PERSPECTIVE

Avoidable Pitfalls in Environmental Impact Assessment Practice

David P. Lawrence

We, as Environmental Impact Assessment (EIA) practitioners, have a not-surprising tendency to rationalize when things "go off the rails." We often point to unforeseen and arguably unforeseeable circumstances. The actions of various "unreasonable" stakeholders are commonly cited. EIA processes and documents are frequently lengthy, complex, controversial, and uncertain . . . all of which is well and good. But such contextual factors are not always at the root of the difficulties encountered in EIA practice. Sometimes the problems that emerge are at least partially attributable to the failure of EIA project managers and study teams to avoid readily identifiable pitfalls. Experienced EIA practitioners should be aware both of the potential pitfalls and of the means of preventing them from occurring—or, at least, of promptly ameliorating adverse consequences as they arise.

Competence-related problems continue to occur in the EIA process, notwithstanding ample, readily available advice and guidance that should minimize such problems. Perhaps this gap between knowledge and execution can be partially explained by a failure to focus on recurrent, avoidable, competence-related pitfalls. Twenty examples of such problems are described below.

1. Project Managers as "Bottlenecks"

On a large project, a project manager can be overwhelmed if she or he attempts to take on all the project management responsibilities. A core team approach is more appropriate for a large project. The same problem can occur on even an intermediate-sized project if the project manager "micro-manages" every aspect of the EIA process. A good team and effective delegation is essential. Effective delegation means strategic management, not the absence of control and guidance.

2. Project Managers as "Autocrats"

Project management in an EIA process is not simply giving orders. Close and ongoing communication and consultation should be maintained with proponents, with other study team members, and with stakeholders. The project manager should provide a clear rationale for all instructions. Often, others have useful advice to offer. The project manager should be a good listener and should actively seek constructive advice and criticism. Open-mindedness, flexibility, and an even temperament are all part of leadership.

3. Project Managers as "Doormats"

Project managers need to have a clear vision of where the EIA process is to go and how objectives are to be achieved. The EIA process cannot be allowed simply to drift. The project manager has to have sufficient self-confidence, experience, and general knowledge to challenge specialists when inputs are unsubstantiated, incomplete, inconsistent with requirements, misdirected, badly written, poorly structured, or of dubious quality. She or he also has to ensure adherence to budget, scope, format, and timing requirements. The project manager should exercise such responsibilities firmly and calmly.

4. Team Members Who Aren't Team Players

Sometimes specialist team members see their role as no more than undertaking and documenting their analyses. They see team interactions, compliance with document format requirements, and other general project activities as unnecessary distractions to be avoided where possible or, if necessary, reluctantly tolerated. EIA is a highly interdisciplinary, often trans-disciplinary, activity. This necessitates the full participation of specialists in such joint EIA activities as scoping, alternatives analysis, significance interpretation, cumulative effects assessment, agency and public involvement, impact management, and document preparation and review. A unified and consistent documentation approach also is essential.

5. Not Up to the Task

Sometimes specialists involved in an EIA process do not have sufficient relevant expertise and experience in their field, in EIA, in applied knowledge situations, concerning the local environment, regarding the proposal type, or in working on a team. This type of problem can generally be minimized with careful team selection and effective project management. The competency problem is more problematic at the project management level. Having extensive project management experience, as is often the case with engineers and designers, is not the same as having extensive EIA project management experience and expertise. Similarly, lawyers may have a working familiarity with EIA laws and regulations, but be lacking in EIA and project management experience and expertise. Also, lawyers occasionally treat EIAs as advocacy documents. Sometimes lawyers, engineers, designers, and specialists in other fields are competent EIA project managers; however, an in-depth understanding of EIA as a field of theory and practice, coupled with extensive EIA project management experience, is essential.

6. A Failure to Focus on Decision Making

A practical EIA process is necessarily focused. Without focus, important concerns receive too little attention and unimportant concerns receive too much attention. The net result is a protracted and costly EIA process and EIA documents of dubious quality. Unfocused documents tend to be highly descriptive and very lengthy. Decision makers and stakeholders may have difficulty determining if and how their concerns and priorities are addressed; however, EIA is a decision-making tool. As such, the EIA process should concentrate on providing a sound basis for making and implementing environmentally sound decisions.

7. Gaps and Blind Spots

EIA practice is sometimes subject to "tunnel vision." Occasionally the analysis of alternatives is too narrow, too superficial, and too abbreviated in the rush to concentrate on predicting and managing the effects of the proposed action. Social and cultural effects tend to receive insufficient attention. More attention still needs to be devoted to indirect, cumulative, and sustainability effects, although current attention to these matters is increasing. EIA practice sometimes concentrates exclusively on meeting EIA regu-

latory requirements. The appropriate treatment of stakeholder concerns and perspectives is frequently just as important in determining whether an EIA will be approved and effectively implemented.

8. A Failure to Integrate

EIA documents that represent little more than a compilation of specialist inputs are of limited decision-making value. Competent EIA processes and documents trace through the interactions among disciplinary inputs. They systematically undertake such integrative activities as alternatives assessment, model building, assessing cumulative effects, and formulating impact management strategies. Integration also entails creatively accommodating multiple study team, proponent, regulator, and stakeholder perspectives and interests.

9. A Failure to Substantiate

Sometimes EIA documents are full of unsupported assertions, claims, interpretations, and conclusions. Occasionally, specialists are under the mistaken impression that their "professional judgment" provides a sufficient basis for an interpretation or conclusion. It does not. Interpretations and conclusions should always be supported by evidence and explicit reasons. In this way, judgments can be independently tested and evaluated.

10. Artificial Timelines and False Economies

A focused and well-structured EIA process can be expeditious and economically executed. Occasionally there are "hard deadlines," emergency situations, and severe resource constraints that necessitate an abbreviated, selective, broad-level, and "streamlined" EIA process. But there are limits. Sometimes artificial time and budget constraints are imposed either at the outset of a process or when a process is taking longer than expected. These constraints can result in superficial, error-prone, and inadequate analyses, and truncated agency and public consultation procedures. The most common outcome from the imposition of artificial limits is a much more time-consuming, controversial, and costly review and approval process, and a much greater likelihood of process failure.

11. Quantify Everything

The desire for precise, verifiable predictions and consistent comparisons is laudable. However, the database must be capable of supporting such efforts. Forcing the quantification of qualitative data can distort the analysis of impacts and inhibit the reasoned comparison of alternatives. The inappropriate application of quantitative methods can imply a greater level of precision and control than can be supported, and it can make it more difficult for decision makers and stakeholders to understand or participate in the EIA process.

12. A Failure to Quantify

Appreciating the limits of quantification does not mean abandoning all efforts to quantify. It can be extremely exasperating to read an EIA document full of vague generalities and ambiguous statements. Quantified predictions should be provided wherever practical, with due allowance for uncertainties. In this way, predicted impacts can be monitored, the accuracy of predictions determined, and the suitability of predictive methods evaluated. Precision in specifying mitigation measures is necessary for the measures to be implemented and for mitigation effectiveness to be determined.

13. Bias and Advocacy

The standard of EIA success should not be approval. Instead, the standard of success should be an environmentally sound decision-making basis and an enhanced environment. EIA professionals cannot be objective or value free. However, consistent with professional codes of practice, they can work toward EIA objectives in a manner consistent with good practice standards. It is essential to the credibility of the EIA process and documents for the professional integrity of the study team to be maintained. EIA documents should be scrupulously checked to ensure that there is no bias.

14. A Failure to Adjust

Except on the simplest EIA projects, a "carved in stone" approach to EIA process management is rarely effective. Modifications occur in proposal characteristics, environmental conditions, available alternatives, and stakeholder positions. Unanticipated events occur. The "rules of the game" evolve. An EIA process also must evolve and adjust in response to changing circumstances. A gulf between what is needed of a process and what it can provide will emerge and progressively widen with an inflexible EIA process, usually to the point that a major crisis occurs. The outcome from the crisis will tend to be either the termination of the process or major, costly, and time-consuming modifications. Such crises can be avoided or greatly ameliorated with an adaptive EIA process.

15. A Failure to Anticipate

EIA practitioners sometimes complain, when things go wrong, that they were "blindsided" by unanticipated events and changing circumstances. Sometimes the complaints are valid. Often, however, there are ample early warning signs. These early warning signs can frequently be detected by scanning ahead, by frequent consultations with other parties, through pilot projects, with systematic assessments of comparable situations, and by "pre-testing" interpretations, options, and conclusions. A flexible EIA process also makes it easier to anticipate and rapidly respond to change.

16. A Failure to Communicate

An EIA process can be greatly hampered by poorly structured, badly presented, and awkwardly written EIA documents, even if those documents are technically sound. Competent EIA documents and presentations should be clear, succinct, and tailored to the audience. Effective communications channels into the EIA process from regulators and from other interested and affected parties also are essential.

17. Participation Without Involvement

A sure sign of a questionable EIA process is the tendency to count the number of meetings, attendees, and submissions (i.e., inputs) without detailing the changes to the process and documents resulting from stakeholder comments and suggestions (i.e., outputs). Involvement also is inhibited if participation largely consists of presentations (i.e., one-way communications). Events conducive to two-way communications (e.g., workshops and open houses) and continuous involvement procedures (e.g., advisory committees) are less likely to result in an EIA

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process characterized by participation without involvement.

18. A Lack of Perspective

Environmental specialists, proponents, regulators, non-governmental organizations, and indigenous people will often interpret the significance and acceptability of impacts and proposed actions very differently. The EIA process and documents should reflect and accommodate this multiplicity of perspectives. There are many ways of looking at the world and how it should be. It is especially important that judgmental activities such as scoping, significance interpretation, the evaluation of alternatives, proposal acceptability, and the determination of appropriate mitigation, compensation, and monitoring be interpreted from the perspective of each interested and affected party in the process. Consultation programs also should be tailored to a variety of needs and perspectives.

19. One Size Does Not Fit All

An EIA process that operates effectively in one setting can be entirely inappropriate in another. Context matters. The EIA process should be designed to suit proposal type and setting type characteristics. Further adjustments to suit unique project and environmental characteristics also are essential. The goal should be an EIA process that (1) fits the context (e.g., ecological, social, political, institutional, economic) and (2) selectively and positively influences the context (i.e., EIA as an instrument for environmental enhancement and sustainability).

20. Neglect of Follow-Through

A well designed and executed process and sound EIA documents are necessary. They are not sufficient. Adequate attention must be devoted to follow-through issues, procedures, and requirements. Such concerns need to be addressed both prior to and throughout implementation.

Conclusion

These competence-related pitfalls are largely avoidable. They are not always obvious. Care must be taken to minimize the likelihood and severity of their occurrence. Avoiding and ameliorating competence-related EIA pitfalls are necessary—but far from sufficient—actions for a successful EIA process outcome. There are hosts of other technical, methodological, procedural, and substantive factors that also can contribute to the success or failure of an EIA process. But a failure to avoid these all-too-recurrent pitfalls in EIA practice is almost certain to undo even the most sophisticated and groundbreaking EIA approaches and methods.

This article is largely extracted from a forthcoming book by the author, titled Environmental Impact Assessment—Practical Solutions to Recurrent Problems. *The book is to be published by John Wiley and Sons, Inc. in November 2003.*

Address correspondence to David P. Lawrence, President, Lawrence Environmental, PO Station "A," Box 3475, Langley, British Columbia, Canada V3A 4R8; (fax) 604-534-9889; (e-mail) lawenv@axionet.com.