA processes provides examples from practice, defines the problem, and identifies a direction for improvement. For each we then detail major relevant conceptual distinctions, describe how a process to reduce the problem would operate at the regulatory level (based on an overview of EIA requirements in the United States, Canada, Europe, and Australia), and explain how a process to reduce the problem would operate at the applied level. We next assess how well each process satisfies ideal EIA process characteristics. Each analysis ends with a summary overview and the identification of links between the conceptual analysis and the practice examples. In the final chapter we address how to link and combine EIA processes to operate in situations characterized by multiple, overlapping problems. EIA literature and literature from such related fields as planning, environmental and resource management, risk assessment and management, site selection and evaluation, and public participation are drawn upon to characterize and assess each EIA process.

The analyses and solutions offered in this book are far from definitive. Hopefully, they are practical. I believe that sufficient knowledge and experience now exist regarding the recurrent problems such that major pitfalls can be identified and possible improvements suggested. I am not sufficiently naive to suggest that we are on the brink of delineating that elusive core body of common knowledge that is supposed to characterize "mature" fields. I have serious doubts as whether such a quest is even desirable. I also appreciate that there are immense impediments to significant improvements to EIA practice, many of which lie beyond the control or influence of EIA practitioners. But I still believe that sufficient operating room remains within which EIA practice enhancements are possible. I also maintain that the EIA process is at the core of many such improvements. Hopefully, this book will contribute to such efforts.

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CHAPTER 1

INTRODUCTION

1.1 HIGHLIGHTS

This book is intended to enhance environmental impact assessment (EIA) practice. It provides practical solutions to EIA practitioners for major, recurrent problems encountered in daily EIA practice.

- The scenario presented in Section 1.2 highlights the problems. It illustrates how a failure to anticipate and respond to varying perspectives can contribute to the collapse of a seemingly well-designed and well-managed EIA process.
- In Section 1.3 we use insights from the scenario to identify key prerequisites to formulating a strategy that can cope with the problems that may arise from multiple perspectives.
- In Section 1.4 we go back to the fundamentals. We use an EIA definition and an overview of EIA characteristics to identify implications for overall EIA process management and for accommodation of the perspectives displayed in the scenario.
- In Section 1.5 we address the current state-of-the-art of EIA process management. We test the need for a strategy in light of current and emerging EIA practice. The analysis is based on an overview of EIA patterns and trends and a review of recurrent shortcomings in EIA practice.

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- In Section 1.6 we identify the EIA process as the organizing framework around which a strategy should be built. We explain why the EIA process in general and alternative EIA processes in particular are essential to the effort.
- In Section 1.7 we present a strategy to facilitate more effective EIA process management.
- In Section 1.8 we suggest how EIA stakeholders may use this book.
- In Section 1.9 we highlight major themes and conclusions.

1.2 A NOT-SO-HYPOTHETICAL SCENARIO

1.2.1 Brave Beginnings

A private proponent decides to establish a new hazardous waste treatment facility. Management realizes that there will be numerous licensing requirements, including the preparation and approval of an EIA. Accordingly, a consulting team is hired to prepare the EIA documentation and to ensure that all approval requirements are satisfied. A preliminary design is prepared for a state-of-the-art facility. An overview of available properties is conducted. A site is selected in a general industrial park a couple of miles outside a medium-sized community. An option is taken out on the property. Local community officials express a willingness to accept the facility because of the tax revenue to be generated and a promise to share a portion of the facility revenues with the local community. Two municipal councilors express reservations because of a fear that the facility might stigmatize the community.

The EIA process has a promising beginning. A core study team is assembled with ample EIA and regulatory approval experience. A variety of engineering and environmental specialists, together with an expert in public participation, are added to the team. A preliminary study design is prepared. Initial scoping sessions are conducted with government officials to identify regulatory requirements, concerns, and priorities. An initial set of public meetings and open houses are convened to identify public concerns and preferences. The study program is modified to accommodate public and agency concerns. The EIA is divided into a clearly defined sequence of steps. Provision is made for public and agency input into each step.

In the early months of the process, the focus is on establishing a sound environmental baseline and on refining facility characteristics. Several mitigation options are screened and compared in the ongoing effort to prevent and ameliorate adverse impacts. Initial background papers are prepared documenting baseline conditions, study methodology, the analysis of alternatives, and preliminary impact predictions. Impact predictions are then refined and impact significance determined for both individual and cumulative impacts. A concerted effort is made to mitigate potentially significant adverse impacts. In a few cases, this necessitates comparing mitigation options. These various analyses are consolidated first in working and background papers and then in a draft impact statement. Summary reports are prepared for each document. Documents are circulated for initial agency comment and are used as the basis for discussions and presentations at public meetings and open houses. All comments and suggestions are recorded. Responses are provided to

each comment received, including a detailing of how and where the comments are addressed in the EIA documentation.

1.2.2 Cracks in the Foundation

Public opposition begins to mount during this period. Initially, this opposition comes from individuals. It is not long before a local opposition group is formed. Local and then regional environmental organizations quickly join the fray. The local community groups are concerned about potential human health effects, possible declining property values, and community stigma. They strongly criticize the limited, closed, and informal procedure adopted for selecting the preferred site. The environmental groups question the need for the facility, arguing that it is old technology that should be superseded by waste reduction, reuse, and recycling initiatives. They challenge the "growth ethic" inherent in the predicted use of the facility and argue that the proposed facility undermines the cause of environmental sustainability.

Several faculty members from the local university also voice their opposition. They focus their comments on the scientific validity of the impact predictions. They especially point to the failure to use control communities, the lack of peer review, the excessively descriptive analysis, the questionable statistical analyses, the crude models employed, and the short duration of the baseline studies. In addition, they stress that the studies fail to adequately address uncertainties, low probability–high consequence risks, and perceived risks. The opposition to the facility culminates in a raucous public meeting. Many members of the public attending the meeting stress that public involvement in the process has been at best tokenism and at worst manipulation. Considerable frustration is expressed about what is seen as a loss of community control. Many participants argue that the process is neither open nor fair. They also suggest that it is unfair to locate such a facility in an area that generates such a small proportion of the waste, has several similar facilities, and is social and economically disadvantaged. Frequent reference is made to the mixed track record of the proponent in other communities. Several municipal councilors soon reconsider their initial support for the facility.

Initial agency reactions to the documents are mixed at best. As they work their way through the lengthy documents, some reviewers have difficulty in determining whether specific regulatory requirements and policies have been addressed explicitly. Other reviewers question the clarity of the methodology, challenge the methods or data sources used, argue that the methods have been misapplied, or suggest that conclusions are insufficiently substantiated. The alternatives analysis becomes a focal point of criticism. Several reviewers argue that a wider range of alternatives should have been considered, criteria are not explicitly defined or consistently applied, criteria are not ranked, and sensitivity analyses have not been undertaken to explore the implications of alternative criteria rankings and varying interpretations of mitigation potential and the implications of uncertainty. Substantial document modifications are made to address public and agency concerns and preferences. However, it is apparent that document modifications alone will not be sufficient to quell the tide of opposition that is building against the facility.

1.2.3 Hasty Repairs

In the face of this mounting opposition, the proponent decides to retrench and reconsider how best to proceed. A community advisory committee is established to ensure the ongoing involvement of all interests affected. A community conciliator, acceptable to all parties, is hired to chair the committee. Funding is provided to the committee to hire specialists to peer review all the major technical analyses. A separate subcommittee is established to formulate an impact management and local benefits strategy. The strategy is to ensure a greater level of local participation and control in facility operations, management, monitoring, and contingency planning. It also is to formulate local benefits and compensation policies and procedures for both local residents and the overall community. A parallel government advisory committee is established to better coordinate regulatory interactions.

1.2.4 Too Little, Too Late

The costs and the duration of the process have greatly increased—to the considerable exasperation of the proponent. The reformulated approach has some success in addressing many of the technical, scientific, and community control concerns. Broader environmental sustainability and social equity concerns are largely beyond the committee's mandate. Several options advanced by facility opponents are not addressed, on the grounds that they are impractical or beyond the control of the proponent. The negative perceptions of the proponent, the facility, and the EIA process are ameliorated only slightly by these efforts. Some environmental and community groups either refuse to participate in the modified process or opt out when it becomes evident that the committee agenda will be confined largely to refinements to technical analyses and to impact management. Several municipal councilors come to the conclusion that the likelihood of a satisfactory middle ground is remote and decide to add their voices to those of the facility opponents. More parties withdraw from the community advisory committee under a barrage of criticism from the groups they ostensibly represent.

It is increasingly evident that it is virtually impossible to reverse the momentum that has built up against the facility. Faced with the prospect of continued intense local opposition and protracted legal battles, the proponent decides that the costs of proceeding are simply too great and the likelihood of project approval too low. The application is withdrawn and the proponent decides that it will concentrate instead on upgrading and expanding existing facilities in other communities.

1.3 FIRST PRINCIPLES

1.3.1 An Open Mind

The preceding scenario is all too common in EIA practice. Admittedly, criticisms directed at any one process tend to be narrower. It is an overstatement and oversimplification to suggest that problems such as those cited above can always be avoided

or resolved. It is equally inappropriate to conclude that a negative outcome is inevitable. Certainly, some criticisms of EIA practice are overstated, unfair, and unreasonable. Sometimes, conflicting perspectives cannot be reconciled to the point where accommodations are possible. Sometimes the environmental consequences of proposed projects are simply unacceptable, regardless of process-related considerations. But that is not always the case. Just as often, arguably more so, the process fails because it is inadequately designed and managed. Many process-related problems can be avoided or reduced significantly. There is a substantial knowledge base, in both EIA and related fields, to draw upon. The task is not easy. It begins with an appreciation that many of the criticisms of EIA practice are valid. It is furthered by openness to alternative ways of "getting the job done."

1.3.2 Starting from Perspectives

How, then, to move from the types of problems cited in the scenario to better EIA process management? A reasonable place to start is with the perspectives and messages contained in the scenario. In brief, the major perspectives are as follows:

- The local university faculty members and some peer reviewers argued that the EIA process, documents, and methods should have been more scientifically rigorous.
- The environmental groups and some government reviewers made the case that alternatives were too narrowly defined and were not evaluated systematically and consistently.
- The environmental groups concluded that the EIA process and documents failed to adequately advance long-term environmental quality and sustainability principles and goals.
- The proponent and some reviewers felt that the process and documents were too lengthy and costly. They were also concerned that the EIA documents were insufficiently linked to specific regulatory approval requirements, policies, and guidelines.
- Local community groups and some politicians expressed the view that they were losing control over their lives and their community. They did not trust the proponent and had little faith in the government.
- Local community groups and individuals took the position that the EIA process was largely closed and that their views and positions were not considered seriously.
- Local community groups and politicians argued that the EIA process was unfair and that the benefits and costs from the proposed facility were unfairly distributed.
- Environmental groups, some local residents, and some government reviewers felt that the risks and uncertainties associated with the proposed facility were not adequately anticipated or managed.