

# **AN EVALUATION OF THE BEAUFORT SEA ENVIRONMENTAL ASSESSMENT PANEL REVIEW**

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## **AN INTRODUCTORY NOTE ON EVALUATION**

Evaluation is something we do all the time. Its purpose in government, generally speaking, is to ascertain the effectiveness of a particular programme, project, or activity. Such an appraisal may be implicit or explicit, based upon informal soundings or formal analysis. Most evaluations fall in the former category and tend to be anecdotal in nature and global in scope of judgement. A more systematic and discriminating approach to evaluation is in order when major policy initiatives or modifications are being considered or have been attempted. Chapter 1 outlines the rationale and strategy for the evaluation of the Beaufort Sea Environmental Assessment Panel review.

## CHAPTER 1: INTRODUCTION

The final report of the Beaufort Sea Environmental Assessment (EA) Panel was submitted in July 1984 and released soon after. These actions concluded the lengthiest and most comprehensive public inquiry conducted to date under the federal Environmental Assessment and Review Process (EARP). Four years had elapsed since the proposal for hydrocarbon production in the Beaufort Sea was referred by the Minister of Indian Affairs and Northern Development to the Minister of the Environment for formal review. During that time, several hundred hours of public hearings took place at different locations in northern and southern Canada. The transcripts of the testimony at the general and community sessions run to approximately 30,000 pages; the written documentation submitted to the Panel occupies almost one hundred feet of library shelving. The total cost of panel operations for the Beaufort Sea review was \$2.7 million, and the overall cost is estimated at four to eight times that figure. In addition, countless man-hours of volunteer labour were spent on preparing and reviewing materials, and making and listening to presentations.

While the time, resources, and effort expended on this review were unprecedented, they reflect the importance of the issues at stake. Under consideration were the environmental and socioeconomic implications of a multi-component proposal for hydrocarbon production and transportation from the Beaufort Sea-Mackenzie Delta region. The potential scale and impact of this scheme are enormous; it could set the region firmly on the path of industrialization and shape the course of development across the entire North. For the indigenous peoples living in the potential impact zones, the proposal virtually amounted to a choice of futures; a last chance, perhaps, to adapt a traditional way of life and subsistence economy to the imperatives of frontier energy development.

On institutional as well as policy grounds, the Beaufort Sea review represented an important step in the evolution of decision-making processes north of 60°. It involved a significant expansion in the use of EARP by the federal government for planning and management of northern development. Several major changes were made to the procedures of public review followed by previous environmental assessment panels. The lessons of the Beaufort Sea inquiry are thus of considerable interest for process development, especially now when major changes to EARP are under active consideration.

For these reasons, the Federal Environmental Assessment Review Office (FEARO) commissioned an evaluation of the Beaufort Sea experience. Its objectives are:

- to examine the policy and institutional implications of the mandate of the Beaufort Sea review;
- to analyze the operational effectiveness of review procedures, especially those that represent departures from conventional practice; and
- to consider the contribution of the Panel's report to environment and development decision-making.

A "multiple perspective" approach to evaluation was adopted, i.e., an attempt was made to identify and compare a range of viewpoints on the effectiveness of the Beaufort Sea review process. Several methods were employed to collect the information that provides the main basis for the interpretations contained here. This is not to suggest that the evaluation is neutral or free of personal judgement; only that a deliberate effort was made to include the input of key participants in the review process. Underlying the approach taken is a view of evaluation as an act of policy judgement that can be bolstered through systematic analysis. Methods and techniques for evaluation research thus became an important secondary consideration in the execution of this project.

The thrust of analysis is directed toward FEARO, which is responsible for the administration of EARP. Section 35 of the EARP Guideline Order (P.C. 1984-2132) requires FEARO to draft terms of reference for public reviews, to provide written procedures for their conduct, and to ensure policy and procedural consistency between the activities of independent panels. Public reviews, by definition, are also interactive processes, shaped by the actions of all participants. This report thus may be of interest to others involved or interested in the Beaufort Sea review and perhaps to a wider audience concerned with project planning, resource management, and environmental decision-making in the North.

The report is organized into three main parts:

- Section I examines the study strategy and research design;
- Section II analyzes the role, practice, and impact of the Beaufort Sea Panel review; and
- Section III contains conclusions and recommendations on process development.

A number of appendices containing support materials are also included. Each section is prefaced with a short note on evaluation. Readers may find this helpful for linking sections together and for placing the report in an overall context.

## SECTION I

### THE STUDY IN PERSPECTIVE

The Beaufort Sea inquiry was a path-breaking exercise for the federal Environmental Assessment and Review Process. in similar vein, this study may be considered as an experimental form of the audit and evaluation procedures now being promoted by FEARO and other federal agencies as a tool for process development. Learning by doing, the *motif* of evaluation, may equally well be applied to the study itself. Accordingly, more space is given to placing the research in perspective than might normally be expected. This is the task of Chapter 2; the approach taken is set out in Chapter 3.

## CHAPTER 2: FRAMEWORK FOR ANALYSIS

A stronger commitment is now being made by FEARO and other federal agencies to promoting research which documents the implementation of the Environmental Assessment and Review Process (EARP). The present study is one reflection of that interest. It complements, for example, the analyses of selected EARP panel inquiries undertaken by Everitt and Sonntag (1987), Jakimchuk (1987), Janes and Ross (1987) and Wallace (1986). On a broader front, the evaluation of the Beaufort Sea review may be seen as an extension of general and case reviews of EARP. These form a significant theme in the literature on environmental assessment. The orientation of this report differs in degree rather than in kind from previous studies, largely by reason of the research-management linkage described subsequently.

One of the subsidiary objectives of the Beaufort Sea evaluation involves designing a framework for organizing research in support of environmental impact assessment (EIA) process development. The study will thus serve as something of a test case of the ideas and methods available. Such research draws upon a rather eclectic body of knowledge and a mixed bag of tools. A review of this material is undertaken in the present chapter. The premises and perspectives that are developed may be of interest to EIA administrators and practitioners concerned with the application of audit and evaluation procedures.

Evaluation of environmental reviews, public hearings and related processes remains a relatively novel, though certainly not uncharted, area of research. Off-the-shelf procedures for this purpose are not readily available. Guidelines for analysis, however, can be derived from recent work on post-project audit and environmental follow-up (e.g., Munro, Bryant and Matte-Baker 1986; Green, MacLaren, and Sadler 1987), on public participation in environmental management (e.g., Sadler 1980) and on programme evaluation (e.g., Abt 1976).

The discussion of this background material will be organized to provide perspectives on four basic questions:

- Why is post-EIA evaluation important?
- What should be evaluated in EARP public reviews?
- How might post-panel evaluation be carried out?
- What practical lessons are available from past work on this and related areas?

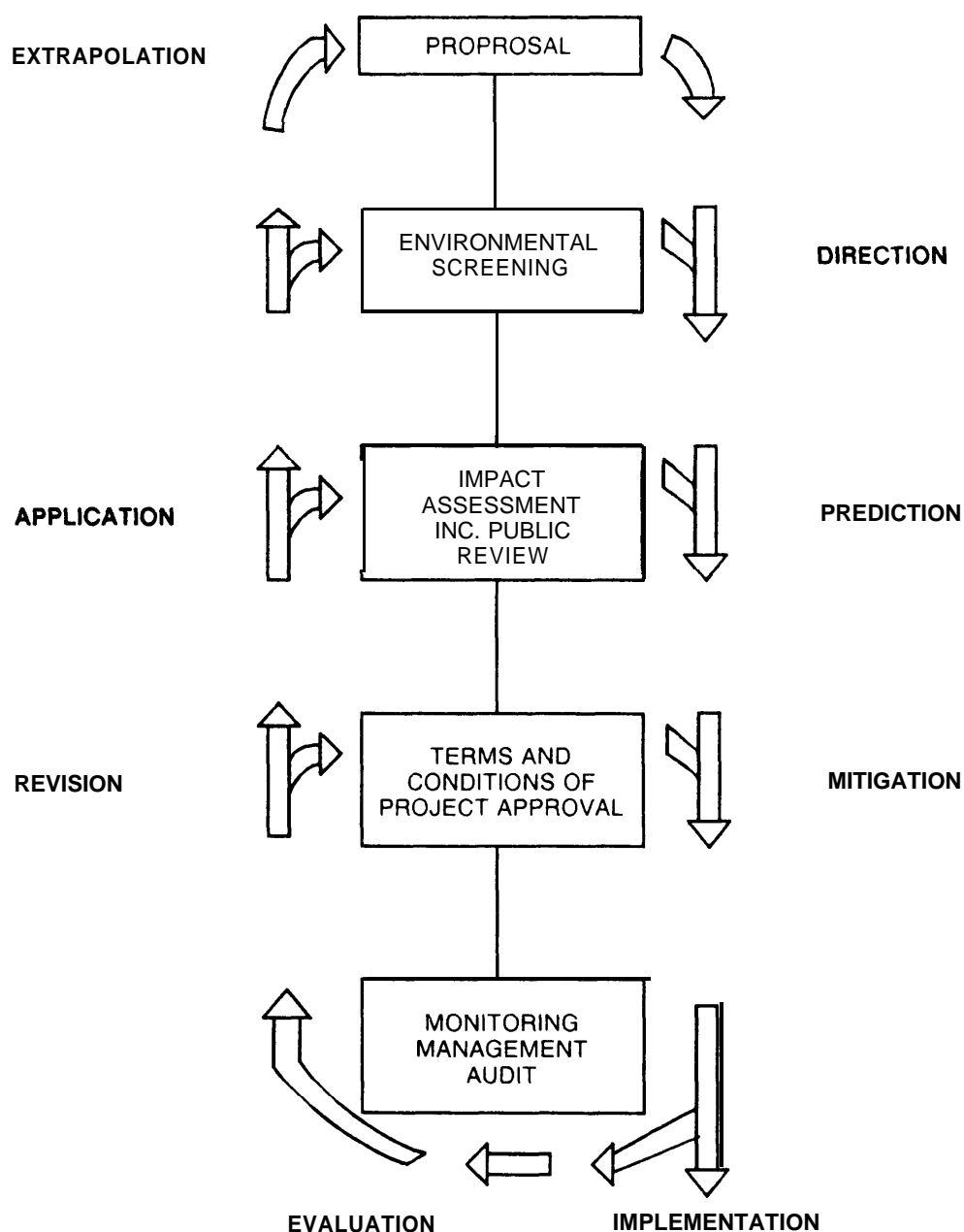
As much as possible, research ideas and findings bearing on these problems are summarized in figures, tables, and selective citations.

## POST-EIA EVALUATION

EIA, as traditionally conceived, is primarily an exercise in prediction (e.g., Munn 1979). It involves analyzing the potential changes associated with development proposals and identifying the mitigation measures necessary to offset these. The emphasis is on the pre-decision phase leading to the establishment of terms and conditions for project approval. After a decade of experience, it is now recognized that impact assessment is both an imprecise and insufficient activity for development control. For this approach to work effectively, it must be supplemented by prior-order policy and planning frameworks and by impact monitoring and management activities during project implementation (Cornford, O'Riordan, and Sadler 1985). More recently, the increasing emphasis on follow-up to EIA has extended to an interest in evaluation of experience for both project and policy development.

Without feedback, environmental assessment remains a static, linear exercise rather than a dynamic, iterative process (see Thompson and Bankes 1980; Larminie 1984; Wiebe *et al.* 1984; MacLaren and Whitney 1985). The addition of an ex-post evaluation component is an important requirement for closing both the assessment and development cycles and building continuity into them. Figure 1 illustrates the place of this component in the process of environmental assessment and management. It emphasizes the opportunities that exist for administrators and practitioners to learn from experience and apply the results to future actions. The particular focus of interest here is on evaluation of EIA processes as a built-in mechanism for quality control. As a formal procedure, evaluation encompasses and draws upon the results of related activities, such as surveillance, monitoring, and audit.

Several points about these terms and their relationship need brief clarification (for further discussion, see Bisset 1980; Munro, Bryant, and Matte-Baker 1986; Sadler 1988). Evaluation is used here to refer to the generic process of post-EIA research, analysis, and interpretation. The end products of evaluation are subjective, policy-oriented judgements about the effectiveness of EIA process, practices, and procedures. The notion of audit, by contrast, implies a reasonably objective verification of compliance with pre-set standards, based on the examination of a system of records. For project assessments, the audit "trail" will be established by monitoring and surveillance data. Where this is absent, inadequate, or insufficient for the purpose of evaluation, research can be supplemented by or based on other methods. In the present case, these include survey, consultation, and observation. Given its objectives and methodology, this study is best referred to as an evaluation rather than an audit.



**Figure 1.** Building Continuity into EIA Through Ex-Post Evaluation  
Source: Sadler (1988)

The evaluation of EIA practice can take a number of forms. A **typology** of research is set out in Table 1. It is based on the proceedings of the Banff conference on Canadian and international experience in environmental audit and evaluation (Sadler 1987a). The framework indicates that the performance of EIA and supporting processes can be reviewed from

technical, consultative, administrative, and/or decision-implementation standpoints. Under each theme, the focal points for analysis are listed. Basic criteria for the evaluation of effectiveness, drawn from concepts used to organize discussion of the field, are also set out.

**Table 1**

Evaluation of EIA Practice: A Typology of Research and its Application to EARP

Research Theme	Elements of Analysis	Criteria of Effectiveness	Characteristics of Issues Referred to EARP Panels
1. Technical Analysis	<ul style="list-style-type: none"> <li>● accuracy of impact predictions, adequacy of data and methods</li> <li>● appropriateness of mitigation and monitoring</li> </ul>	rigorous	complex: high degree of scientific uncertainty about consequences of proposal
2. Consultative Procedures	<ul style="list-style-type: none"> <li>● sufficiency of information</li> <li>● suitability of measures for involving publics, and incorporating their concerns</li> </ul>	responsive	controversial: range of interests and values affected by proposal
3. Institutional Arrangements	<ul style="list-style-type: none"> <li>● efficiency and fairness of administrative procedures for conduct of assessment and coordination of activities</li> </ul>	responsible	cross-jurisdictional: different levels and or sectors of government involved in review of proposal
4. Decision-making implementation	<ul style="list-style-type: none"> <li>* utility of findings for project approval, design, and control</li> <li>● contribution to design of strategies and instruments of environmental management</li> </ul>	<p>relevant</p> <ul style="list-style-type: none"> <li>– to immediate problem-solving</li> <li>– to long-term development of policy and institutional frameworks</li> </ul>	<p>consensus-resistant: trade-offs among competing perspectives must be incorporated into recommendations on terms and conditions</p> <p>context-dependent: project-specific issues are difficult to disentangle from related concerns of policy rationale and planning alternatives</p>

The marks of operational excellence in EIA are the three r's: *rigorous* analysis, *responsive* consultation, *responsible* administration. EIA is also part of a larger process of decision-making that usually leads to the establishment of the terms

and conditions for project approval. The results of EIA processes, whether in the form of rulings or recommendations, can be reviewed for their short- and long-term *relevance* to decision-making and problem-solving respectively.

A comprehensive analysis might focus on the inter-relationships among these elements or between the EIA process and the policy and institutional frameworks under which it operates. This type of cross-disciplinary research shows particular promise for improving the effectiveness of EIA (Canadian Environmental Assessment Research Council 1986). It encompasses a broad spectrum of studies of EIA as *trans-science* and policy science, i.e., a process which bridges the realms of fact and value, and links them to the realities of decision-making. The most productive focus of analysis will be determined by the problems experienced; it will thus reflect, to some degree, the nature of the institutional framework established for the referral of projects and the conduct of assessment. A description of Canadian systems can be found in Couch (1988).

## APPLICATION TO EARP

The characteristics associated with the formal phase of EARP are the point of departure for the present study. Projects referred for panel review, by definition, are large-scale and carry a range of potentially significant environmental and social effects (FEAR0 1987a). At this level, the challenges to EIA practice are at or near their maximum extent. EARP panel investigations, in other words, are an atypical process in certain important respects. These aspects are traced briefly here with a view to establishing the implications for process evaluation.

Basic to this analysis is the nature of the problems which EARP panels typically deal with. The issue characteristics outlined in the final column of Table 1 are a classic example of what Mason and Mitroff (1981) call "wicked problems"; i.e., they resist analysis and demand new approaches. Many of the adjustments which have taken place in EA panel reviews may be seen as a continuing effort to deal more systematically with the characteristics noted in Table 1. As a result, the process has become progressively broadened in scope and purpose. It has evolved from a rather narrow, technically-oriented focus on ecological impact prediction and mitigation and toward a broader planning-oriented approach, which now encompasses socio-economic considerations and their policy and institutional implications. The Beaufort Sea referral represents the leading edge of this trend.

For present purposes, the significance of this transition lies in the refinement of ideas on process development that have occurred. A new framework of thinking about environmental assessment is emerging. Project-by-project impact analysis is seen as an integral part of a more holistic and proactive process of decision-making. While this model remains elusive, the emphasis is on fostering an adaptive<sup>1</sup> and integrative<sup>2</sup>

<sup>1</sup>*Adaptive* environmental assessment and management is characterized by a deliberate and flexible effort to cope with the uncertainty that stems from our lack of understanding of complex and dynamic ecosystems and the way they respond to the impact of human activity. The approach is one of experimentation, trial and error, learning from experience, feedback, and adjustments to policy and management (Holling 1978)

<sup>2</sup>*Integrative* processes are required to give effect to adaptive EIA. The emphasis is on coordinating technical analyses, consultative activities, and participants' roles and responsibilities; managing the flow of information and meshing biophysical and socio-economic data; and linking EIA to the broader process of decision-making (Sadler 1986)

approach to environmental assessment and management. By extension, these linked concepts become strategic referents for respectively judging the effectiveness of approaches to EIA and the process by which these are given effect. They place in context, rather than replace, the criteria for technical, consultative, and institutional performance set out in Table 1.

Figure 2 is an attempt to illustrate this relationship. It provides a systems perspective on the operational components and strategic relationships of EA panel reviews. The diagram indicates the various opportunities for organizing the research themes previously identified. Within this context, EARP can also become a point of entry for a wider scrutiny of development decision-making; focusing on the extent to which prior processes are in place to support the work of the Panel or were subsequently established as a result of its final report.

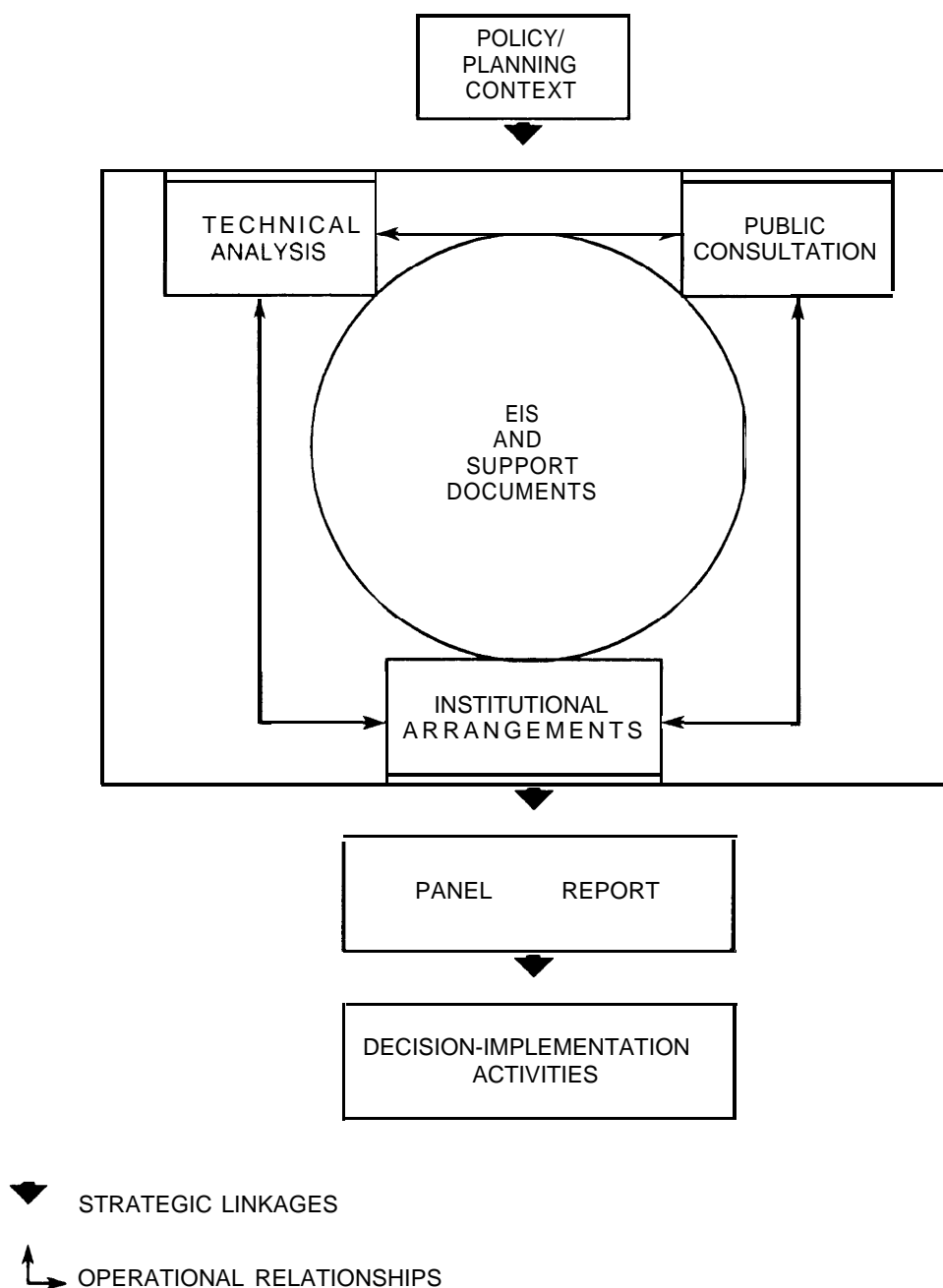
The conventional wisdom is that an integrative and adaptive approach generally leads to a balanced report and recommendations. In practice, the chain of events linking process and product is rarely linear. A number of factors intervene. The nature of the process, first of all, places heavy demands upon the organizing skills and synthesizing abilities of EA panels. It involves analyzing and weighing a complex mass of evidence; part fact, part value, and much of it strongly contested. Panel deliberations, moreover, take place *in camera*; and this aspect of the process remains outside the bounds of evaluation.

Quite understandably, panel reports are often judged independently of their context. The conclusions reached by participants and observers about the utility of panel findings and recommendations also tend to retroactively colour assessments of the overall review process. Subsequently, the contribution of the report, as an input to decision-making, may not be immediately evident. The results and outcomes of panel work include their effects on project implementation, on the policy climate and institutional framework under which development is managed, and ultimately on the degree of protection afforded to environmental values and community well-being. The distinctions made above between process and product and between immediate and longer-term contributions to decision-making and development and are important ones. In the literature on programme evaluation, they carry certain methodological overtones that are the next subject of discussion.

## STRATEGIES FOR RESEARCH

A research strategy for post-panel evaluation is outlined in this section. It is based upon principles drawn largely from previous work in public participation (Sadler 1978, 1980). The formal phase of EARP, above all, is a public process, organized to facilitate scrutiny and discussion of development proposals by affected and interested parties. Several formal approaches to the evaluation of public participation processes have been developed (Sewell 1978). While these vary in scope and sophistication, they incorporate similar purposes and parameters of analysis.

The most comprehensive model to date, proposed by Morgenstern, Durlak, and Homenuck (1980), provides a useful



**Figure 2.** A Systems Perspective on Environmental Assessment and Review: Key Elements and Linkages for Post-Panel Evaluation

starting point. It draws on the literature on programme evaluation to make some important points about research that deals with the process, rather than the product, of public participation. These orientations, which appear at first glance to be complementary, often encompass quite different

conventions and methods of analysis. Table 2 compares the two approaches and indicates how they may be combined into a more comprehensive mixed-model of evaluation. It establishes the basis for a choice of research strategy.

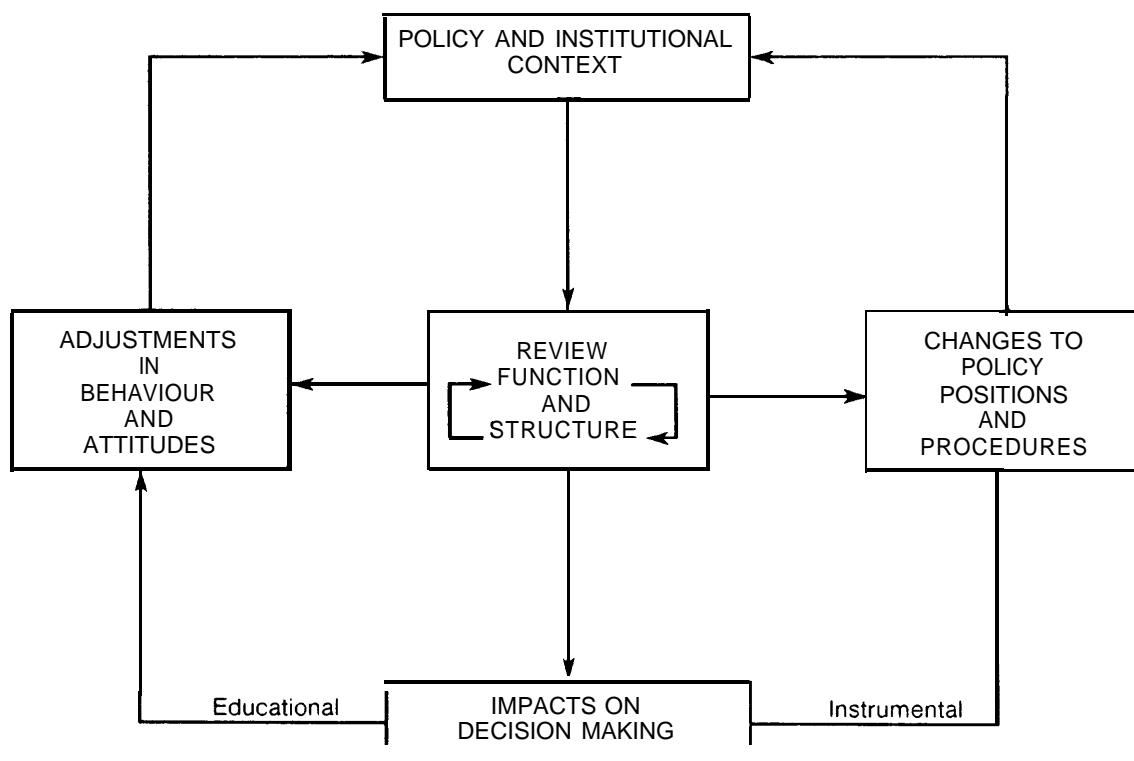
What is termed *summative* evaluation in Table 2 is product-oriented; it is concerned with results — what was achieved by the public review. The objective is to identify the impact of impact assessment on government decision-making for the purpose of demonstrating and promoting “service delivery.” This approach is based on the implicit or explicit assumption that such effects can be objectively measured and then compared to pre-established goals. It is derived from classical research on programme evaluation, in which there is a reliance on mechanistic analogies, quantitative data, and statistical analysis.

Formative evaluation is process-oriented; it is concerned with operational performance — how things were done. The emphasis is on identifying the successes and shortfalls of the procedures adopted, with a view to making future improvements. This approach incorporates the recognition that the goals and results of such processes are fluid, vary with perception, and are difficult to measure with any certainty. It lends itself to a more subjective, Interactive approach that utilizes qualitative data from participant responses.

**Table 2**

Strategies for Evaluation and their Research Characteristics

Research Characteristics	Type of Evaluation		
	Summative	Formative	Transactive
1. Focus	Goal attainment; concerned with results	Operational performance; concerned with procedures	Process effectiveness; concerned with relationships of procedures and policy
2. Purpose	Marketing; product promotion	Learning; procedural improvement	Understanding; process development
3. Objectives	To determine impacts on planning and decision-making	To identify how well mechanisms and techniques worked	To establish the forces influencing operational performance and/or goals attainment
4. Approach	Objective and mechanistic	Subjective and humanistic	Mixed and holistic
5. Assumptions	Goals of public participation programmes and activities are specific and stable; outputs are a direct function of inputs	Consultative processes do not conform to classical assumptions of, or requirements for, evaluation; people and their interaction are the reference point for analysis	Assumptions in Column 1 usually do not hold; the focus is on the evolving cycle of goal formation, modification through participation, and contributions to decision-making
6. Methodology	Quantitative and detached; emphasis on scientific reductionism and rigour in data collection and reliance on standardized techniques to produce defensible and verifiable results.	Qualitative and interactive; emphasis on liaison with participants to establish their perceptions and attitudes; reliance on “soft” or experiential data to diagnose problems and potential improvements	Composite model; emphasis varies depending on circumstances and pre-conditions; policy and institutional analysis utilized to establish broader context.
7. Timing	After the fact	After the fact or ongoing	Both. Emphasis on phased approach, including discrimination between immediate and longer-term programme effects.
8. Evaluator	Independent and external to responsible agency	Internal or external; latter criterion is research desiderata	Independent, may be internal if policy implications warrant.



**Figure 3.** A Transactive Framework for EA Panel Review

A hybrid approach, labelled *transactive evaluation* in Table 2, is concerned with the overall effectiveness of the review process. It is aimed at gaining an understanding of why certain aspects worked or did not work as expected, and broadly corresponds to what is termed process *analysis* in programme evaluation (Deutscher 1976; MacNiven 1980). This approach considers results in terms of processes (or vice-versa) and takes into account the context in which these operate. A dynamic rather than a static perspective is gained, which highlights the factors that influence the activity being evaluated. With transactive methods, elements of summative and formative analysis are recombined. This approach, for example, recognizes that goals are often vague, fluctuate, and resist objectification. At the same time, a systematic attempt is made to grapple with the problems of how to measure and organize “soft” or qualitative data.

This approach was endorsed by participants at a national workshop as best suited to deal with the characteristics of environmental reviews and related processes (Sadler 1980). A transactive framework for EA panel review is set out in Figure 3. The emphasis is on evaluating the strategic and operational performance of public reviews in relationship to the realities of the decision environment under which these take place, and to clarify the results achieved in transforming this context. Figure

3 indicates two pathways of change — instrumental and educational. The first is achieved more or less directly through policy adjustments; the second is achieved indirectly through shifts in behaviour and attitude.

Such effects, of course, become progressively more diffuse and difficult to trace and determine. A variety of intervening factors, for example, impinge on government response to panel reports and modulate the relationship of recommendations, decisions, and outcomes. More often than not, the responses of initiating agencies tend to be ambiguous or ambivalent. The educational impacts of a public review on attitudes and behaviour are especially difficult to establish, even with carefully executed longitudinal surveys. For these reasons, therefore, transactive evaluation should be seen as a flexible approach that may proceed in stages.

## REQUIREMENTS FOR EVALUATION

The transactive perspective outlined in Figure 3 can be elaborated through lessons from Canadian experience in public participation. For present purposes, these are organized into five requirements designed to meet areas of deficiency identified in previous work (Sewell 1978; Sadler 1980, 1983; Sewell and Phillips 1981).

1. The need to broaden the *basis for evaluation*. Formal evaluations are often conducted from the standpoint of the goals of initiating agencies. Case studies in public participation indicate that these goals often tend to be narrowly conceived and rationalized after the fact, emphasize technical planning ends, and ignore societal objectives. A much broader range of perceived objectives, both pragmatic and idealistic, has been documented when community and interest group expectations are included. The terms of reference of EA reviews, for example, are the subject of differing initial interpretations by panel, proponent, and participants; and subsequently their role and scope are shaped to a certain degree by the tenor and force of interventions. For non-government organizations, moreover, "the process is the product"; i.e., the act of participation is replete with political symbolism, and has important educational and developmental benefits. As a result, the structure and procedures of EA reviews themselves acquire an instrumental value. It is important to bear these broader considerations in mind when evaluating the effectiveness of review processes.
2. *The need to specify criteria for evaluation*. A number of yardsticks for judging the effectiveness of public reviews and similar processes have already been introduced. These can be organized into two basic categories:
  - a) operational concepts (the three r's), which encapsulate standards for technical, consultative, and administrative performance; and
  - b) strategic principles (adaptive and integrative EIA), which describe an approach-cum-process that has gained particular currency and is considered to provide the basis for ecologically (and socially) sound decision-making and development.

In addition, other important process and procedural values amplify the above terms. Effectiveness is used here as an overall descriptor of performance; it refers to the extent to which the process meets the above standards and achieves substantive goals. As such, process effectiveness (E) will reflect a balance of other dimensions of performance such as fairness (f) and efficiency (e), so that  $E = f/e$ . Fairness refers to an open and unbiased process of review, in which all participants have the opportunity to be heard and their views are treated seriously and examined impartially. Efficiency is the relationship between inputs and outputs; in the context of EARP it may be equated with timeliness, cost, and the avoidance of undue delay to the business of industry and government.

These are aggregate criteria, which can be defined by pre-built indicators or specifically measured through a series of questions. For present purposes, the latter option affords a more discriminating approach that can be tailored directly to the objectives of the evaluation (see Chapter 3).

3. *The need for a "multiple perspective" approach to evaluation*. It follows from the discussion of points 1 and 2 that judgements about the effectiveness of public processes will vary with the role and affiliation of participants and observers. A multiplicity of actors are involved in

EARP, bringing with them diverse interests, values, and abilities to pursue them. The pluralist character of the process needs to be explicitly incorporated in approaches to evaluation; it has gone unrecognized to date in the critical literature. With few exceptions, general and case analyses of the formal phase of EARP are written largely from unilateral perspectives and oriented toward ideological advocacy or the promotion of particular positions. This often leads to unrealistic expectations about what the process can deliver.

4. *The need for policy-relevant evaluation*. Multi-perspective evaluation should not be thought of as unconstrained. It is important to relate the different conclusions drawn by actors in the review process to the policy and institutional circumstances of the inquiry. The policy context determines the realities under which EA panels and secretariats work; it indicates, for example, whether there were options available or room to manoeuvre on questions of role and procedure. An understanding of institutional arrangements is important to filter the implications of findings and to draft recommendations for change that are both practical and innovative. Policy and institutional analysis thus provides essential background for arriving at considered judgements about effectiveness, and form an integral element of transactive evaluation (see Chapter 4).
5. *The need for ongoing, independent evaluation*. Whether to commission ongoing or after-the-fact, or internal or external evaluations are important research questions (see Table 2). There are pros and cons associated with any course of action. Much will depend on the intended applications of evaluation and the availability of resources and skills. In general terms, the literature on the field indicates that evaluation should be both independent and continuing. The value of independence, however, may need to be tempered in the light of the requirement for policy relevance. The requirement for continuity in evaluation may also imply the need for tracking by someone within, rather than outside, an organization. It is apparent, for example, that many of the outcomes of EA panel reviews are not discrete, observable impacts but are filtered incrementally in modified form through a complex process of decision-making. They are, therefore, difficult to capture in one post-panel evaluation snapshot. The analogy with the need for continuity in the EIA process, which the evaluation function itself is meant to build, can be reinforced by referring to Figure 1.

## RECAPITULATION

The main points developed in this chapter represent the initial bearings, so to speak, for the evaluation of the Beaufort Sea review.

1. Post-EIA audit and evaluation is an emerging area of inquiry that can help to systematically improve technical and administrative practice and procedure.
2. Because of its profile and precedence, EARP public inquiries are obvious candidates for evaluation; it seems especially instructive to focus on how panels meet the

challenge of coping with uncertainty, encouraging public involvement, and integrating the roles and inputs of participants.

3. Evaluation of public processes may focus on operational or functional performance; each orientation is based on different assumptions and research methods; and transactive evaluation (or process analysis), combining elements of both, is best suited to deal with the dynamic

nature of environmental reviews and draw out their policy and procedural implications.

4. Several requirements for this type of research can be culled from case experience: there is a need for evaluation to be multi-dimensional in focus and approach, to be based on explicit criteria, to be conducted in an independent and phased manner, and to be directed at policy applications.

CHAPTER 3: DESIGN AND CONDUCT OF THE STUDY

The design and conduct of the evaluation of the Beaufort Sea review is described in this chapter. The study terms of reference, outlined in Chapter 1, called for a policy and procedural analysis of the mandate and structure of the review and an assessment of its utility for environmental management and project planning. A transactive evaluation of the process, along the lines laid out in Chapter 2, will focus on the inter-relationships of the components and the realities under which they operated. The purpose, to recapitulate, is to gain a better understanding of the approach taken in this case and the options for its further development.

Figure 4 illustrates the proposed compass of the evaluation and the organization of this report. With regard to the Panel's mandate, the emphasis is on clarifying the rationale, purpose, and value of applying EARP to a regional-scale, preliminary-stage development proposal. Next, the pros and cons of the operational procedures employed for the conduct of the inquiry are analyzed. Finally, a trial balance sheet of the results of the review is drafted. This exercise is undertaken primarily to help clarify the salience of the process-related conclusions and recommendations, rather than as an end in itself.

A checklist of questions is set out below in order to focus the analysis of the three categories identified in Figure 4. This is the first step in the research design, one which corresponds to problem conceptualization. Following is a description of the methods used to gather the data necessary to answer the list of questions. The chapter concludes by recasting the methodology in the broader context of normative and empirical themes of evaluation research.

THE RESEARCH AGENDA

A research agenda for the Beaufort Sea evaluation was developed through consultation with key participants. It is organized in the form of a preliminary list of issues. The questions serve as guidelines to and criteria for evaluation of the effectiveness, efficiency, and fairness of the Beaufort Sea review. As annotated below, the questions are organized to correspond with the categories of performance identified in Figure 4. The sequence of questions should also be indicative of a logical progression of analysis.

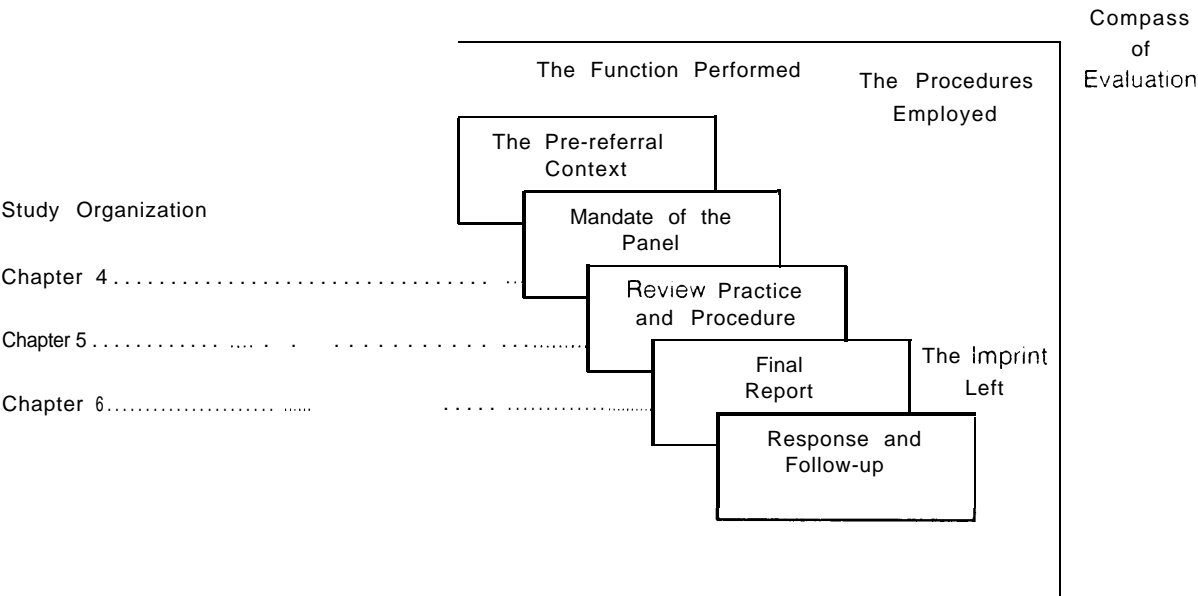


Figure 4. Compass of Evaluation

### 1. The Function Performed

Given the other alternatives possibly available, was EARP the right vehicle for investigating the emerging problems associated with hydrocarbon production and transportation from the Beaufort Sea?

What were the incentives and constraints to using this process?

How did the referral relate to existing trends in the application of EARP to northern development proposals?

Bearing considerations of process capability in mind, what were the pros and cons of the broad mandate given to the Beaufort Sea EA Panel?

Was the Panel given reasonably clear initial guidance regarding the part the review was to play in government decision-making?

How were the terms of reference for the review interpreted by the Panel during the course of the inquiry?

To what extent did the evolving objectives accord with the goals, expectations and positions of other participants?

In retrospect, what was the nature and purpose of the review?

What was its role in government decision-making?

How did it relate to other components for planning and managing hydrocarbon development?

Was the process appropriate to the nature and scale of the ISSUES under investigation?

### 2. The Procedures Employed

Was the information generated by the review process focused on key issues and relevant data?

Were satisfactory procedures employed for scoping and focusing impact analyses?

Were the public sessions structured to ensure that the right information was solicited and scrutinized?

To what extent did the Panel distinguish between significant and unimportant issues at key junctures in the process?

- b) Did the procedures for informing and involving the public foster continued and considered participation, especially by local communities?

Were the methods and techniques of participation tailored to circumstances and to the capabilities of the publics affected by or interested in the proposal?

Were sufficient resources and materials provided in support of public involvement, especially for northern communities?

Was a concerted effort made to try to even the imbalance between proponents and intervenors?

- c) Did the procedures in place for the conduct of the review conform to accepted notions of due process?

- Were people and interests treated Impartially?
- Were public inputs incorporated in a systematic and responsive manner in Panel review and deliberations?
- Did the Panel establish standards for reaching decisions, base its reports on presented evidence, and provide reasons for decisions?

### 3. The Imprint Left

- a) Given the socio-political realities under which it operated, did the Panel effectively discharge its mandate? Did it, in fact, undertake a thorough and credible assessment of the environmental and social considerations of the proposal being examined?

- b) On balance, was the process conducted fairly, i.e., without bias to any one party; and efficiently, without undue delay, bearing in mind the magnitude of the task?

- c) At the end of the day, did the review make an effective contribution to decision-making and specifically to:

- government preparedness to manage hydrocarbon development
- project planning by the proponent(s)
- the capability of communities to cope with development?

## OBTAINING THE DATA

There are no simple answers to the above questions. As previously noted, EARP public reviews are processes into which participants enter with diverse attitudes and leave with different experiences. It follows that process evaluation will need to take account of the range of positions to develop a comprehensive perspective. For practical purposes, this means developing a structured fix on the considered judgments of key actors in the Beaufort Sea EARP.

Several steps and methods were employed to obtain this information.

1. The process began with attendance at a number of community and general sessions in the final round of public hearings held in the eastern and western Arctic. Observation of the proceedings is an undervalued means of gaining insight into the dynamics of interaction. It provides both "field" experience against which later stated responses can be cross-checked and serves to develop perspectives and pretest ideas with participants.
2. Following the completion of the hearing phase of the review, a short-form questionnaire was mailed to approximately 100 participants from the master list of key contacts maintained by the Beaufort Sea EA Panel Secretariat. The questionnaire solicited a range of responses to key aspects of the review process (see Appendix I). It was designed to be answered relatively

quickly and succinctly. Approximately a third were returned, a rate which is considered relatively low for a sample of this kind. The responses, however, were meant to be illustrative rather than representative in the sense of conforming to rigorous sampling procedures.

3. A workshop was organized in Ottawa with a small group of key participants, those who had had sustained involvement in key phases of the review. Not all of those invited could attend, and a major omission was the absence of native participants from northern communities. Fifteen people — representing the initiator, the proponents, other government agencies and intervenor groups — attended the workshop together with a similar number of observers. The purpose of the workshop was to thrash out the major issues associated with the review process and the kind of improvements which could be made with the benefit of hindsight. An agenda for discussion was pre-circulated and position papers were commissioned from key parties (initiator, proponent, and intervenors) in order to encourage structured and focused discussion.
4. The final phase of the evaluation involved monitoring the responses of industry, government, and communities to the Panel report. Over an 18-month period, various formal responses to Panel recommendations were issued by the initiator and the proponents. A more direct and intensive review of community responses was undertaken under the auspices of the Beaufort Sea-Mackenzie Delta Development Impact Zone (DIZ) Committee.

The first three phases of data collection were completed prior to the release of the Beaufort Sea EA Panel report. For process evaluation, this timing is important; it minimizes the bias introduced by reaction to what is contained in the document. The requirement for a post-panel phase of evaluation took much longer than was originally anticipated. Formal response to the Panel report from government

unfolded slowly. In some cases, moreover, it was unclear whether articulated positions were those of individuals or had become departmental policy. More will be said about this and related points in Chapter 6.

## CODA

A basic premise of the present approach is that the conduct of evaluation is as much policy art as social science. This means that a systematic mode of analysis for making value-laden judgements is adopted. The research design, more specifically, reflects two principles:

- the judgements of those directly involved in the review form a major source of guidance on process effectiveness; and
- the perceived successes and shortfalls of the process must be interpreted in relation to the magnitude of the task and the forces at play.

In the final analysis, public reviews are both political and behavioral processes, constrained by precedent and custom and enormously dependent on the cooperation and good faith of participants. While the Panel is in charge, all participants are charged with certain roles and responsibilities. The way in which these are carried out has an important impact on the functional and operational performance of the review. Process evaluation, as envisaged here, involves looking at the Beaufort Sea review as a creative exercise in the “art of the possible,” with a view to spelling out the implications for process development. It is not conducted against a utopian framework or one established by someone who “knows” how the process should work, a form of analysis that is all too prevalent in the critical literature. The approach taken, in conclusion, is empirical, not normative; it stresses the importance of developing pragmatic insight on process effectiveness,

## **SECTION II**

### **THE ANATOMY OF THE REVIEW**

We all have 20/20 vision in hindsight. It is easier to be a critic than a counsellor, an advisor than an administrator, and a participant than a policy maker. These statements, taken together, add up to more than a cliché; they comprise a concept of evaluation. All of the parties with an interest in the Beaufort Sea EA Panel review, no doubt, would have designed and managed the process differently. The real question is whether they could have done it better in the circumstances.

In this section, the anatomy of the review — its function, structure, and relationships — is examined to try to gain perspective on review performance. Chapter 4 examines the mandate of the Panel and the strategy adopted to meet it. Chapter 5 focuses on review practice and procedure. Chapter 6 looks at the utility of the Panel's report.

## CHAPTER 4: ON PANEL MANDATE AND REVIEW STRATEGY — THE POLICY AND INSTITUTIONAL CONTEXT OF THE REFERRAL

From the beginning, it was apparent that the referral of the proposal for Beaufort Sea hydrocarbon production and transportation represented a departure from conventional practice. The Panel was given an exceptionally broad mandate, in terms of both the substantive and geographical scope of the review. And this, in turn, raised important questions about the type of review intended, the suitability of an EA Panel for this purpose, and the relationship of the process to other components of government decision-making. During the course of the review, certain intervenors argued that the terms of reference were ambiguous and ambivalent on these and other critical issues.

Such matters of panel mandate and interpretation with respect to the role and objectives of the review are of more than academic interest. The question of whether the Beaufort Sea review was or should have been fundamentally different from previous EA panel inquiries is one around which revolve other considerations of process, procedure, and practice. An analysis of the mandate of the panel exercise, in intention and execution, is undertaken in this chapter with a view to clarifying aspects of the function performed. To provide background, the discussions here will delve into the context as well as the terms of referral, i.e., focusing on the policy and institutional imperatives as well as implications of the review.

The background to the referral of the proposal for hydrocarbon production and transportation in the Beaufort Sea-Mackenzie Delta Region forms a rich and complex tapestry. It encompasses the main strands of northern decision-making over a period of two decades. Much has been written on this general subject in recent years (e.g., Lotz 1970; Dosman 1975; Science Council of Canada 1977; Keith and Wright 1978; and Canadian Arctic Resources Committee 1985). There is neither the space nor the requirement for more than a brief restatement of the major themes of northern policy and institutional development and their bearing on the matters at hand. This should suffice to trace the circumstances that influenced, first, the Beaufort Sea development proposal and, second, its referral under the federal EARP.

### THE PROPOSAL IN PERSPECTIVE: NORTHERN POLICY AND OFFSHORE EXPLORATION AND DEVELOPMENT, 1960-1980

A capsule history of the political and economic imperatives shaping the proposal for hydrocarbon production in the Beaufort Sea covers the last 25 years. It begins with the "vision of the North" of the Diefenbaker government, the roads to resources policy, and ends with the National Energy Programme (Energy Mines and Resources Canada 1980). The search for oil and gas in the region has been undertaken by

industry and overseen by government. While world market forces have influenced the tempo and scope of activity, public policy for northern development has influenced the broad trajectory. Table 3 summarizes key milestones in the record of decision-making.

### A Comparative Profile of Two Decades

A laissez-faire approach to northern policy predominated during the 1960s, characterized by the more or less unfettered promotion of non-renewable resource development. This can be seen as a continuation of the "colonial" model of northern administration, in which an Ottawa mandarin practised paternalism in native affairs and generosity towards the oil and gas industry. The release of Arctic lands for geophysical exploration in 1961, for example, was followed by the provision of fiscal incentives and favourable leasing arrangements designed to stimulate industrial activity. By the time of the discovery of the Prudhoe Bay oil and gas field in Alaska (1969), the energy industry had already amassed sizable holdings in the North, including tracts of the Beaufort Sea to the edge of the polar ice pack (see Pimlott, Brown, and Sam 1976).

During the 1970s, this single-minded approach to resource exploitation was incorporated into a broader strategy of "balanced development." As initially stated, people, resources, and environment were the main elements of northern policy and harmonizing the objectives for these three areas became the overriding priority of government decision-making (DIAND 1972). In this initiative, the federal government responded to major shifts in contemporary social and political values, notably the increasing concern for environmental quality and native aspirations for self-determination. Both movements began to gather strength at the same time as the Prudhoe Bay discovery decisively altered the way the energy industry viewed the resource potentials of the Mackenzie Delta and subsequently the Beaufort Sea.

### The Precarious Balance of Old and New

Oil and gas exploration, especially when it moved offshore, proved a classic example of the difficulties of reconciling resource exploitation policies inherited from an earlier era with newly formulated objectives for maintaining environmental quality and meeting the needs of northern peoples. Energy projects were, and are, the main engine of economic growth and technological change in the Beaufort Sea-Mackenzie Delta region and, indeed, across the whole North. At the same time, the new ways of life based on the wage economy co-existed uneasily with the traditional native cultures and the

**Table 3**

Northern Decision-making and the Beaufort Sea, 1958- 1980

- 1958 *Vision of the North* manifesto of Diefenbaker government
- 1961 Arctic lands released for geophysical exploration
- 1968 Major discovery of oil and gas at Prudhoe Bay
- 1969 Public tender of Beaufort Sea “workbonus blocks” (approx. one million acres of the offshore released under separate permit)  
First Arctic voyage of S.S. *Manhattan* (repeated 1970)
- 1970 *Arctic Waters Pollution Prevention Act* (proclaimed 1972)  
Amendment of Territorial *Land Act* (1952) to include reference to environmental protection  
*Guidelines for Northern Oil and Gas Pipelines* released by DIAND
- 1971 Territorial Land Use Regulations given force  
Native and public interest groups became formally organized (e.g., Inuit Tapirisat and Canadian Arctic Resources Committee (CARC)).
- 1972 Official statement of federal policy on northern development: *Canada's North 1970-1980*  
The “Immerk precedent”: first artificial island and wildcat well in Beaufort Sea
- 1973 Arab oil embargo precipitated the “energy crisis”  
Federal cabinet approval-in-principle for exploratory drilling for offshore oil and gas  
Council of Yukon Indians presented preliminary land claim (followed by Dene and Inuit Tapirisat, 1976; and Committee on Original People's Entitlement (COPE) and Metis Association, 1977)
- 1974 Environmental Assessment and Review Process established by Cabinet directive (amended 1977)  
Canadian Arctic Gas filed application to build gas pipeline from Alaska border to Zama Lake, Alberta  
Mr. Justice Thomas Berger appointed to conduct Mackenzie Valley Pipeline Inquiry (MVPI) also referred to National Energy Board (NEB)
- 1975 Foothills Pipe Lines Ltd. filed application to build gas pipeline from Mackenzie Delta (included in NEB and MVPI reviews)  
Public Hearings of MacKenzie Valley Pipeline Inquiry (March 1975 – November 1976)  
*Ocean Dumping Control Act*
- 1976 *Energy Strategy for Canada* called for further exploration for frontier oil and gas  
Foothills Pipeline (Yukon) Ltd. filed application for Alaska Highway Gas Pipeline  
Cabinet approved deepwater phase of Beaufort Sea oil and gas exploration
- 1977 *Northern Frontier, Northern Homeland, the Report of the Mackenzie Valley Pipeline Inquiry* recommended moratorium on construction until native land claims settled  
National Energy Board granted conditional certificate for Alaska Highway Gas Pipeline — Yukon Section (*Reasons for Decisions. Northern Pipelines*).  
Alaska Highway Pipeline Inquiry and EA Panel respectively reviewed socio-economic and environmental implications of Alaska Highway Gas Pipeline proposal.  
*New Regulations for Offshore Drilling in the Beaufort Sea* released by DIAND  
Eastern Arctic Offshore Drilling — South Davis Strait, Lancaster Sound Offshore Drilling and Arctic Pilot projects referred for EA Panel Review
- 1978 *Northern Pipeline Act*  
Inuvialuit Land Rights Settlement Agreement-in-Principle signed by COPE and Government of Canada  
Public Hearings and Final Report of EA Panel on Eastern Arctic Offshore Drilling
- 1979 Final Report of EA Panel on Lancaster Sound Drilling recommended moratorium until regional land use issues resolved  
Joint Northern Pipeline Agency – EA Panel review of terms and conditions for Alaska Highway Pipeline
- 1980 *The National Energy Program* introduced Petroleum Incentive Plan (PIP) for exploration of frontier lands  
Final Report of EA Panel on Arctic Pilot Project (transport of liquified natural gas from Melville Island to eastern seaboard)  
Draft Green Paper, *The Lancaster Sound Region: 1980-2000*, introduced regional planning approach (followed by public review phase, 1981, and final document, 1982)  
*Constitutional Development in the Northwest Territories: Report of the Special Representative*

ecology of the resource base upon which they depend. The Beaufort Sea, in particular, is a harsh and hazardous physical environment in which to operate. It is a crucial habitat for the marine mammals that the indigenous peoples of the region use for subsistence and sustenance. Both the risks and the consequences of an accidental oil spill are correspondingly high.

The federal government has essentially followed a dual policy in order to accommodate the demands of industry and the concerns of environmental and native groups. On the one hand, the government played an increasingly active role in sponsoring energy projects through direct investment, infrastructure subsidies and the like. On the other hand, various agencies of state imposed progressively stringent regulations on offshore oil and gas operations. Given these circumstances, it is not surprising that attempts to develop an integrated northern policy have been criticized as inconsistent and ambiguous. The record of decision-making in this period can be organized into three inter-related phases, roughly corresponding with the early, middle, and later 1970s (see Table 3).

### Patterns of Decision-Making in the 1970s

While the decade began with a spate of environmental legislation and guidelines, the process of decision-making remained reactive rather than proactive; it was (and to a large extent still is) driven by the energy development plays of multinational corporations. Oil and gas activity was stimulated by events external to Canada (notably the radical adjustment in the world marketplace which followed the Arab oil embargo of 1973) and was empowered through technological innovation. Exploration in the Beaufort Sea-Mackenzie Delta area both intensified and moved offshore, initially to shallow waters using artificial islands (1973) and subsequently to deeper water using drill ships (1976). From the perspective of federal policy-making, the critical aspect of this progression was the granting of approvals in principle for offshore drilling operations based on technical considerations. When considered collectively, these decisions amount to a pre-emptive commitment to development which implicitly acknowledged the momentum built-up by the oil and gas industry (Lucas and Peterson 1978).

The pattern of decision-making in the mid- 1970s was dominated by a series of applications to build a natural gas pipeline through Northern Canada. It was also, by extension, responsive to the timetable for approval of the U.S. trans-Alaskan system from Prudhoe Bay. The policy implications of the competing proposals for connecting routes through Canada were unprecedented, as was the extent and intensity of planning by industry and review by government. In the end, the proposal by Foothills Gas (Yukon) for an Alaska Highway route was preferred over the application by Canadian Arctic Gas Limited to construct a large-diameter pipeline across northern Yukon and down the Mackenzie Valley, connecting both the Alaskan and Mackenzie Delta gas fields to southern markets. For the first time, a major northern development scheme was halted, largely on the grounds of potential environmental and social impact. The abandonment of the Mackenzie Valley Pipeline, however, generated its own

adverse effects (notably in the town of Inuvik). Equally significantly, the project concept remained alive. It subsequently became incorporated, except for the Alaska tie, as a component of the proposal for hydrocarbon production and transportation from the Beaufort Sea.

Post-pipeline activities by the energy industry centered on the determination of offshore oil and gas reserves in the Beaufort Sea and the High Arctic. The continuing concern over the price and supply of oil resulted in the preparation of *An Energy Strategy for Canada* (Energy, Mines and Resources Canada 1976). Although criticized on environmental grounds, the strategy certainly provided more purposeful policy guidance for the energy sector than was previously the case. National self-reliance became an over-riding goal. It was to be achieved through a series of programme initiatives, including at least a doubling of frontier energy exploration activity by 1980. The principle behind this so-called "need to know" policy was that improved knowledge of the recoverable resources of the Beaufort Sea and other offshore regions would allow the government to properly evaluate the options for development. In practice, this policy worked to channel the resources of the energy industry, freed by the abandonment of a major pipeline project, toward a much expanded multi-component development proposal. This time oil was the product in demand.

At the end of the 1970s, world oil prices were rising sharply and the overall results from increased exploration in the Beaufort Sea appeared promising. While commercial reserves were unproven, the pool of offshore oil was estimated at between 1 and 5 billion cubic metres. The potential of the Beaufort Sea was seen as playing a primary role in reducing the shortfalls in Canadian oil supply which were forecast for the period 1985 to 2000. Based on this assessment of need, a consortium of companies led by Dome, Esso, and Gulf submitted a preliminary development plan for hydrocarbon production and transportation to the federal government.

### A Multi-component Proposal

By any standards, the scenario that unfolded was monumental in design and ramification. A two-phase development plan for the region was outlined, with 1987 as the then target date for confirmation of production. This was to be followed by the construction and operation of a network of oil and gas production platforms and satellite wells, the development of extensive marine and offshore support facilities, and the building of a new transportation system based on an overland pipeline through the Mackenzie Valley and/or a tanker route through the Northwest Passage. Development on this scale would require a capital investment of some \$40 billion and would impinge on nearly all areas of northern activity.

Most important, from a policy standpoint, was the potential effects of the proposal on the federal government's preconditions for balanced development; namely, the maintenance of ecological integrity and the choice of lifestyles for northern peoples. The fundamental worry was (and is) that the magnitude and momentum of the Beaufort Sea development scheme might decisively shift the precarious balance between traditional and modern ways of life, pushing the North firmly and perhaps irreversibly down the path of industrialization and the

wage economy with a gradual foreclosure of the options for renewable resource use. The issues at stake were enormous — virtually amounting to the selection of a future for the region.

## THE REFERRAL IN PERSPECTIVE: INSTITUTIONAL ARRANGEMENTS FOR PROJECT REVIEW AND DEVELOPMENT CONTROL

In May 1980, the Minister of Indian Affairs and Northern Development referred the Beaufort Sea proposal to the Minister of the Environment for formal review. This action precipitated long-standing concerns about the sufficiency of institutional arrangements for northern decision-making, in general, and the capabilities of EARP in particular. When compared to exploration, the prospect of Beaufort Sea hydrocarbon production and transportation was seen, in the parlance of the “oil patch,” as a different play, which called for new rules of the game. As a result, the processes for project review and development control became matters of interest commensurate to the substantive issues under examination.

### Statutory and Discretionary Procedures

Oil and gas development activities in the North throughout the period in question were managed through a complex system of statutes, regulations, and procedures (see Table 3). Environmental regulations governed all phases of exploration, production, and transportation activity in this sector (Hunt and Lucas 1981). These formal provisions were and are supplemented by various discretionary instruments that government agencies may use to examine particular proposals. Paramount authority for their application rests with the Department of Indian and Northern Affairs, but other federal and territorial departments and agencies also have administrative responsibilities for project review and development control. During the 1970s, a plethora of special purpose reviews, task forces, boards, and similar entities were established and exerted indirect or occasional influence on decision-making for northern development.

The ad hoc use of advisory commissions of inquiry and environmental assessment panels to review large-scale energy proposals became a particularly notable feature of northern institutional development in the this period (see Table 3). Such processes provided a major avenue for public involvement. Much critical attention, accordingly, was and is given to their role, scope, and effectiveness. Of particular concern are the jurisdictional overlaps between the review processes operated by ad hoc commissions and EA panels and by regulatory agencies such as the National Energy Board (NEB) and the Territorial Water Boards. The review of the Canadian Arctic Gas and Foothills (Yukon) pipelines, for example, involved the NEB (which dealt, *inter alia*, with technical and economic aspects) and the Mackenzie Valley Pipeline Inquiry (which focused on the environmental and social aspects). Subsequent reviews of the social and environmental aspects of the Foothills Yukon application were respectively conducted by the Lysyk Commission and by the Alaska Highway Pipeline EA Panel (separately and jointly with the Northern Pipeline

Agency). While this multiple scrutiny is exceptional, the separate investigations of northern energy proposals by the NEB and EARP Panels has become standard practice (Rothwell 1985).

The result of this duplication is to create uncertainty and frustration for project proponents and potential intervenors alike. It is not always clear in advance how decisions will be made on certain energy projects, what processes will be followed to review applications, and, consequently, who will be allowed to participate in hearings and in what way. These uncertainties during the period in question were reinforced by the sweep of constitutional evolution in the North, the devolution of powers to the territorial government, and the negotiation of native land claims (see Table 3).

### The Application of EARP

During the period in question, the track record of EARP panels is of particular interest. As Table 4 shows, six northern development proposals underwent formal public review, and five of these were energy projects. The considerable evolution in the nature and scope of the process is also exemplified. In this period, several fundamental concerns were expressed about the adequacy of EARP in relation to northern developments. These included the absence of both a statutory base for the process and formalized procedures for public review (Lucas and Peterson 1978; Emond 1978). Other criticisms focused on the relationship of EA panel review to the broader structure of governmental decision-making, and particularly on the lack of a coherent policy context to guide impact evaluation (Rees 1984).

All of the northern EARP panels encountered difficulties in this respect. Lancaster Sound offshore drilling provides the classic illustration of the dilemma created by the uncertainties of northern policy. The report of the Lancaster Sound EA Panel (1979) found that a meaningful project assessment could not be conducted in isolation from the broader issues that affect resource allocation and use. In response, DIAND, the initiating federal agency, commissioned a regional study to establish a comprehensive management strategy for Lancaster Sound (Dirschl 1987).

With the Beaufort Sea referral, DIAND took another tack, one roughly between the Lancaster Sound Regional Study and the more specific project assessments undertaken by previous EARP panels. The multi-component Beaufort Sea Hydrocarbon Production and Transportation Proposal was of an order of magnitude greater than other northern energy and transportation developments that had undergone EA panel review. Indeed, it may be envisaged as a regional development scenario that linked together all of the types of projects previously examined under the process (see Table 4). Setting this background against the criticisms levelled at EARP, it is reasonable to enquire further into the rationale for referral.

### The Rationale for Referral

Several inter-related considerations appear to have influenced the decision to refer the Beaufort Sea Development Plan for

review by an EA Panel. First, there was precedent for this action (Table 4), which is important from a bureaucratic standpoint. Second, the previous application of the process had made useful contributions to federal decision-making; more so than is realized by reading the critics of EARP (Wallace 1986). The contemporary perception of the record of the process by DIAND officials, who referred the proposal, certainly appears to have been more or less positive (see also Waddell 1981).<sup>3</sup> At the time of the referral, finally, there were few other tried and tested alternatives available.

It was not until one year after the referral of the Beaufort Sea proposal that the federal Cabinet approved the Northern Land Use Planning Policy. Efforts were underway to develop a more comprehensive, regional approach to resource allocation and management in Lancaster Sound for reasons already noted. Little progress, however, had been made toward regional planning in the Beaufort Sea-Mackenzie Delta area. A previous attempt at developing this type of process had foundered under circumstances which suggest the option might have been a long haul (Rees 1978). This may help explain why DIAND did not attempt to develop a similar initiative in advance of the Beaufort Sea referral. In addition, exploration had been underway in the Beaufort Sea-Mackenzie Delta for much of the previous decade. The questions of resource use allocation and the opportunity costs of energy development had, in effect, been decided reactively and incrementally by technically-based regulatory decision-making. Further reliance on this instrument, however, was clearly inappropriate with respect to hydrocarbon production and transportation.

On the other hand, the Department of Indian and Northern Affairs also appeared to be reluctant to entertain the idea of a Commission of Inquiry. The reasons why the Mackenzie Valley Pipeline Inquiry, for example, became a benchmark process for native organizations and environmental interest groups were precisely the same ones likely to induce concern on the part of industry and caution among senior bureaucrats. The authority and force of the final report derailed a mega-project and circumscribed the usual freedom to manoeuvre in decision-making so prized by politicians and their senior advisors (Berger 1977). Aside from politics, there were pragmatic reasons for preferring an EA Panel to a Commission of Inquiry. EARP, after all, is meant to be a flexible planning tool applied early in the decision-making process before irrevocable commitments are made. On the surface, this was entirely consistent with the status of the Beaufort Sea hydrocarbon production and transportation proposal. It was also apparent, however, that the experiences of the Mackenzie Valley Pipeline Inquiry influenced both the mandate of the Beaufort Sea EA review and the conduct of the process by the Panel.

## THE TERMS OF REFERENCE AND THEIR INTERPRETATION

The Beaufort Sea EA Panel was given a sweeping mandate by the initial letter of referral (July 1980) and subsequently in the terms of reference (released June 1981 and amended August

1983). As a result, questions were inevitably raised about whether this was a new type of review, different in kind rather than degree from previous panel investigations. In this context, it is also of interest to consider the extent to which the function initially envisaged differed from the one actually performed. Several intervenors and observers, for example, criticized both the terms of reference for giving insufficient guidance to the Panel about the role the review was expected to play and the efforts made by the Panel to subsequently clarify its mandate. Whose expectations are being met is the critical factor in the evaluation of whether the Beaufort Sea review was a missed opportunity, mission impossible, or a case of mixed signals.

The nature of the mandate of the Beaufort Sea EA Panel and the different perspectives on the purpose of the review are explored here on several levels. First, the stated terms of reference are examined in comparison to those given to previous EARP panels. Second, the implicit shaping of the purpose of the review by the approach taken is examined, i.e., the extent to which function followed form rather than vice versa. Third, the amendments made by the Panel and the initiator to the terms of reference and their bearing on the role of the review are discussed.

## A Comparative Analysis

The terms of reference for the Beaufort Sea review differed from those given to other northern EA panels in several important and inter-related respects.

1. The scope of the inquiry was sweeping in substantive and geographical coverage. It encompassed all activities north of 60° bearing on the proposal. The EA Panel was asked to identify the major biophysical and socio-economic effects of the proposal and to recommend ways and means of dealing with them. Governmental capacity to control Beaufort Sea oil and gas development was explicitly included within the purview of the Panel.
2. The timing of the review coincided with an early stage in the project development and approval cycle. As stated in the terms of reference, the information gathered by the Panel was to be directed toward the identification of major issues and concerns. It was also recognized that a certain amount of design detail would be necessary to properly assess the environmental effects and risks of the proposal; especially where new and unproven technology would be used.
3. The role of the Beaufort Sea review appeared relatively open-ended in relation to subsequent phases of government decision-making. A comprehensive assessment of the proposal was expected to assist all participating agencies to deal with the conclusions and recommendations of the Panel, including requirements for further review. In other words, the exercise was envisioned as a catalyst to encourage government, industry, and communities to come to grips with the policy and institutional issues associated with the management of Beaufort Sea oil and gas development.

<sup>3</sup> This assessment is also based on participation in discussions between senior DIAND and FEARO officials on EARP reform in 1984.

**Table 4**

EARP Panel Reviews of Northern Development, 1975-1981

Proposal	Initiator	Date Completed	Main Recommendation	Project Status	Policy & Procedural Observations	Other Reviews	Examples of Follow-up Studies
1. Alaska Highway Gas Pipeline Project, Yukon Territory	DIAND	1977 1979 1981  1982	interim acceptance EIS deficient proponents preferred route rejected terms and conditions finalized	Not built	– multi-phase review encompassing routing & planning considerations  – short lead-time for initial investigation	Yes, NEB 1979 review jointly conducted with NPA	Davidson 1987
2. Shaskwak Highway Project, Yukon Territory/British Columbia	DPW	1978	Acceptable with mitigation	Partially built	– social impacts considered for the first time – principle of intervenor funding supported – interagency review committee established to coordinate implementation	No	Spenser 1987
3. Eastern Arctic Offshore Drilling — South Davis Strait Project, Northwest Territories	DIAND	1978	Acceptable with mitigation	Completed	– regional approach taken – emphasis on requirements for contingency planning and financial compensation – importance of community preparation and participation underlined	Yes, NEB	King and Nelson 1983
4. Lancaster Sound Offshore Drilling Project, Northwest Territories	DIAND	1979	Defer	Moratorium	– demonstrated the constraints on project assessment in the absence of prior resolution of policy-planning issues – questions of safety/risk considered.	No	Jacobs and Fenge 1986
5. Arctic Pilot Project, Northwest Territories	DIAND	1980	Acceptable with mitigation	Abandoned	– emphasis on importance of local benefits from project operations – focus on research and monitoring for impact management	Yes, NEB	Bregha 1982
6. Norman Wells Oilfield Development and Pipeline Project, Northwest Territories	DIAND	1981	Acceptable with delay of start-up	Built	– dealt with pre-project preparation and follow-through – attention given to local training opportunities	Yes, NEB	Jakimchuk 1987

See also: Waddell (1981), Reed (1987), Wallace (1986)

A closer look at the mandate of the Beaufort Sea EA Panel indicates three particular characteristics that give the impression of a functional change in the review process (and may thus help explain the high expectations of its potential role held by some parties).

1. The first precedent was the co-equal status given to social and community concerns in the terms of reference. It is suggestive of a more value-oriented, less technically-based process than in previous northern reviews, when social considerations had been introduced largely through the force of citizen intervention rather than by design.
2. A second seed of potential change was sown by the discretion given to the Panel to request position statements by participating government agencies on the bearing their policies and programmes might have on the proposal and vice versa. This provided an explicit entry point for clarifying the policy context that had clouded previous northern reviews.
3. Finally, the extended time and space boundaries of the proposal gave an elasticity of purpose to the Beaufort Sea review. More than a concept, less than a specific project, the regional development scenario for hydrocarbon

production and transportation occupied an uncertain and fluctuating middle ground substantially different from that occupied by previous panels.

Each of the precedent-setting aspects of the terms of reference was the basis of later difficulties of role definition by the Panel; not least because they provided a latitude for interpretation that was exploited by intervenors (quite legitimately, it should be added). It is not clear whether these potential problems were perceived at the time of drafting the letter of referral and the terms of reference. The predominant view, in any event, seems to be that the mandate of the review contained a degree of ambiguity but gave sufficient direction for the Panel to begin its task.<sup>4</sup>

### A Choice of Strategy and Role

With hindsight, the crux of the problem of role interpretation revolved around the preliminary form in which the proposal was referred. An early review of the proposal was considered by many participants to be a good idea *in principle* (68% of the questionnaire respondents held this view). Opinion was more divided on whether the proposal was sufficiently developed to permit adequate review. For example, 25% of the questionnaire respondents said it was; 46% had reservations; 21 % thought the proposal was insufficiently developed; and 7% expressed no opinion. Depending on the perspective held, the review may be seen as either timely or premature.

For the Panel, the fundamental question was how to address the major issues of oil and gas development at an appropriate scale of resolution. The selection of a strategy of analysis, in fact, more or less predetermined the role of the review and the relationship of subsequent phases of government decision-making. Once the Panel opted for the preparation of a comprehensive environmental impact statement (EIS), the die was cast in favour of a conventional purpose as well as process of review. It pointed down the well-marked road of establishing terms and conditions for project approval; although there were interesting diversions *en route*, occasioned by the sheer scale and scope of the exercise.

An important concern surrounded the foreclosure of other role options by the choice of strategy. The Beaufort Sea Alliance and other intervenors argued that industry's proposal was preemptive and that the review should have given serious consideration to alternative forms of development based on renewable resources. By extension, the Panel's reliance on an EIS-based approach further limited the scope of the inquiry. Instead of the EIS, the Alliance argued that the Panel should have struck a true course of concept assessment; i.e., focusing on the review of strategic policy choices and options and, presumably, on the questions of need and alternatives. This argument has its own logic and considerable merit for future application (see Chapter 7).

It was not, however, a practical prescription *in the circumstances*. A concept assessment as described by the Alliance would follow a well-known line of intervention in environmental reviews in which the policy context becomes the focus of investigation rather than the means of focusing it. Such an adjustment would have taken the Beaufort Sea EA Panel into an arena that government agencies regarded as off-limits (and still do). Given DIAND's position on the purpose of the review (reported below), it is obvious that the initiator was not prepared to entertain this type of review.

This is not to say that the EIS approach was necessarily appropriate. The confidence that the Panel placed in a conventional, technically-based strategy to discharge a value and policy-laden mandate was presumably a calculated risk — given the criticisms of the day of the underlying methodology (e.g., Holling 1978; Munn 1979). Whether the confidence was justified or not is a subject to which we will return in Chapters 5 and 7. The main point for note here is that the choice of strategy, whatever the reasons, was the key to the function and structure of the review.

### Final Revisions

The revisions to the terms of reference that took place after the Panel started down the EIS path were largely fine-tuning when considered in relation to the choice of approach. In the circumstances, the process by which the revisions were undertaken was as important as the results. For the first time, terms of reference for an EA review were subject to public scrutiny and comment. Several amendments were made to the mandate on the basis of inputs received at the Draft EIS Guidelines meetings (see Chapter 5).

First of all, the initiator's position on the function of the review became clarified in DIAND's response to the Draft Guidelines. The Department warned the Panel to steer clear of recommendations on the overall acceptability of the proposal (i.e., go vs. no go). Such a determination, it was noted, could only be made in the context of the National Energy Programme, with its predominant goal of national self-sufficiency. The Panel, in effect, was directed toward consideration of "how to" questions and was enjoined from becoming involved in "whether to" issues, i.e., the broader trade-offs associated with project justification and approval-in-principle.

Oil and gas *exploration* was not within the initial mandate of the Panel. The terms of reference requested the Panel to take this phase of development activity "into consideration" but not to subject it to detailed assessment (on the grounds that existing review mechanisms were already in place for this purpose). Whether this clause restrained the Panel from capitalizing on the experience gained during the exploration phase, as some observers claim (e.g., Rees 1984), is questionable. It could just as easily be argued that the directive allowed the Panel to dredge the data on the ecological and social effects of exploration and to factor the information into its own deliberations.

What soon became apparent, however, was the artificiality of the distinction between exploration and production. This point was exemplified by the conflict over the proposal of Gulf

<sup>4</sup> Of the questionnaire respondents, 43% held this view; 21 % considered it was partly the case, 18 % felt the direction was insufficient; and 18 % gave no opinion. The participants at the Ottawa Workshop considered that it was reasonable to expect the Panel to Clarify the terms of reference during the course of the inquiry.

Canada (one of the proponents) to locate a port and supply facility on the north Yukon coast to support its exploration activities (Fenge *et al.* 1984; Sadler 1987b). First, there was the question of whether the proposed base would provide the nucleus for subsequent expansion during oil and gas production — in which case it would come within the review of the EA Panel. Second, the proposal illustrated that exploration was a significant activity in its own right, adding to cumulative impacts in the potential production zone. At the request of the Panel, the terms of reference were amended to include this relationship.

A second revision to the terms of reference requested by the Panel was that residents of Alaska and Greenland be able to communicate either in writing or at hearings in Canada. Beaufort Sea hydrocarbon production and transportation may have potential impacts on trans-boundary marine and terrestrial mammals, notably the bowhead whale and the porcupine caribou. Despite the incorporation of this international dimension into the Beaufort Sea review, relatively little input from Alaska or Greenland residents was received. As a result, perhaps, the subsequent discussion of this aspect by the Panel was muted.

Finally, the Panel placed a self-imposed limit on the scope of the review which was quite fundamental: it excluded native land claims from specific consideration. This delimitation subsequently became a bone of contention. On the one hand, the Panel had a responsibility to make the review manageable and clearly believed that opening the floor to a discussion of land claims was a short-cut to the opposite effect, especially since there were other forums for this purpose. On the other hand, land title is the context within which the indigenous peoples assess the benefits and costs of pending change and is inextricably woven throughout all discussion of northern development. Given this reality, the Panel left itself open to criticism that native groups were constrained from identifying the major concerns and issues in terms which were most important to them (MacLachlan 1984). It is hard to argue against this position, and a qualified place for discussing the relationship of land claims to Beaufort Sea development may well have been in order. In the final analysis, the key to resolving the pros and cons of this argument lies in review practice: in how closely the Panel listened to native people. This theme is taken up in the next chapter.

## ROLE AND MANDATE IN RETROSPECT

### The Policy and Institutional Realities

1. By any standards, the proposal for hydrocarbon development in the Beaufort Sea-Mackenzie Delta was monumental in its scale and potential impacts on northern resources, peoples, and the economy. It represented the culmination of two decades of federal energy policy; coloured by contradiction and characterized by conflict between development activities, environmental values, and native aspirations for self-determination.
2. Public policy issues were interwoven with reservations about the utility and credibility of the EA review process,
3. The criticisms levelled at previous northern inquiries became written large with the referral of the Beaufort proposal because it was an order of magnitude greater than previous energy projects which had undergone assessment.
4. The policy and institutional context exemplified, in capital letters, the long-standing dilemma of northern decision-making, whereby impact-related concerns about specific projects become recast into fundamental and competing visions of the future of the region. In the case of the Beaufort referral, the issues at stake clearly represented an important watershed in the relationship of modern and traditional lifestyles and thus constituted a major test of government policies and institutions for achieving balanced development. Once this is recognized, the magnitude of the task facing the Panel comes into much sharper focus.

### The Referral Decision

4. On balance, an EA panel review was arguably the most appropriate of the readily available instruments for dealing with the Beaufort Sea development proposal. Existing regulatory mechanisms were obviously insufficient for this purpose; there were pragmatic (as well as political) constraints on another Berger-style commission of inquiry; and the northern land use planning programme was still being drafted.
5. The Beaufort Sea referral was consistent, in principle, with the stated purpose of EARP as an early and flexible planning tool. It reflected and extended the trend of previous northern reviews toward a broader role and scope of investigation.

### The Panel's Mandate

6. The Beaufort Sea EA Panel was given, in actuality, a mandate of unprecedented scope. It was expected to review the biophysical, socio-economic, and policy-management implications of a proposal which could well shape the course of development for the entire North. This proposal, moreover, was in a relatively early stage of definition which greatly compounded the task of assessment (by the proponents) and review (by the Panel).
7. The terms of reference for the review were characterized by a certain degree of ambiguity and ambivalence with respect to its role and relationship to government decision-making. According to most participants, however, the initial direction given to the Panel was sufficient for it to begin its work and to exercise a reasonable degree of independent discretion in charting an appropriate course.
8. Subsequent interpretations by the Panel led to the clarification of the mandate and reduced the uncertainty that had worried both proponents and intervenors alike. This process, however, took a considerable period of time; revised terms of reference were not issued until three years after the letter of referral was received. Even given the

difficulties of public closure of an open-ended mandate, the efficiency of the process was seriously questioned by many participants.

9. The Panel's key interpretations of its mandate involved excluding native land claims from discussion, including the cumulative impacts associated with the relationship of exploration and production activities, and gaining Alaska and Greenland perspectives on trans-boundary matters. Exclusion of land claims remained a contentious point with native organizations throughout the review.

### The Function of Review

10. The choice of an EIS-based strategy shaped the function of the review along conventional lines of attaching terms and conditions for project approval and management.

Whether this approach was appropriate to the mandate is another question (which is pursued in the next chapter and taken up again in the final section). It seemed to be in accord, however, with the expectations and positions of most participants.

- 11 At the end of the day, what kind of review was this? It has become commonplace to refer to the Beaufort Sea as a "concept review." This, however, is only one element of what was a hybrid process: part cumulative impact analysis, part policy and programme evaluation, and part project-specific EIA and SIA. In the final analysis, the Beaufort Sea mandate stretched the conventional panel review process to its limits. This may well have been the last replay of EARP as a substitute for, rather than supportive of, the integrated policy planning and management processes which are necessary to reconcile environment, peoples, and development in the Canadian North.

## CHAPTER 5: REVIEW PRACTICE AND PROCEDURE

The Beaufort Sea EA Panel review formally extended from the date of referral (July 1980) to the submission of the Final Report (June 1984). During this period, the Panel undertook what some observers consider to be the most comprehensive impact analysis and public review yet undertaken in Canada. A chronology of the main events and activities is set out in Table 5. This illustrates both the distinctiveness and continuity of the process compared to previous northern reviews. Operational adjustments to the structure and style of the process were partly a reflection of the expanded function of the review.

In this chapter, the emphasis will be on the innovations in procedure made during the course of the Beaufort Sea review. The term innovation is interpreted broadly to include extensions of the usual practice, as well as the adoption of more novel procedures. An example that falls within the first category is the dual organization of community and general sessions to review the EIS. By contrast, the holding of a pre-hearing conference and the opening of a local office by the Panel Secretariat were undertaken for the first time in the history of the Environmental Assessment and Review Process. Students of public participation will, of course, recognize that the use of such procedures is standard practice in other inquiry or consultative processes.

For purposes of analysis, the following phases of Panel operations are of particular interest:

- the issues seminar, which may be seen as an attempt at scoping;
- the organization of the Panel and its Secretariat, including the extensive employment of an array of technical specialists;
- the initial phase of public consultation and community preparation, including the provision of intervenor funding by the initiator;
- the drafting and finalization of EIS Guidelines, notably through public scrutiny and comment;
- the submission of the EIS by the proponents (plus supporting documentation on policy positions by government agencies) and the response by the Panel;
- the post-EIS analysis of issues undertaken by Panel staff, which served as a basis for internally focusing the remainder of the review; and
- the extensive round of public meetings to evaluate the EIS and related information, including the dual organization of community and general sessions.

**Table 5**

### Chronology of the Beaufort Sea EARP

July 1980	Minister of DIAND referred the Beaufort Sea proposal for formal review
November 1980	FEAR0 "issues seminar" held in Calgary
January 1981	Minister of the Environment appointed seven-member EA Panel
June 1981	Terms of reference released; draft EIS guidelines issued by Panel
August 1981	Intervenor funding program established
October 1981	"Operational Procedures" announced by Panel. "Information Survey — Kinds and Sources for the Environmental Assessment and Review Process" also circulated (updated in May 1982)
November — December 1982	Public meetings on draft EIS guidelines
February 1982	Final EIS guidelines circulated by Panel
April 1982	Panel <i>Interim</i> Report submitted to Minister of the Environment
July — September 1982	Community workshops and meetings conducted by Panel secretariat
November 1982	Proponents' submitted 7-volume EIS; 90-day public review period began
January 1983	Statement on "Where the Panel is Going" and "Operational Procedures" released
March 1983	Statement of Deficiencies issued to proponents by EA Panel
June 1983	EIS Supplementary Information filed by proponents
August 1983	EIS accepted as sufficient document by Panel
	Revised terms of reference for the Panel issued
September 1983	Pre-session conference held at Yellowknife
December 1983	Public hearings, community and technical sessions, held across North and in Calgary and Ottawa
June 1984	Final Report submitted by Panel
July 1984	Final Report released by responsible ministers

## THE ISSUES SEMINAR

A focal event of the start-up period of Beaufort Sea review process, subsequent to the letter of referral and prior to the appointment of the full Panel, was the issues seminar held in Calgary (November 1980) under the auspices of FEARO. The stated purpose of the meeting was to gain a better understanding of the review and of the initial plans of the proponent, and some idea of the issues that were important to potential participants. It was chaired by the chairman-designate of the EA panel (John Klenavic). His concluding remarks place the purpose of the seminar in perspective:

*This is not a Panel meeting; it is merely the start on a process which we hope will lead to a more systematic and thorough review than some people feel we have been able to do in the past.*

The issues seminar was important because it represented an attempt to incorporate the practice of scoping within the panel review process. Scoping is one of the procedural foundations of the U.S. system, where it is widely considered to lead to more efficient and effective EIA (U.S. Council on Environmental Quality 1980). Under EARP, this approach was an implicit rather than explicit element. The past reliance on the shotgun approach, the preparation of a long, undifferentiated list of concerns for inclusion in the EIS, is a recipe for a poorly focused and hence ineffective and inefficient process. For projects undergoing public review, there is evident benefit from an early and open process to determine which issues are significant and to whom. This was certainly the case in the Beaufort Sea inquiry, in which a complex proposal was referred partly in concept form.

Given this background, the procedure followed to obtain input on issues, the quality of the interaction among participants, and the results achieved by the seminar warrant careful scrutiny. The structure was straightforward. A preliminary list of issues was tabulated by the Panel Secretariat on the basis of consultation with potential participants in the review process. These were intended to provide starting point for further discussion. A one-day public meeting format was followed. Much of the time was taken up with a presentation by the proponents, followed by technical comments from government agencies.<sup>5</sup>

What could be realistically achieved during such a relatively unstructured one-day exchange of views? The organization of the seminar encouraged the reiteration of concerns rather than the clarification of issues. As a low-interaction forum, the seminar could not be expected to effectively sort out questions of significance. Such matters only came into perspective near

the end of the seminar. The accompanying statements illustrate that for several participants at least, the seminar was not helpful in advancing their understanding of the issues. Equally clearly, the Chairman, speaking on behalf of FEARO, felt he had obtained what he had come for.

The idea behind the issues seminar was an excellent one, well worth further development. All participants at the Beaufort Sea Evaluation Workshop concurred on the potential of the exercise. It was also agreed, however, that this was realized only to a very limited degree. The issues seminar had relatively little impact on the subsequent phases of the review and on future participants, less intensively involved in the process. Ninety percent of those responding to the evaluation questionnaire, for example, held no opinion at all about the utility of the issues seminar for improving understanding of the proposal, the process or the participants.

## PANEL ORGANIZATION

The organization of the Panel as a functional entity had a direct bearing on the style and effectiveness of the review. Under consideration here is the composition and operation of the Panel, its secretariat, and the relationship between them. From the outset, the task of Panel assembly and the recruitment of technical support staff became a more arduous task than was initially anticipated. A detailed account of the process of selection and the criteria used in striving to ensure independence and balance has been written by the Executive Secretary (Marshall 1986). There is no need to repeat the details here, except to note that the seven-member Panel was unique in size and composition.

It was the first northern panel to be composed entirely of non-public servants. While the Panel encompassed an undoubted diversity in qualifications and northern experience, there was a potential down-side. Were seven members going to be able to forge a consensus on complex and controversial issues? Reaching agreement becomes progressively more difficult as more perspectives and personalities have to be mutually accommodated and reconciled.

The Secretariat, under the direction of the Executive Secretary, provided continuing support for all aspects of the Panel's operations, including process development as well as technical analysis. This group, itself larger than previous secretariats, was reinforced by a sixteen-person complement of technical specialists. Their role was to provide independent expert advice to the Panel and thereby extend its areas of scientific competence. As part of these responsibilities, technical specialists were expected to question proponents and intervenors during public sessions. By arrangement with the Secretariat, technical specialists were also available for consultation with all review participants to answer questions and clarify issues. All the reports submitted by technical specialists to the Panel (e.g., critiques of aspects of the EIS and supporting documentation) were to be made public.

<sup>5</sup> The timing and location of the issues seminar inevitably meant that participants from governments and industry predominated. FEARO, however, made provision for representatives from interest groups and communities to attend. As the transcripts of the seminar indicate, this was sufficient to ensure that alternative views were heard.

### Selected Perspectives on the Issues Seminar

*I am no further ahead as a result of the last few hours that I spent here than I was when I started.*

*I was hoping . . . on the basis of this meeting that we would be able to resolve some of the issues that would be possibly more important than others so that we don't get a generic check list for an EIS preparation. B. Smiley, Institute of Ocean Sciences (p. 90)*

*I, for one, have had some difficulty interpreting what an issue is, and I think that others here may be in the same boat. . . What we've been talking about here are primarily concerns, and my understanding was we were going to be dealing with issues. And I'd like some clarification from the*

*panel [sic] on this, what kind of guidelines that they anticipate that . . . the industry proponents are going to receive. A. Milne, Dome Petroleum (p. 57)*

*... we already have a preliminary indication of issues and I think the weight of conversations and the number of people speaking today has given us some further direction.*

*... this is not a panel meeting; it is merely the start on a process which we hope will lead to a systematic and through review later than some people feel we've been able to do in the past. J. Klenavic, FEARO, (p. 91,92) transcript of the Issues Seminar, FEARO 1980.*

The scale and intent of this activity went well beyond that entertained in previous Panel reviews and the contribution of technical specialists to the Beaufort proceedings has several implications for future practice. In general terms, the majority of participants at the evaluation workshop appeared to hold a positive view of the role played by technical specialists. At the same time, there was a widespread perception that the potential of this group was not fully realized at key junctures during the review process. This was especially the case during the final round of public meetings on the EIS.

## PUBLIC INVOLVEMENT AND COMMUNITY PREPARATION

The Beaufort Sea review was comprised of a number of formal opportunities for public involvement that were preceded and interspersed by a series of activities to encourage widespread participation. Several ongoing programmes were established to provide information and to assist local communities and interest groups to prepare and present their views to the EA panel. It is these "background fundamentals," rather than hearing-related involvement procedures, which are the focus of interest here. They may be envisaged as the participatory cement of the review structure, reinforcing and binding the "building blocks" of the public meetings.

### Inform and Involve Procedures

From this standpoint, the first and most important steps were those taken to inform and involve northern residents in the process. Early in the review, a regional office was opened in Inuvik to coordinate public involvement and community preparation. A resident of the Beaufort area (Roger Gruben) was hired to run the office and communicate with local communities. With support from secretariat staff, he undertook an active programme of formal and informal meetings with community leaders and residents to familiarize them with the review process and to encourage their participation.

This activity was complemented by several other channels of liaison. Local "field workers" were placed in several communities. At a regional level, the Beaufort Sea Community Advisory Committee and the Mackenzie Delta Regional Council provided important conduits for circulating information and relaying concerns back to the Panel Secretariat. In addition, the proponents themselves undertook an extensive programme of community relations to explain the proposal and its potential effects (which, by most accounts, was well received by residents).

All of the above groups, supplemented by resource people from participating government agencies, also took part in a number of community workshops. Sponsored by the Panel, in response to problems identified in its Interim Report, the workshops focused on community development themes bearing on the Beaufort Sea EA review and not just on the proposal and the process. During 1982, for example, workshops dealt with methods for locally-based participation, survey and planning, and reviewed the EIS.

The scope of activities undertaken to inform and involve northern residents has some important procedural implications. It is suggestive of a more imaginative use of consultation techniques, extending beyond the reliance on public meetings characteristic of previous EA panel reviews. Equally impressive was the scale of the effort put into fostering participation by local communities.

An important supplement to this activity was the development of a public file, backed by a survey and subsequent update of the kinds and sources of information necessary for an effective review. The public file was an annotated index of all the material submitted to or distributed by the Panel. It was organized so that all review participants could locate or gain access to necessary information. Public files were located in four northern locations (Inuvik, Whitehorse, Yellowknife, and Frobisher Bay) and three southern centres (Vancouver, Calgary, and Ottawa). Copies of documents were available on request and there was reportedly a steady demand for information. The introduction of this service appears to have been a worthwhile systematization of past practice.

## Adequacy of Information

The information base for the review was generally considered adequate for the purpose of involving the public and preparing communities. Some important differences were apparent, however, in the appraisal and rating of different components. A detailed breakdown is given below of the views of questionnaire respondents:

### About the Process

Over three-quarters considered enough information was available (11% expressed no opinion).

The quality of the information was rated as good by 46%, sufficient by 36%, poor by 3%, and not rated by 13%.

Each step of the process was clearly explained to the satisfaction of 57%, was partly clear according to 25%, and not clear to 7% (11% expressed no opinion).

### About the Proposal

Only one-third of the respondents thought that enough information was provided by the proponent. Another one-third held mixed views, and one-quarter thought that not enough information was available (11% expressed no opinion).

The information was reasonably clear according to 39%, clear in part for 28%, and not clear to 21% (11% expressed no opinion).

The information was the right kind according to 28%, partly useful in the view of 32%, and the wrong kind for 32% (7% expressed no opinion).

### iii) About Government Policies

Less than one-tenth of respondents considered enough information was provided, approximately one-third held mixed views, and two-fifths thought the information was insufficient (one-fifth expressed no opinion).

The information was reasonably clear according to 18%, partly clear according to 28%, and unclear to a further 28% (25% expressed no opinion).

The information was the right kind according to 14%, partly useful to 28% and the wrong kind for 36% (21% expressed no opinion).

## Intervenor Funding

If information is the raw material for participation, the provision of intervenor funding is seen by communities and interest groups as the enabling factor which permits its translation into a well-argued case. The provision of a programme of intervenor funding for the Beaufort Sea Panel review was not, in itself, a unique development. However, the scale and extent of disbursement represented a major extension of previous practice. During the course of the review, approximately \$1 million was distributed among local communities, municipal governments, and native, environmental, and business organizations. The general consensus among the participants who attended the Beaufort Sea evaluation workshop was that

the financial support (made available by DIAND and administered through an independent committee) allowed these groups to make a more sustained contribution to the process and press their case more vigorously than would have otherwise been the case.

Less unanimity exists on questions that are perhaps more to the point; namely, whether the money was well spent and targeted or realized dividends through the calibre of interventions. Such questions have been the subject of separate review. They are not pursued in detail in this evaluation, except to note the differences of opinion on the contribution of intervenor funding to the quality of review ran along sectional lines (e.g., proponent, environmental interest group, and regional organization). This confirms, in turn, the value of undertaking an independent and impartial analysis of the experience with intervenor funding in the case of the Beaufort Sea Panel review. The potential role of intervenor funding to improve process performance seems widely agreed to; the particular benefits of its application require more discriminating evaluation.

## DEVELOPMENT OF EIS GUIDELINES

The first major activity undertaken by the Beaufort Sea EA panel was the development of Draft *Guidelines for the Preparation of an Environmental Impact Statement* (36 pages plus appendices). It may be seen as a continuation of the scoping process begun at the (pre-panel) issues seminar. Under the EARP, EIS Guidelines are meant to provide direction to proponents (and intervenors) on the information requirements for a thorough review. This serves to focus the impact analysis and, by extension, to organize public review and discussion around relevant problems (i.e., those requiring the attention of decision-makers).

At this stage, the Beaufort Sea EA Panel faced a dilemma common to all reviews (Marshall and Wolfe 1986). A panel requires information to identify the significant issues; yet it must identify the significant issues to obtain the information it needs. EIAs have been strongly criticized for failing to incorporate a systematic framework for data collection and analysis (Beanlands and Duinker 1983). In public reviews, there is an understandable temptation to err on the side of caution in rating the relevance of intervenor concerns. EIS guidelines thus try to cover everything superficially rather than the important issues in depth. With these considerations in mind, the approach followed by the Beaufort Sea EA Panel to focus an EIS dealing with a broad range of socio-economic and biophysical issues is of particular interest.

## Scope and Purpose of Meetings

The so-called EIS Guideline meetings, in fact, served several purposes and were more omnibus sessions than their name suggests. Public comment was invited on the Panel's operational procedures and terms of reference, as well as the draft EIS guidelines (which were much more comprehensive than previous documents prepared by EA panels). In addition, the public meetings were expected to help federal and territorial departments and agencies to prepare their position statements on Beaufort Sea development.

For the first time, draft EIS guidelines were scrutinized at public meetings rather than (as previously) through written comments. This change was made at the request of the initiating department. Public meetings were scheduled to take place three months after the release of the EIS. This timetable was set back by six weeks to allow review participants more time to apply for intervenor funding and to prepare their submissions.<sup>6</sup> During this period, the Panel also issued the operational procedures, which set out the ground rules for the meetings to discuss the draft EIS guidelines.

Over a one-month period in the late winter of 1982, public meetings were held at various locations across the North (and in Calgary). Special arrangements were made for the participation of representatives from surrounding communities. The meetings, *à la Berger*, were divided into general and community sessions, with the latter being reserved for non-technical discussion of the particular concerns of potentially affected communities. A summary of the guidelines was published and translated into Inuktitut and Inuvialukton. For the meetings, native language translation (standard practice at previous northern reviews) was provided wherever necessary. The EIS guidelines meetings, in sum, were designed to encourage public involvement and input at a relatively early stage of the process and incorporated several extensions and modifications to the usual procedures.

### Participant Input

Given the experimental nature of the draft EIS guidelines meetings, the response of participants becomes of some interest. During the round of meetings, over 150 interventions were received. According to the Panel's own assessment, the comments fell into two main categories: "changes to the Draft EIS Guidelines and concerns about the adequacy and appropriateness of the review process." (FEAR0 1982: 4) Further analysis of public inputs was undertaken by DIAND staff (Bissett and Waddell 1987).

Their findings provide some intriguing insights into the nature and structure of participation:

- 60% of the comments recorded were made by community residents;
- two-thirds of the inputs were in the form of statements of concern; and
- one-quarter of the inputs identified areas where additional information was required, (i.e., may be construed as guideline-specific).

Table 6 provides a more detailed breakdown of the type of inputs made by category of intervenor. It illustrates, for example, the preoccupation of native organizations and environmental interest groups with review process and government management procedures, rather than with

environmental and socio-economic concerns. This is the inverse of the structure of input by community residents who are most directly affected by project-related impacts.

**Table 6**

Public Inputs to Draft EIS Guideline Meetings

Subject	Community Residents	Municipal Govt. and Local Business	Native Groups	Interest Groups	Total
Human Environment	53	18	7	1	79
Natural Environment	70	—	7	4	81
Government Management	24	5	12	13	54
EARP	1	7	15	11	34
Other	13	1	2	1	17
	161	31	43	30	265

Source: Bissett and Waddell (1987)

### Panel Response: Interim Report and Final EIS Guidelines

Panel analysis and response to the inputs received at the EIS guidelines meetings took place on two levels. Firstly, "all reasonable suggestions" for change to the draft guidelines were incorporated into the final version. Along with the EIS guidelines, secondly, the Panel submitted an Interim Report (FEAR0 1982) on progress to date to the responsible ministers.

The final Guidelines provided a detailed breakdown of the expected contents of the EIS and set out the kind of document the Panel wanted to see prepared. Several of the requirements deserve emphasis. First, the importance of securing northerners' input to the socio-economic component was very strongly underlined by the Panel. Second, the proponents were instructed to produce a documents that could be easily read and understood by the lay public. Third, the Panel endorsed the value of an areal or zone approach to organizing material in the EIS, so that potentially affected communities could focus on the effects of most interest to them. These directives, designed to make the EIS comprehensible as well as comprehensive, reflected a more active attempt to focus the analysis than was made by previous northern panels.

Public concerns about the review process were dealt with further in the Interim Report. They were organized into nine themes for Panel response, which are further abbreviated here into two main categories:

<sup>6</sup> The publicreviewperiod was considered to be sufficient to allow for adequate response by 36% of the respondents to the evaluation questionnaire, 11% held the view that it was insufficient, and 52% expressed no opinion.

First, there was a statement of the requirements for achieving more effective public involvement in community preparation<sup>7</sup> and for creating a better understanding of the review process.

Second, there were a series of questions and answers regarding the role and scope of the review process and its relationship to other processes of decision-making, including northern policy and land use planning, native land claims, the regulation of offshore exploration and the implementation of other northern projects subject to the formal phase of EARP.

On this basis, the Panel outlined its plans for the second stage of the review, recommended changes to the terms of reference (as discussed in Chapter 4), and asked the initiator and other federal agencies and territorial governments to prepare position statements that would complement the industry perspective provided by the EIS. What this latter request amounted to was the addition of a second tier of public documentation to the environmental review. It represented an unprecedented attempt to clarify the policy setting that had previously confounded many northern reviews.

### Effectiveness of Procedures

With certain qualifications, the EIS guideline meetings and supporting procedures were a strong attempt to establish a sound basis for the review process. This view was generally shared by all of the questionnaire respondents who held an opinion (approximately one-third), and by most of the participants at the evaluation workshop. Reaction was more mixed, however, on the question of whether the public response to the draft EIS guidelines was adequately addressed by the Panel (18% of questionnaire respondents answered yes, 7% stated partly, 18 % said no, and the rest held no opinion). A somewhat more positive stance emerged on the relevance of the final EIS guidelines (25% responded positively, 32% said they were relevant in part, 11 % responded negatively, and the remaining 32 % had no opinion).

The principal reservation about the EIS guidelines phase held by workshop participants was that the exercise succeeded in adding concerns rather than eliminating them. While this accurately reflected the content of input to the public meetings, it also meant the focus of review process remained open-ended and lacked explicit and well-understood criteria of significance. A conventional, disciplinary-based format for impact analysis was incorporated into the final guidelines. It is evident, in retrospect, that this encouraged the preparation of detailed technical and scientific information. This approach worked against the EA Panel's request for a document that would be easy to read and encourage broad public participation. On the positive side, the emphasis placed on organizing information within the impact zones encouraged the identification of key issues and their cross-linkage across disciplinary boundaries.

## THE PROPONENT'S EIS AND THE PANEL STATEMENT OF DEFICIENCY

The EIS was filed in November 1982, nine months after the final guidelines for its preparation were issued. It contained almost 2,000 pages of text, organized into seven volumes (see Table 7 for details). Given the bulk of the document,<sup>8</sup> the EIS was completed in a relatively short period of time. Serious work obviously began on the basis of draft guidelines and benefitted from research which was underway at the time of referral. The efficiency displayed by the proponents reflected their own interest in clearing the review hurdle as quickly as possible. At the same time, they also ran some risk of not fully meeting what were a fairly onerous set of requirements.

**Table 7**

### EIS — Scope and Organization

Volume 1	Summary version of the EIS; intended for use by general public
Volume 2	Statement of project rationale and need; descriptions of the development plan and its production, transportation, and support systems; review of expected benefits
Volume 3	Background information on the biophysical characteristics of the three project impact zones:  3A Beaufort Sea-Mackenzie Delta production region, 3B Marine transportation corridor 3C Overland pipeline route
Volume 4	Analysis of biophysical effects of the development proposal (assuming no major pollution accidents)
Volume 5	Analysis of socio-economic effects
Volume 6	Analysis of risks of oil spills and other accidents, preventative measures and contingency planning
Volume 7	Research and monitoring needs

### Methodology Employed

In the light of subsequent events, the proponents approach to impact assessment is of some interest. A short note on methodology prefaced the substantive analysis in Volumes 4 and 5 of the EIS, which dealt with biophysical and socio-economic effects. The procedures adopted in both cases were relatively standard and more or less reflected conventional

<sup>7</sup> The Panel announced, for example, that it would hold sessions in the final round of hearings in all potentially affected northern communities. This was in response to criticisms that sending one or two residents to EIS Guidelines meetings did not allow for satisfactory input.

<sup>8</sup> On the basis of weight, this was one of the most comprehensive impact statements filed in Canada. Even with the supplements, however, it cannot compare to certain U.S. documents. The EIS for the trans-Alaskan Pipeline was 9,570 pages in length, 24-inches thick, and weighed 40 pounds (Kasperson 1978). So much for avoidance, the rest of this section is concerned with the thrust of analysis.

practice. Biophysical impact identification was undertaken through interaction matrixes that relate project activities to physical and ecological resources. Evaluation of the significance of potential impacts was based on criteria adapted from the classification developed in the EIS in Exploratory Hydrocarbon Drilling in the Davis Strait Region by Imperial Oil Ltd. and others (1978).<sup>9</sup> Socio-economic assessment was focused on northern communities although the study was strongly oriented toward changes in population, employment and income, and toward comparing regional opportunities with and without hydrocarbon development. A less explicit framework was employed to guide socio-economic as compared to biophysical analysis. This was arguably the result of contemporary differences in the state of the art of the two fields (see *Social Impact Assessment*, 85/86, 1983).

More important, however, was the overall absence of a particular discussion of the methodological difficulties associated with impact analysis of the Beaufort Sea hydrocarbon proposal. This omission was unfortunate, given the extra uncertainty introduced by the regional scope and early stage of a development proposal that incorporated much unproven technology. A lack of project-specific detail multiplied the usual methodological problems associated with impact prediction in the North, which are created by inadequate baseline information and poor process knowledge of natural and human ecology (Environment Canada 1983). The lack of detail places a premium on clarifying the fundamental premises and assumptions which guide assessment; e.g., by making explicit the limitations imposed at key steps of the analysis and specifying the confidence level of impact predictions (see Appendix 2).

The biophysical assessment (and, by extension, the socio-economic analysis of resource harvesting effects) was underlain by a rather sweeping assumption: namely, that impact mitigation would be an integral part of project development. At the predesign stage of a proposal based in part on experimental technology, this approach seems to amount to an article of faith as much as a tenant of analysis. It may explain, for example, the relatively low incidence of findings of moderate or major residual impact that might be expected from such a monumental and unprecedented project. On the other hand, the proponent's use of "worst-case" scenarios might be said to work to partially counterbalance the tendency to optimistic interpretation. What does seem clear is that the interpretations made by the proponents on the basis of the assumptions which underlay the organization of the EIS were open to (and certainly received) challenge.

This fact in itself is unexceptional; it was obvious from the outset that the proponents were given a formidable challenge. Elements of analysis were undertaken for which there were few precedents in Canada and little guidance from past experience elsewhere. The requirements for assessing cumulative impacts

is a case in point (see Canadian Environmental Assessment Research Council and U. S. National Research Council 1986). A range of scientific and methodological questions were raised by the Beaufort Sea EIS, and they deserve evaluation in their own right. In this report, however, they are considered only to the extent that they bear upon and help to understand the course and conduct of the review.

A potentially useful though subsequently uncaptured procedural contribution of the EIS can be found in the preliminary checklist of key issues in Volume I, pp. v. This provided a framework for focusing the analysis and discussion of the biophysical and socio-economic effects of the proposal, which unfortunately was not carried through into the organization of the EIS. The document, instead, exemplified the traditional disciplinary-based approach, which the Panel had, in fact, asked for. It treated components of the proposal as discrete categories rather than yielding a thematic coverage of major impacts and issues. Much of the information, moreover, was descriptive rather than analytical and this further reduced sharpness of focus in the EIS.

### Public and Technical Review and Panel Response

A 90-day formal review period commenced once the EIS was received by the Panel. During this period, over 30 submissions were filed with the Panel by government agencies, community organizations, municipal governments, and band councils. The interventions were organized and distributed by the Panel in two volumes (totalling approximately 700 pages of text). Both volumes, in sum, are compendiums of concern about missing or incomplete information and about the interpretations and conclusions drawn by the proponents.

Based on this material and the analysis by technical specialists, the Beaufort Sea Panel issued (through the initiator) a Statement of Deficiencies (March 8, 1983). In this statement the Panel identified four main areas of weakness and asked for additional information prior to scheduling public hearings.

1. The socio-economic assessment was considered to be inadequate in several important respects. The Panel wanted the methods of analysis, mitigation and monitoring, compensation and two specialized concerns (native lifestyle and culture, and northern residents access to economic opportunities) explained in the context of four scenarios of development.
2. The limitations of the biophysical assessment were considered to be less serious and extensive, with two important exceptions. The Panel believed that methodological inadequacies and data deficiencies could be addressed at the public hearings. It requested supplementary analysis of cumulative impacts of oil and gas development (for three indicator species) and more detailed treatment of the effectiveness of proposed mitigation measures.
3. Oil spills were highlighted as a particularly sensitive issue for future treatment (largely based on the concerns expressed by northern residents). The Panel asked for additional risk analyses of the probability of accidents associated with various production and transportation

<sup>9</sup> A review of the criteria and approach adopted in the South Davis Strait EIS is contained in Beanlands and Duinker (1983). They argue the criteria "reflected considerable attention to ecological significance and, to a lesser extent, social importance." Equally important, the framework provides a common basis for understanding the significance of predicted impacts, though, by design, it does not link these to project evaluation and decision-making.

scenarios, the estimated consequences, and the contingency plans and measures for coping with them.

4. A final and glaring omission, given the importance attached to this area in the Panel's requirements, was the lack of summaries by zone. Instructions regarding their preparation were reiterated.

Given the evidence and the strength of interventions, the Panel was justified in issuing a deficiency statement. Most of the participants (61% ) who responded to the evaluation questionnaire supported this decision, and only 11 % viewed it as unreasonable. An interesting question, however, is the extent to which the Panel's own EIS Guidelines contributed to it issuing a deficiency statement. It is apparent, in retrospect, that the Panel's requirements only became fully clarified in response to the proponent's EIS. The proponent was, in effect, caught out by the Panel's second (or third) guess at the guidelines, and the intervenors who forced the issue by their criticism of the EIS also subsequently complained about the inability of the Panel to control the process more efficiently!

### Supplementary Information

Approximately four months after they received the Statement of Deficiencies, the proponents submitted their response. The Supplementary Information to the EIS was a four-volume, 1,500-page document. By far the largest part dealt with the socio-economic issues (over 500 pages plus tables and appendices). Much of the information in this volume, for example, had been revised and updated from that presented in the initial EIS, with some new information added. The proponents believed that the information provided in this and the other volumes responded directly to the deficiencies identified by the Panel.

Following a 30-day formal review period and the receipt of further interventions, the Panel agreed with this position. It also considered the EIS plus the Supplementary Information and other support documents to constitute "one of the most complete environmental and socio-economic reviews written in Canada." Most fair-minded observers might find it hard to disagree with that statement, even though the scope and status of the material tabled still remained open to question in the minds of some reviewers.

Government position papers constitute the final component of the information base for the public hearings. They provided, as noted earlier, a formal policy-oriented perspective on the environmental management concerns associated with the development proposal. Unfortunately, the position papers did not live up to the expectations of many participants. This is evident from responses to the evaluation workshop and questionnaire reported earlier and from a review of the contents of the papers. Most of the papers ran toward motherhood statements rather than policy analysis. As a result, their potential contribution to public debate was not fully realized.

### PRE-HEARING ISSUE ANALYSIS

The information base for the final round of public hearings was extensive. For reasons already noted, it was easy to lose sight

of significant impacts, issues, and implications within the EIS. This problem of important matters being "buried in paper" is widely encountered in EIA in Canada. It was recognized by the Panel, who chose, in effect, to repeat the scoping and focusing before the final record of public meetings. On the one hand, this action underlined the inadequacies of previous scoping and focusing. On the other hand, it was a necessary response to the sheer volume of information placed before the Panel.

### Issue-Focusing Workshop

The process of refocusing on significant issues is of interest because of its wider applications. It began in December 1982 with a Panel workshop in which secretariat and technical specialists participated. Each technical specialist tabled, from the perspective of his or her discipline, the five key issues associated with the environmental assessment of the development proposal. This list of issues was then reviewed against the public transcripts of interventions to date.

Next, the issues were clustered and organized on the basis on social and scientific criteria. On social grounds, the issues were linked by reference to the expressed concerns of affected parties. Local communities in the Beaufort Sea region, for example, were preoccupied with the effects of the proposal on resource harvesting and traditional lifestyle. This approach provided means of combining technical matters (e.g., the physical structure of ice, the design of Arctic tankers, and marine ecology). It was supported by an analysis of cause-and-effect relationships between project activities and environmental and socio-economic change, which helped, among other things, to clarify impact associations of particular importance (e.g., the effect of underwater noise on whale and seal populations and the cumulative disturbance of benthic communities by dredging and discharges).

### Preparation of the Workbook

A subsequent stage in the documentation process was the preparation of an issues workbook. This contained excerpts and summaries of arguments made on significant issues by intervenors at previous meetings or in written briefs. It provided a source index and comparative reference on areas of agreement and disagreement and the reasons for them. The issues workbook assisted the Panel in the conduct of the public hearings by flagging relevant concerns, acting as a prompt for appropriate lines of questioning, and formatting participant replies and members observations. As a synthesis of updated information, the workbook also provided an important device for organizing the subsequent deliberations of the Panel leading to the preparation of the final report.

The pre-hearing issues analysis, in retrospect, represented an important effort to refocus the review. It resulted in the Panel and its advisors being able to systematically organize the substantive and methodological questions raised by the Beaufort Sea development proposal. The workbook had three obvious and direct uses for the Panel:

- it acted as simple and functional system for the management of a complex information base;

- it helped the Panel to focus attention on the questions that mattered for the duration of the investigation; and
- it provided, in particular, the basis for structuring the public hearings so that the discussion could be directed along productive and relevant avenues.

This approach has considerable potential for application by other EARP panels. The value of the exercise, in the Beaufort Sea case, could have been increased if the issues analysis was completed, or at least begun, earlier in the process — for example, at the draft EIS guidelines stage. Further benefits might also have been gained by undertaking the issues analysis as a public rather than an “in-camera” exercise, and by making the results widely available to hearing participants.

## THE MAIN ROUND OF PUBLIC HEARINGS

The public meetings to assess and comment on the EIS and other documents represented the apex of the Beaufort Sea review process. Beginning in mid-September 1984, this phase of the review occupied approximately three months. Within this period, 53 days of meetings were scheduled in 22 locations across the North, from Old Crow, Yukon Territory, to Nain, Labrador, and in two southern cities. At many locations, these were marathon sessions which ran late into the evening. It was an intensive and concentrated period of activity which was demanding of the Panel, secretariat, proponents and other participants who attended all or most of the meetings.

As with the EIS guidelines meetings, the main round of public hearings were divided into community and general sessions. Community sessions were held in 20 northern locations (involving 29 different communities). General sessions took place in four regional centres in the North (Resolute Bay, Inuvik, Whitehorse, and Yellowknife) and in Ottawa and Calgary. Before the main round of public hearings, the Panel issued written procedures for the conduct of the general and community sessions and reviewed these at a pre-session conference in Yellowknife.

### Preparation of Written Procedures

Until the Beaufort Sea review, the rules for the conduct of public meetings were unwritten. Previous EA panels, to be sure, followed a similar format, but administration was more or less left to each panel chairman, who tended to make on-the-spot responses to points of procedure. As a result, past hearings were criticized on grounds of fairness, e.g., lack of procedural clarity and consistency (Case *et al.* 1983).

A more explicit and systematic approach was called for in the case of the Beaufort Sea review because of the scope and complexity of the evidence and the large number of potential participants. The Panel, however, made it clear that this codification of the rules of practice should not be achieved at the expense of the informality and flexibility that was widely perceived as an important advantage of EARP hearings. The principles for maintaining a balance between formality and order on the one hand, and flexibility and accommodation of participants (i.e., allowing them to say things in their own way at their own pace) are set out in the “Introduction to Proce-

dures for Public Sessions,” and amplified separately for the two hearings. Quite detailed procedures were set out for the general sessions (17 pages including table of contents and glossary). The Panel emphasized these would be interpreted in a non-technical, common-sense manner (Section 2.1 of the Procedures).

As written, the procedures embody appropriate and sensible practice. Most of the respondents to the evaluation questionnaire (57% ) thought the procedures provided a sound basis for the conduct of the review (14% answered partly; 14 % said no; and 21 % had no opinion). Ottawa workshop participants considered the development of written procedures by the Beaufort Sea Panel as a long-overdue requirement for the public phase of EARP. This initiative, in the broader process context, may be seen as the first step in addressing long-standing concerns about procedural fairness and in setting a new standard for subsequent EA panels.

### The Pre-Session Conference

The Pre-Session Conference represented a further step in the development of fair and due process for the EARP as a whole. It was held to receive advance comments on the written procedures prepared for the general and community sessions, and on the organization of the agenda for the general sessions. As stated in the “Procedures for the General Session” (Section 16.2), the purpose was to allow the Chairman of the Panel to resolve any problems relating to these matters before the General Session. This approach imposed some additional demands and obligations on participants: “Each proponent shall attend the pre-session conference(s); other participants are encouraged to attend” (Section 16.3). All of those attending were expected to provide a preliminary indication of the number of people who intended to speak on their behalf, the fields of expertise of each, the anticipated filing date of presentations, and the duration of his or her presentation. They were also asked to indicate which general sessions they proposed to attend and to file a written statement or summary of the main points of their position. For those unable to attend and intending to make a presentation, such material was requested not less than three working days before the pre-session conference.

In fact, there was a patchy response to the invitation to attend the pre-session conference and to the request for pre-filing of material. Approximately 40 people were present. The majority were from government agencies; relatively few were from interest groups and communities. Both the structure of the meeting and the composition of participants contributed to a rather *pro-forma* style of discussion; e.g., largely characterized by minor points of administrative clarification. With some exceptions, the opportunity for strategic discussion of procedural direction and agenda organization and the relationship between them was not readily seized. This may merely indicate, as one technical specialist claimed, the fact that most participants were comfortable with the course of action proposed. Given some of the concerns over the hearing agenda and procedures, which surfaced subsequently, the potential of the pre-session conference for addressing these was not fully exploited. In retrospect, a more imaginative and creative discussion of the Panel’s re-scoping exercise might

have served the process better; e.g., by scrutiny of the coverage of issues and how best to bring them into focus at the sessions.

By most accounts, however, the pre-session conference is a potentially useful addition to EARP. The value of the mechanism was buttressed by the measures taken to document procedures and organize hearings for an issue-oriented discussion. When considered collectively, these constitute a more systematic approach than was previously the case, building greater fairness and relevance into the public phase of EARP. New standards of procedural guidance and direction were established, although it should be noted that the majority of participants apparently remained unaware of this move.<sup>10</sup>

### General Sessions

In the terminology and practice of EARP, general sessions focus on technical issues and questions associated with project assessment and impact management. This emphasis does not preclude presentation by local communities, interest groups, and the public at large. Quite the contrary, general sessions tend to have a smorgasbord quality. Technical details and scientific judgement are intermixed with unconstrained public opinion. The result is typically a jumble of information that is hard to assimilate at the time and resists ready analysis and classification afterwards.

At the Beaufort Sea general sessions, for the first time in an EARP review, there was a structured agenda based on the key issues identified by the Panel (see previous section). Blocks of time at each location were allocated for discussion of particular subjects, e.g., arctic tanker traffic, oilspill response, government management capability, etc. This format was designed to assist participating organizations to preplan their presentations, to organize travel schedules for bringing relevant specialists to the hearings, and, most importantly, to promote more effective participation and focused discussion.

The effectiveness of the general sessions can be reviewed in terms of two inter-related dimensions (introduced in Chapter 3). First, there are inter-related questions about the fairness of procedures and the extent to which the process encouraged public participation. Second, the thoroughness and efficiency of the Panel's review of information must be taken into account. Both aspects must be balanced against each other to arrive at an overall judgement of process effectiveness.

### Openness, Fairness, and Related Matters

The Panel made considerable effort to develop an open process, one in which all parties were encouraged to present their views in a non-confrontational manner. Because of constraints of time, a more limited opportunity was available for intervenors to question and comment on the views of others. In general terms, the view of participants at the Beaufort Sea evaluation workshop was that the Panel maintained an open process throughout.

<sup>10</sup> For example, only 17% of the respondents to the evaluation questionnaire held an opinion on the value of the pre-session conference. While the pre-session conference is not designed for wide-ranging participation, it may be necessary to widely disseminate the purpose and the results of the meeting.

Openness is a necessary, but not sufficient, prerequisite for achieving successful participation. The conduct of hearings to encourage participation, on occasion, requires more affirmative action to accommodate procedures to participants, rather than *vice versa*. At the same time, this course of action must be consistent with basic standards of fairness.

The general sessions were run in a way that encouraged participation in the view of one-third of the questionnaire respondents. A further two-fifths of the sample concurred in part, but held reservations. Only 7% responded negatively (with 22% expressing no opinion). The reservations, somewhat paradoxically, encompass complaints about the time taken to complete proceedings. Many general sessions ran for a full day and late into the same evening. The Panel's commendable effort to hear everyone may have become counter-productive with this timetable.

The general sessions were characterized by due and fair procedure, identified in terms of criteria of impartiality and consistency. Panel rulings and interpretations were considered to be impartial by 71% of questionnaire respondents (with 11% dissenting and 18% expressing no opinion). In addition, the Panel generally went to considerable lengths to appear unbiased in their demeanour to all parties. The proponents noted, in this context, that they had "to jump through a greater number of hoops than intervenors," but also recognized "this goes with the turf." Several complaints were made by intervenors who felt their arguments were dismissed too brusquely. Only one example, cited at the Ottawa evaluation workshop, carried broader overtones of discrimination; namely, that men were referred to by formal title (Mr., Dr., Professor) while women were often addressed by their first name. A cursory scrutiny of the transcripts bears this out; it represents an unfortunate tendency but does not detract from the consensus of impartial administration without favour to any interest.

By comparison, there was less unanimity that the Panel was consistent in its rulings. One-half of the questionnaire respondents considered this was the case; 25% held partial or definite reservations about the consistency of Panel rulings; and the remaining 25% expressed no opinion. Latent concerns on this matter were intermixed with other reservations about the Panel's approach to examining information.

### The Thoroughness of Examination

Questionnaire respondents held mixed views on the thoroughness of examination of information at the general sessions. Thirty-six percent thought the examination was thorough, 18% answered partially and 18% responded negatively (with 28% expressing no opinion). The reasons behind these reservations were discussed in-depth at the Beaufort Sea evaluation workshop. Several factors were felt to have constrained a thorough examination.

The sheer amount of material tended to bog down proceedings. Much of this, moreover, was considered by participants at the evaluation workshop to be marginal to the key issues. They footnoted the inclusion of local concerns and community-based interventions as a contributing factor to peripheral

or “blind alley” discussions. In their view, the roles of the community and general session were not fully clear and properly separated.<sup>11</sup>

The approach taken by the Panel to the conduct of the general sessions was questioned on three accounts. The first of these was the Panel's apparent unwillingness to enforce its own procedures for general sessions (for example, Sections 9 and 25, which allowed the Chairman to exercise his discretion to limit or exclude questions or concerns that fall outside the mandate of the Panel or are needlessly repetitive, or irrelevant or immaterial). Second, there was a widespread perception among participants at the evaluation workshop that the Panel itself did not follow a particularly coherent or incisive line of questioning, i.e., one designed to get at the answers. Third, the Panel also tended to entertain questions from intervenors based on their desire to find out something rather than on its need to know. The Panel's apparent difficulty in sticking to its own rules and developing its own currency of information gives cause for some disquiet in reviewing the management of the hearings.

The most disappointing aspect, in this respect, was the review of government policy and programmes. Unlike the proponents, participating agencies appeared to be subject to a more neutral and benign “hands-off” scrutiny. Any attempt to intensively grill federal bureaucrats on policy matters would have likely met with strong resistance. Certainly, this was considered by the representatives of some participating agencies (e.g., Energy, Mines and Resources Canada) to lie outside the mandate of the Panel. While a circumspect approach is understandable, the fact of the matter is that an important opportunity was forgone. Many position statements, as noted earlier, tended toward the generalized, the descriptive, and the optimistic. A more searching analysis of areas of omission and commission at the general sessions might have given point and punch to recommendations on improvements to planning and management (see Chapter 6).

A final theme of discussion underlying the above points was the role played, or more accurately not played, by the technical specialists. Their intervention in flagging and perceiving issues was generally considered to be too low-key and not particularly effective. For comparison, 39% of questionnaire respondents considered the technical aspects were effective in their examination, 39% stated they were partly effective, 3% thought they were ineffective, and 19% expressed no opinion. Some of the technical specialists, themselves, believed that they were both underutilized and inhibited from following a rigorous line of questioning by their adjunct and arms-length relationship to the Panel. This led to some uncertainty as to their place in the proceedings, a concern shared by other intervenors. In partial explanation, the Panel was probably reluctant to grant the technical specialists, or itself, free rein to vigorously cross-examine positions in order to avoid the impression of prejudging the issues.

<sup>11</sup> For comparison, the role and purpose of the general sessions was clear to 46% of questionnaire respondents, less evident to 25%, and not clear to 3%, with 26% holding no opinion. The role of the community sessions was clear to 43%, less evident to 3%, and not clear to 7%, with 47% holding no opinion.

On the positive side, an intriguing and potentially very significant development at the general sessions was the apparent beginning of a mediatory-style procedure to deal with certain technical issues. Risk analysis is an example. During the Beaufort Sea general sessions, risk analysis consumed considerable blocks of time. Only a relatively small handful of specialists were directly involved. In order to address the issues efficiently, a number of meetings were convened outside of the main hearing. These involved the Panel's technical specialists working with their counterparts from the proponent and intervenor agencies to sort out areas of scientific agreement and disagreement.<sup>12</sup> A report was then brought back to the public session and the parties to it were open to questioning. This type of arrangement ensures that the process remains under the auspices of the Panel and within the hearing forum, but does not engage all participants in the minutiae of technical discussion. Negotiation of risk and other technical questions has considerable potential to improve the thoroughness and efficiency of examination of information at the general sessions. Further experimentation is clearly warranted.

### **Concluding Perspectives**

Process credibility can be easily prejudiced by bias in the Panel's interpretation of procedural points or its demeanour to participants. This apprehension, however, must be set against the erosion of confidence introduced by the Panel's reluctance to forcefully investigate matters under review. Fairness involves meeting both tests; it is thus a concept that overlaps with efficiency and thoroughness of examination when determining process effectiveness.

The preceding analysis suggests that the Beaufort Sea EA Panel may have emphasized openness at the expense of its obligation to pursue a consistent and disciplined scrutiny of the evidence. A commitment to allow everyone the opportunity to be heard must be balanced against permitting non-productive debate of peripheral matters. This is a fine line to walk, especially in the North where those potentially affected by the proposal have much to say because they have a lot to lose. In such circumstances, a liberal interpretation of openness is arguably preferable to maintaining a tight rein on the thrust of intervention and discussion.

This kind of interpretation also needs to be set in a broader context of the performance of other participants in the general sessions. Questionnaire respondents graded the contribution of proponents, intervenors, and participating government agencies to proceedings as follows:

<sup>12</sup> Several issues were dealt with in this way. These included the effects of tanker traffic on icebreakers, the effectiveness of oilspill contingency measures, and the probabilities of oilspills under various risk scenarios. In the latter case, for example, the discussions took place over a period of several weeks both before and during the general sessions. At issue was the proponents' response to the Panel's Deficiency Statement and requirements for further information on the probability and potential volumes of oilspills. Both Environment Canada and the technical specialists retained by the Panel disputed the proponents' response. Exchanges of correspondence and meetings (under the operational procedures set out by the Panel) did not resolve some basic disagreements on the best approach to risk estimation before the consideration of this issue at the Inuvik general session. Further discussion by the parties was held under the chairmanship of a member of the Panel secretariat (in this instance, the technical specialist was actively involved in the dispute). This resulted in a concluding statement to the public session.

- 7% considered that government agencies had participated effectively in the general sessions, 57% viewed their participation as partly effective, 14% said it was not effective, and 22 % held no opinion;
- 25% thought that intervenor groups participated effectively in the general session, 46% considered their performance to be partially effective, and the remainder did not respond;
- 18% said the proponents responded candidly to questions at the general sessions, 43% said they did so in part, 18% said they did not, and 21 % had no opinion.

These are, of course, aggregate comparative judgements that mask individual contributions or the lack thereof. They are useful for exemplifying the collective responsibility of all participants for ensuring that the public process works. Their demeanour and temper, far more than is conventionally admitted by the critics of the process, shape the limits of what is possible in terms of management by the EA Panel.

### Community Sessions

As the name implies, these sessions are held in the smaller centres that may be potentially affected by the proposal. They are meant to provide a "user-friendly" forum for community leaders and residents to air their views on the impacts of development. In particular, community sessions afford an opportunity to tap local knowledge about resource ecology and use and to hear directly about cultural and lifestyle aspirations that may be foregone as a result of pending change. Given the importance the Panel attached to the participation of northern residents, the community sessions assumed a high profile in the process and deserve careful scrutiny.

Any criticism of community sessions appears to border almost on sacrilege. This is grass roots participation in action. It is a ceremony of concern, more an act of faith than an expression of ideology. Like other hearings, however, the community sessions can be analyzed. Where they differ, perhaps, is in the nature of insights and conclusions that can be readily drawn by an outside observer.<sup>13</sup>

### Style and Structure of Participation

For the record, the style of community sessions should be briefly outlined. It may be summarized as one of "ritualized informality." The Panel usually occupies a head table in the local community hall, flanked on one side by the proponents and on the other by a bank of electronic recording equipment. Members listen to a succession of community spokesmen. The majority of the audience listens impassively. Others at the back of the hall talk more animatedly. Young children wander

in and out. Standing or sitting, more off guard than at the general sessions, are the support cast of the proponents and participating agencies. Community sessions are part public hearing, part local event; at the same time both serious and unaffected.

The community sessions were, in fact, moderately well attended: several hundred local residents attended the 20 meetings. Levels of participation can also be classed as moderate rather than good. Approximately 230 people spoke to the Panel during the course of the community sessions. The rates of participation and the content of input have been reviewed by Bissett and Waddell (1987) and Erickson and Kennedy (1987). Certain regional commonalities and differences are evident from the comparison of the data. A detailed analysis of the structure of participation in the community meetings, taking the Beaufort Sea-Mackenzie Delta region as an example, is outlined in Table 8.

**Table 8**

Local Participation in the Community Sessions  
Beaufort Sea-Mackenzie Delta Region

Community	No. of Presentations	Formal Representation	Community Members Attending No.	% of Population
Aklavik	8	—	20	2.6%
Tuktoyuktuk		Local Council, Hunters & Trappers Assoc.	15	1.8%
Fort McPherson / Arctic Red River	10	Dene Regional Council	50	6.4%
Paulatuk	5	Local Council	25	13.2%
Holman	8	Hunters & Trappers Assoc.	15	4.4 %
Coppermine	4	—	25	2.9%
Sachs Harbour	8	Hunters & Trappers Assoc.	15	9.3%
Inuvik	22	Native Women's Association; Council for Disabled	40	1.1 %

Source: Bissett and Waddell (1987)  
Erickson and Kennedy (1987)

<sup>13</sup> At community hearings, listening and understanding are not necessarily the same thing. For local people, much of what is important may be said informally during and after the hearing, rather than in formal statements. Hugh Brody (1981) gives a telling and eloquent description of how different worldviews and behaviours inhibit real cross-cultural understanding between native communities and outside visitors, however well intentioned. In this context, the present analysis is superficial and limited by my passing familiarity with the communities involved. The "conclusions" drawn here should be read with this in mind.

It is evident, for example, that participants were not a representative cross-section of the community at large. Notably absent, according to Erickson and Kennedy (1987), were wage employees, women, and young people. Their absence raises important questions about the extent to which the perspectives developed are reflective of community attitudes and priorities. Similar concerns, of course, can be appended to the general sessions (and indeed all hearings). More importantly in this context, however, they beg other questions about the appropriateness of the process in relationship to the composition of participants.

### **Process Effectiveness**

Perspectives on process effectiveness vary. The Panel in its final report concluded that community sessions were successful. On one level, the Panel was probably right; no one should underestimate the time and effort put into this part of the process in order to try to listen to the views of northerners. All of the questionnaire respondents who held an opinion, for example, felt that a real effort was made to listen to community concerns (61 % held no opinion; presumably because they had not attended a community session). Respondents were, however, less unanimous in their view of the success of community sessions in terms of encouraging public participation (21 % answered yes, 14% partly, 3 % no and again 62 % had no opinion).

Several participants at the evaluation workshop criticized aspects of the structure and style of the community sessions. The following points were made:

- Despite the pre-hearing measures to encourage participation, the community sessions were seen as one-time events.
- As a result, the sessions were treated as opportunities for individual presentation rather than for carefully prepared statements of positions and priorities.
- This is reflected, for example, in the emphasis given to oral rather than written testimony and to the limited number of formal interventions received from community-based organizations.
- Some of these groups also participated at the technical sessions, apparently because they felt that these were perceived by the Panel to be more important.

These observations, which were amplified in subsequent papers by MacLachlan (1984) and Erickson and Kennedy (1987), suggest certain shortcomings in the procedures adopted for community sessions. Most notably, perhaps, they point to the rather unfocused nature of much discussion at these hearings. Some degree of process reorganization seems called for to provide a more systematic expression of community views. Local knowledge of ecological processes, for example, did not appear to be fully tapped at the community sessions compared to the technical sessions. Their educational value for others, as well as their instrumental contribution to Panel deliberations, thereby was underutilized.

Any change in the community hearing process must obviously be reflective of the culture and disposition of the participants.

In this context, some of the above comments from specialists in community involvement — e.g., with respect to oral versus written testimony — may strike other observers as odd, even perhaps misplaced. One wonders, of course, what the community participants themselves made of the sessions designed for them. Evidence gathered for this analysis directly<sup>14</sup> and through a follow-up process (Komaroni and Gruben 1984) appears to be more positive than the critics give credit for.

### **Time for a Change?**

The previous analysis leads to more questions than answers about the role of community sessions. How appropriate are they to the traditional styles of problem-solving adopted by local peoples? And how, in turn, are these styles breaking down with socio-economic changes in the North? These questions are not rhetorical: they are important if we are to design a more responsive and relevant community hearing process. Such a process can only be built through partnership with the residents themselves. There is much that remains to be done in this regard.

In this connection, finally, the Beaufort Sea review should be seen as a positive step toward redefining the relationship of EA panels and local communities. The key factor here was the commitment of the Beaufort Sea Panel to consultation; its actions speak louder than the words of its critics. It also bears remembering that the Panel valued highly the results of community sessions, describing the testimony of native people as “vivid and compelling.” While the process and the results are open to criticism, this appraisal reminds us that panels and participants have created a solid basis on which to graft future initiatives. It is time, perhaps, for a change in the organization of community sessions, but this should be in a direction and at a pace dictated by the communities themselves.

## **THE MAIN LESSONS FROM REVIEW PRACTICE AND PROCEDURE**

### **Preface: Panel and Staff Organization**

1. The Panel, its Secretariat and technical specialists constituted by far the largest EARP complement assembled to date. A seven-member panel, with strong northern membership and experience, was consistent with the scope of the review. The composition of the Panel gave the process initial credibility in northern communities. It is less clear, in retrospect, whether the number of members created functional difficulties. The task of a seven-member panel reaching a considered consensus on important matters should not be underestimated (though much remains uncertain because its deliberations were held *in camera*).
2. A more cost-effective use could have been made of the technical specialists. The strength of this group lay in its capability to clarify scientific issues and make them

<sup>14</sup> This material was gathered in a non-systematic, conversational way and filtered through screens of culture and language (see also footnote 13)

transparent to the interests of the public. By some accounts, the technical specialists were under-utilized in this capacity; they played a low-key role at the general sessions and were not able to pursue important matters to satisfactory levels of resolution.

### Scoping the Issues and Focusing the Analysis

3. A systematic attempt at scoping the issues and focusing the impact analysis and review was undertaken for the first time in an EA Panel investigation. Unfortunately, the process did not effectively conclude until relatively late, with the issuance of the Statement of Deficiencies and followed by the pre-hearing issues analysis. At that stage in the proceedings, the effect on the credibility and efficiency of the review was less influential than it might otherwise have been. Early determination of significant issues is critical to improved effectiveness.
4. The issues seminar represented an important addition to the EA panel process. It provided an opportunity to confirm and identify the range of concerns associated with the proposal. More arguably, the seminar might have begun the process of evaluation of significance. A loosely structured, one-day public meeting was only sufficient to scratch the surface of the first objective. This should not, however, obscure the merit of the idea.
5. The EIS guidelines meetings, because they were both comprehensive and open, also represented a further evolution in EARP practice and procedure. Even though the final EIS guidelines issued by the Panel still resembled the "shopping list" approach, the directions regarding the contents and structure of the document were a significant advance on past practice. Of particular importance in this regard, were the directives for preparing an easy-to-read document in which the material was organized by zone to help the impacted communities focus on matters of most immediate interest to them. At this stage of the review, however, greater emphasis should have been placed on the evaluation and organization of significant issues rather than on the reiteration and extension of concerns. This may have obviated the need to issue a Deficiency Statement to the proponents, which, in effect, completed the guidelines phase of the process.
6. The Panel's pre-hearing issues analysis, including the preparation of a workbook for the organization and conduct of the general sessions, was a commendable innovation. It resulted in a coherent framework for understanding the matters under review. Further dividends would have been realized by making a summary or variant of the analysis available to all participants rather than by retaining it as an internal document. This might have helped, for example, to better focus the discussion at the hearings themselves.
8. A concerted effort was made to encourage and prepare the communities of the project impact zones to participate in the review. The scale of activities undertaken included establishment of a regional office, the opening of channels of liaison with existing local institutions and the availability of technical specialists for consultation, and support for community-based field workers and the holding of a workshop. All of this adds up to a programme for involvement which set a new standard for EARP in terms of striving to provide resources and relate techniques to the capabilities of the interested public.
9. The preparatory groundwork in northern communities was supported by other innovations, such as the development of a public file and the establishment of intervenor funding (for which DIAND, the initiating department, deserves more credit than it traditionally receives). All considered, the process reflects a deliberate thrust to try and even the imbalance that traditionally occurs between intervenors and proponents. Both community and interest groups were better equipped to press their case and present considered arguments.
10. Given this background, the main round of public hearings may not have lived up to the expectations of participants. Community sessions provided a rather limited opportunity to crystallize local perspectives on issues. General sessions, by contrast, were lengthy and tested the stamina of participants as much as their evidence. The Panel gave intervenors every opportunity to be heard; in fact, there were relatively few checks on the content of submissions. The Panel was also reluctant to undertake or permit disciplined questioning of information and views. As a result, peripheral concerns were often promoted at the expense of important problems.

### Maintaining Due Process

### Encouraging Public Involvement

1. The EA Panel was exemplary in its commitment to public consultation. It sustained the effort throughout the three-year process and introduced a number of procedural initiatives to inform and involve northern residents.

13. The Panel was also responsive to the structure of public input at key stages of the process. A reasonably systematic approach (far more so than previous inquiries) was followed in tracking and analyzing the concerns and issues placed before the Panel. Much of the analysis, however,

remained internal to the Panel and its staff and so, unfortunately, this aspect of performance was not readily visible to participants.

## **A Summation**

14. At the end of the day, the review practices and procedures adopted by the Beaufort Sea EA Panel display innovation and creativity. This seems to me to reflect more than the necessity introduced by the atypical scope of the mandate. It is a consequence of an impressive commitment to

public participation by northern residents. The very success of the review in meeting basic tests of responsiveness and fairness also worked to reduce its thoroughness and efficiency. A balanced accommodation of these standards, the hallmark of responsible administration, ultimately reflects a series of judgement calls made in the context of a dynamic process. Public reviews, at base, are a behavioural process, contingent upon the personalities and temper of those involved. The day-to-day process of accommodation and adjustment, in my observation, was more effective than the bare print of hindsight criticism might suggest.

## CHAPTER 6: THE FINAL REPORT OF THE EA PANEL

The release of a panel's final report represents both a milestone and a signpost. It provides a concluding statement on the evidence gathered during the review phase and relates this to subsequent activities by way of recommendations on project design and impact management. As such, the document is the focus of critical attention by all participants. For the initiator, the proponents and the intervenors, there is a lot riding on the panel's findings. Some disagreement with aspects of the report is almost inevitable. Reactions to the report frequently reflect the extent to which participants judge that their positions have been included and their interests met. For this reason, any soundings taken of parties who are directly affected by or Interested in the report must be qualified.

In this chapter, a post-assessment of the Beaufort Sea EA Panel's report is drawn from several sources. An attempt is made to set participant Interpretations in a more dispassionate, comparative perspective. The report will be analyzed primarily as a resource *document*. To be useful to its intended audience, it must generally meet the mandate and objectives established for the review. Within this context, the report might also be expected to provide a coherent synthesis of review proceedings and give clear guidance to future action. The emphasis in applying these tests is to evaluate the report as both a substantive capstone of the review process and as a catalyst to decision-making (see Figure 4).

### NATURE AND SCOPE OF COVERAGE

With reference to the mandate of the review, the final report may be screened initially in terms of the nature and scope of its coverage. The document is the most detailed issued to--date by an EARP panel; 146 pages in length, including 38 pages of references, community summaries, appendices, etc. A breakdown of the main categories into which findings and recommendations are organized is given in Table 9. It shows, in crude terms, the relative emphasis given to issues by the Panel, and the relationship to the structure of public input to the final round of hearings.

At first glance, the report gives DIAND, the initiator of the review, what it had requested. The report sets out the main effects of the proposal on the natural and human environments, considers the capacity of governments to control oil and gas development in the Beaufort Sea, and recommends various measures for coping with the problems identified. It also identifies inadequacies in existing information on the region and shortcomings in the Institutional arrangements for assessment, planning, and management. Most importantly, the report contains a firm conclusion: a phased approach to oil and gas production and transportation is environmentally and socially acceptable. All of which, pro *forma*, satisfies the terms of reference.

On an aggregate level, moreover, the report reflects what the Panel heard at the hearings. As Table 10 shows, 80 % of public comments were in the form of statements of concern (and thus tend to be rather general). Some interesting differences among the main preoccupations of participating groups are also evident with respect to both the subject and type of inputs made. The breakdown given in Table 10 can be usefully compared to the information in Table 9. This suggests that the Panel's coverage of issues corresponded reasonably well with the concerns voiced by participants, although their emphasis on human versus the natural environment is reversed in the report.

**Table 9**

Final Report of the Beaufort Sea EA Panel: Summary of Coverage and Recommendations

Main Issues <sup>1</sup>	Coverage in Report <sup>2</sup> % of text	Recommendations <sup>3</sup>		Public Inputs <sup>4</sup>	
		no	%	no	o/o
1 The Review Process	5	2	2	44	18
2 Oil Spills & Risk	12	6	7	131	5.5
3 Human Environment	26	13 <sup>a</sup>	16	835	35.2
4 Natural Environment	5	34 <sup>b</sup>	41	707	29.8
5 Compensation	4	1	1	510	2.1
6. Government Management	11	27 <sup>c</sup>	33	586	24.7

\* All percentages are rounded and may not add up to 100 %

#### Notes

- 1 The issue categories are as defined by the Panel
- 2 Approximately 9% of the text report was devoted to a description of the Process
- 3 Total number of recommendations 83 Note that a number cross-link two (or more) categories
- 4 Total number of separate public comments recorded at hearings, 2,369
- 5 The breakdown of recommendations comprise
  - a) 2 principal and 11 supplementary
  - b) 4 principal and 30 supplementary
  - c) 3 principal and 24 supplementary

**Table 10**

Structure of Public Input to EIS Hearings

	Community Residents	Municipal Govt. Business	Native Groups	Interest Groups	Total
<u>Subject of Public Input</u>					
Oil Spills	77	8	33	13	131
Human Environment	349	105	260	121	835
Natural Environment	308	34	205	161	708
Compensation	34	1	28	3	66
Government Management	118	72	266	129	585
EARP	12	6	12	14	44
<b>TOTAL</b>	<b>898</b>	<b>226</b>	<b>804</b>	<b>441</b>	<b>2,369</b>
<u>Types of Information Provided</u>					
New Informatron Provided	99	16	42	10	167
Additional Informatron Needs	157	—	49	2	208
Disagree With Information	8	3	28	23	62
Agree With Information	18	6	4	3	31
Concerns	616	201	684	403	1,901
<b>TOTAL</b>	<b>898</b>	<b>226</b>	<b>804</b>	<b>441</b>	<b>2,369</b>

Source, Bissett and Waddell (1987)

**Response to the Report**

A selective sampling of the scope of response to the Beaufort Sea EA Panel's report is given below. The emphasis is on summarizing the basic positions taken by government, industry, and local communities; i.e., the parties most directly affected by the report.

1. The federal government, through the initiator, has responded favourably to the report, although with characteristic bureaucratic caution. DIAND (1985) considers that the Panel report has cleared the way for dealing with specific applications for hydrocarbon

development in the region and notes that other federal departments and agencies and the territorial governments share this view.

2. The oil and gas industry, generally, and the proponents, in particular, seem to welcome the report. In their view, which is more bullish than that of the initiator, the main conclusion of the Panel "removed any doubt which may have existed that Beaufort Sea-Mackenzie Delta oil and gas production and transportation could proceed" (Davies 1984: 13).
3. Local residents of the Development Impact Zone (DIZ) support the Panel report and want to see principle recommendations put in place. This conclusion was drawn following a review of the responses of 10 communities under the auspices of the Beaufort-Mackenzie Delta DIZ Society (Komaroni and Gruben 1984). As senior DIAND officials have suggested, the support of these affected communities is the acid test of the success of the report (Faulkner 1985).

This general consensus, however, appears to break down with environmental interest groups. A hard-line stance on the report, for example, was taken in a special issue of the newsletter of the Canadian Arctic Resources Committee (Northern Perspectives 12 (3), 1984) entitled "Not With a Bang But a BEARP." The newsletter contained a scathing criticism of the report, concluding that it fell far short of expectations and opportunities. Much of the tone is rhetorical, even vindictive in places. The collected articles, however, do flag underlying questions which deserve serious consideration.

**Some Strengths and Weaknesses**

A discussion of the strengths and weaknesses of the report is organized below under the main themes of the Panel's mandate.

*Identification of Major Development Effects:* The report sets out the issues and implications rather than the impacts per se of the proposal. Such an approach reflects the mandate given to the Panel and the fairly early stage at which the proposal was reviewed. It is based, moreover, on an organized and systematic treatment of the main problems.

The lack of technical specificity in the report, however, raises a couple of nagging doubts. First, it calls into question the *basis* of the conclusions and principal recommendations contained in the report; namely, the specification of the type and scale of development that could proceed. Second, the necessity for the preparation of the proponents' EIS, which occupied such a major place in the review process and in public hearings, is not obvious. Why ask for information on this scale, if it is not to be used?

In order to delve into these matters, we need to know about the Panel's reservations about EIA and SIA methodology. Unfortunately, this area is given only cursory treatment in the final report. This is particularly disappointing. Given the novel aspects of the assessment, such as the pre-design status of the proposal and the importance of cumulative analysis, there was (and is) much to learn from the experience.

At the same time, the Panel was bound by the limitations of the information placed before it. With few exceptions, intervenor criticisms of the proponents methodology went unaccompanied by examples of better alternatives. Lacking confidence in predictive capability, the Panel apparently preferred to rely on a phased approach to development backed by research and monitoring to cope with uncertainty. This approach, in fact, conforms to and promotes the principles of adaptive environmental assessment and management. So the end result, though not the means of getting there, meets one of the basic tests of effectiveness.

**Public Policy and Government Management:** The Panel report underlines the overall importance of an anticipatory approach to development planning and environmental management. It identifies several areas where adjustments are necessary to existing planning, regulation, and research mechanisms for effective project control. These include:

- strengthening local control over the management and mitigation of socio-economic impacts;
- improving institutional arrangements for project coordination and contingency planning;
- completion of regional land use plans for the Beaufort Sea-Mackenzie Delta;
- accelerating basic and applied research in the Arctic;
- implementing and extending monitoring and surveillance programmes for advanced warning of anticipated and unexpected problems; and
- providing support systems, including human and financial resources, to ensure these various tasks are done.

Few will challenge the importance of these elements of strategy; it is, however, the generality of the recommendations made in the report that is the source of concern.

The report advocates, but does not articulate, the policy context necessary to impart direction to development planning for Beaufort Sea oil and gas development. It does outline existing recommendations that will help to alleviate important aspects of policy uncertainty; notably whether the proposal can be implemented in an environmentally and socially accepted manner. Missing is explicit treatment of the fundamental implications associated with appropriately scaled energy development. What, in particular, is the cumulative relationship of the project to traditional lifestyles and the non-wage economy based on renewable resource use? The Panel appears to place heavy reliance on terms and conditions for project monitoring and impact management to ensure that the parallel path of northern development does not become incrementally foreclosed. Given the background outlined in Chapter 4, this strategy deserves a more penetrating analysis. Such a dissection would surely have exposed some of the contradictions inherent in existing government positions.

Apart from the recommendations in certain sections, notably dealing with shipping, harbours, and the Beaufort Sea Coordination Office, it is hard to avoid the impression of bland

prescriptions that will be difficult to act on directly. Some of the recommendations, for example, express support for general trends in institutional evolution (e.g., dealing with further devolution of administrative powers to the territories). In other cases, it is not clear what the Panel has in mind (e.g., with respect to local control). Finally, where more specific recommendations are made, these are sometimes redundant because they describe existing practice and procedure (e.g., review of contingency plans prior to production approval). The report, in retrospect, identifies deficiencies in government capacity to control Beaufort Sea oil and gas development, but leaves it largely to the initiator and other government agencies to translate the recommendations into a concrete form.

*A Framework for Management:* A further constraint on the utility of the report for government decision-making concerns the linkage and focusing of the recommendations. Except for a certain amount of cross-referencing, the key elements of a phased approach to oil and gas development are loosely organized. A framework for management, in which these elements are deployed to guide project decision-making, only becomes apparent from a close reading of the report. This may be envisaged, at a minimum, as the matrix of operational requirements and actions, separating measures that need to be in place and completed prior to formal approval from those which are longer term and/or more general.

The pre-approval management regime is particularly critical given the monitoring, mitigation, and research assumptions made by the Panel in formulating its recommendations about the acceptability of a small-scale project. An attempt to make this more legible and transparent, possibly along the lines of the example in Table 11, might have deflected some of the criticisms of the Beaufort Sea EA Panel Report, namely that it did not provide a clear outline of how the government might review, regulate, and plan for oil and gas development (e.g., Fenge 1984: 15). More to the point, a framework would serve as a building block from which to start the longer task of completing a comprehensive and coordinated strategy of project management and relating this to the wider context of public policy and institutional evolution.

This piece of unfinished business, finally, points to a more fundamental concern regarding the degree of continuity between the public phase of EARP and subsequent phases of decision-making. Under the federal system, it is open to the discretion of the initiating and participating agencies as to how they interpret the findings and recommendations of a review panel. In this instance, DIAND (1985) has prepared and released a systematic response to the final report. This feedback is a necessary and helpful step towards allaying some of the policy and management uncertainties referred to above. But is it sufficient given the potential importance of the Beaufort Sea development to the future of the North and bearing in mind the effort put into environmental assessment and review? Where, in fact, do we go from here?

The answer, according to DIAND's (1985: 1) perspective on the Panel report, seems to be that existing approval and regulatory systems provide a basic framework for approving specific applications for development. If that is indeed the

**Table 11**

Environmental Decision-making and Management Framework for Beaufort Sea Development (Based on Actionable Recommendations in Panel Report)

Elements of Strategy	Terms & Conditions for Approval	Operational Requirements including Administrative Systems	Long-term Research and Monitoring Needs
<div>Upon approval, oil production can commence within the region in a small-scale (15,000 m<sup>3</sup> oil/day) manner</div>	<p>The following must be in place in advance of production drilling:</p> <ul style="list-style-type: none"> <li>demonstrated oil spill response and clean-up capability</li> <li>approved contingency plans</li> <li>comprehensive compensation plan</li> <li>suitable arrangements for agencies and communities to manage socio-economic effects of growth</li> </ul>	<ul style="list-style-type: none"> <li>completion of sensitivity mapping</li> <li>establishment of oil spill trajectory models</li> <li>satisfactory evidence of training and employment of local people in clean-up procedures</li> <li>contingency plans for abandonment</li> <li>proposed under-ice repair methods for sub-sea pipelines, tested under field conditions</li> <li>single authority, Coast Guard empowered to administer, plan, and direct contingency operations</li> <li>minimum standards established for oil spill capability under various conditions and seasons</li> <li>regular testing to verify emergency response procedures</li> <li>preparation of integrated hazardous and toxic chemical strategy</li> </ul>	<ul style="list-style-type: none"> <li>the behaviour, detection and effects of oil spills in the Arctic marine, fresh-water, and terrestrial environment</li> <li>influence of artificial islands on the growth and break-up of landfast ice</li> <li>determination of fate of hydrocarbons, trace metals, and hazardous substances originating from industrial activities</li> </ul>

Department's position, then critics have a case regarding the impact of the process on policy making. Such an eventuality may give the Beaufort EA Panel pause for reflection about the thrust of their recommendations on government management. The main point for emphasis here, however, is not so much the reflections of the Panel or the intentions of DIAND in dealing with future or pending applications for Beaufort Sea oil and gas development; rather, it is the lack of any formal mechanism for the approval and implementation of recommendations

At present, this aspect of EARP is a vague addendum to panel review (or Initial assessment). This seriously compromises the credibility of the process. It is quite simply a waste of everyone's time to participate in public reviews if there is no systematic and visible follow-through. A minimum requirement is for public response and feedback by the initiating department. Better still, development control and review activities should become an operational element of EARP. Unless these are in place, the public review process constitutes a paper chase rather than a functional exercise.

## IN CONCLUSION: THE CONTRIBUTION OF THE PANEL'S REPORT

1. The Beaufort Sea EA Panel Report contained the information the initiator asked for in the terms of reference. It was reasonably comprehensive in treatment of the issues, responsive to the structure of public input, and quite definite in the principal recommendation made for the government.
2. The main findings of the report were reasonably well received by the parties most affected, namely government, industry, and the local communities of the impact zones. Environmental interests, however, were unenthusiastic about the utility of the report for subsequent project and policy decision-making.
3. A closer look at the main areas of criticism brings out the following points:
  - i) the basis for the principal conclusion drawn, regarding the environmental and social acceptability of building a small-diameter pipeline, is not entirely clear;
  - ii) the policy and institutional requirements for government management of Beaufort Sea oil and gas development were not incisively examined; and
  - iii) the various recommendations put forward are not well organized in terms of the future sequence of decision-making.
4. On the other hand, the EIS was subject to considerable methodological qualification and the government position papers were descriptive rather than analytical. In these circumstances, the Panel's recommendation for a phased approach to oil and gas development and transportation may be seen as a flexible and appropriate response to coping with conditions of uncertainty and controversy. This is entirely in keeping with the present currency of sound practice in environmental assessment.
5. The key contribution of the Panel's report to government decision-making lies in its explicit and innovative definition of new rules of the game for Beaufort Sea oil and gas development. These incorporate, for example, an adaptive approach to policy design, based on experimental research and management. A subsequent shortfall was in not placing the principal recommendations regarding project development within an integrated framework for environmental management.
6. This requirement still appears to be outstanding and points to a more fundamental structural problem of the EA panel review process, namely the lack of continuity with subsequent phases of government decision-making. It is still unclear where the report now sits in this process and what influence it has on the ebb and flow of ongoing activities and decisions. More than any other factor, the absence of visible follow-up by initiating and participating agencies compromises the credibility of the process and undermines the rationale for undertaking a public review in the first place.

## **SECTION III**

### **THE LESSONS FOR PROCESS DEVELOPMENT**

Established in 1974, the federal Environmental Assessment and Review Process (EARP) has been operational for just over a decade. During that time, many thousands of projects and activities have undergone initial assessment and a score of major development proposals have been referred for formal review by independent panels. The very nature of this process has meant that the public phase of EARP is constantly evolving. Each panel review, to varying degrees, draws on previous experience, takes on distinctive characteristics reflecting the nature and scope of issues and interests at stake, and sets certain precedents for procedure as well as implications for policy. This section emphasizes the lessons that can be drawn from the Beaufort Sea Review for process development. Chapter 7 focuses on a future strategy for use and application of EARP to review regional development proposals; Chapter 8 deals with recommendations for change in procedure and practice that result from the Beaufort Sea experience.

## CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS ON FUTURE APPLICATIONS OF EARP TO REGIONAL DEVELOPMENT PROPOSALS

Until the Beaufort Sea referral, EA public reviews dealt with specific projects in a relatively advanced form of definition and design. The Beaufort Sea Panel, by contrast, was asked to assess the long-term, cumulative effects of a regional development scenario that encompassed production concepts, transportation alternatives, and specific facilities. It was also asked to clarify the policy context and management implications of the proposal. The scope of the inquiry generated both policy and methodological uncertainties and divergent expectations about the type of review which was appropriate. As Chapter 4 illustrates, the relationship between the function and the form of the process review was reflexive rather than linear.

In this chapter, the conclusions reached earlier in Section II are restated in terms of process development. The emphasis shifts from what was done to what can be done. A distinction is made between the suitability of the approach taken in the Beaufort Sea case and the generic capability and adaptability of the process. The crux of the comparison is whether FEARO can rely on a conventional EIS-based approach to review regional development proposals that combine policy, programme, and project-specific elements. Building on the Beaufort experience, an alternative model is proposed for this level of environmental assessment. The chapter concludes with guidelines and recommendations for implementing this approach.

### THE SUITABILITY OF THE APPROACH OF THE BEAUFORT SEA EARP

At first glance the vote of confidence in the capability of the conventional approach to review the Beaufort Sea proposal seems rather optimistic and misplaced. Only by making sweeping assumptions about project design and mitigation capability, including yet-to-be-proven technology, could the proponents reduce the issues to the format of analysis demanded of them. The methodological flaws associated with conventional site and project-specific analysis were exaggerated by the extended time and space scales of the investigation. As a result, the preparation of the EIS proved expensive, time-consuming, and not fully productive. Because the results were suspect, the information gathered was underutilized by the Panel in its final report.

In addition, the Beaufort Sea EA Panel was responsible for clarifying the policy and institutional frameworks for impact review. EIAs are difficult to prepare unless there is a reasonably clear framework of goals and strategies against which to evaluate what is being lost or foregone through the proposed development. This is why importance was attached earlier to the Panel's reluctance to press its inquiry into government

position papers characterized by description and promotion rather than evaluation and reflection. Without reasonable resolution of the policy context, the formidable challenge of environmental assessment of the Beaufort Sea proposal was further compounded.

The Beaufort Sea EA Panel tried to correct and compensate for the acknowledged limitations of the ES-based analysis through its principal recommendations. A phased approach to development, backed by monitoring and research, was promoted. It exemplified the view of impact assessment as an ongoing, iterative process, in which a restricted capability to predict significant changes before the fact underscores the importance of adopting an experimental approach to cope with uncertainty and learn from experience. The adaptive theme, unfortunately, was not pressed to its logical conclusion in the final report, because the Panel did not specify the future process for project review and management or spell out the lessons learned from its investigation.

Of some greater importance here is whether the Panel report could have been achieved in a more cost-effective manner, without recourse to an EIS. The critics of the process have flatly stated that the three-year Beaufort Sea review came up with nothing that a group of experts could not have generated in four weeks (Rees 1984). This perspective is a considerable oversimplification that takes no account of the collaborative effort necessary to foster and form an emerging consensus. At the same time, it is evident that the conventional process was not well suited to cope with the long-term, large-scale issues raised by the Beaufort Sea proposal. With the benefit of hindsight, the terms of reference, which implied that the Panel was more or less expected to rely on tried and tested procedures, were too conservative and understated the possibilities for greater adaptability in impact analysis and public review of an unprecedented proposal.

### AN ALTERNATIVE MODEL

Second guesses (and third opinions) of course, are easier than hard choices. It is, therefore, legitimate for adherents of the EIS-based approach to ask what alternatives might be appropriate for future exercises of this type or regional development programmes. An alternative model is outlined below, which assumes that the factors that influenced the choice of strategy for the Beaufort Sea Panel review will be modified as a result of that experience. The approach is designed to try and exploit the opportunities for creatively adapting the public phase of EARP to deal with industry-driven or government-led regional development programmes and proposals.

Large-scale development scenarios require a phased process of environmental assessment. The process might begin with a strategic analysis of development trends, issues, and implications. The purpose of this exercise would be to establish an integrated framework for managing development, i.e., one which links together the criteria and requirements for granting approvals at key phases in the evolving process. Such a framework should both guide and be changed by subsequent activities, Baseline research and monitoring data, for example, will progressively expand the context for undertaking background technology and risk assessments and, subsequently, project-specific impact analyses. The results of these exercises, in turn, may be cross-linked to assess, track, and manage the cumulative effects of development. Environmental assessment and review, in short, could be operationalized as a dynamic process aimed at gaining a holistic perspective on the course of change in which the sum is likely to be greater than the parts.

For this approach to work smoothly, the initial strategic review of environmental issues and implications assumes great importance. It is analogous to the scoping process for a conventional impact analysis (see Ross, Sadler, and Marshall 1986). The emphasis will be on determining the agenda of opportunities and problems and the options for capitalizing on the former and coping with the latter. Such an exercise should set the stage for dealing with development by indicating what is important, what is not, and why. The process, in other words, must be issue-oriented and value-centered, directed towards clarifying the problems at stake, the parties affected, and the inter-relationships of their goals, interests, and concerns (scaled at the local, regional, and national level). It should result in direction to government on how to integrate environmental and socio-economic considerations in development decision-making, providing an informed management perspective on whether, in what form, and how a proposal might move forward.

Several ways and means of executing this approach may be envisaged. An approach that builds on the present process might take the following form:

1. The preparation of background position papers by government agencies can critically examine the public policy and institutional regimes under which the proposal will be justified, assessed, approved, and implemented.
2. The development of an Environmental Management Strategy (EMS) by the proponents can outline a recommended approach to planning and pacing development. The EMS, among other things, might include:
  - a) a short description of the project;
  - b) a statement of need and alternatives;
  - c) a preliminary area-wide assessment of the ecosystems, resource uses, and human communities likely to be impacted; and
  - d) a prospectus of the baseline research, technical studies, and monitoring programmes necessary to advance from proposal-in-principle to implementation on the ground.

With this model, participating government agencies, the affected communities, and the interested public would have the opportunity to positively shape the pattern of future change rather than just react to specific proposals. The purpose of environmental assessment, in this form, is to identify strategies of economic development that are ecologically sustainable and socially acceptable, and to establish the research and management activities which are necessary to give them effect. Governmental assessment and review would be restructured as a creative exercise, focusing on the benefits as well as the costs of development. This approach, in turn, implies the need for a more integrative and collaborative process. A phased assessment or review may be moved in this direction by encouraging community and environmental interest to prepare their own EMSs (rather than oppose the proponents'). These documents would help to clarify and formalize the trade-offs at stake, and, more ambitiously, might identify opportunities for the mutual accommodation of interests through bilateral or multi-party negotiation.

In the North, regional or area-wide environmental assessment should also become an integral part of comprehensive land use planning. This form of assessment involves documenting ecosystems in dynamic, process-oriented terms. Environmental and social perspectives will be established on the mix of uses and activities appropriate to a planning region, district, or area. Area-wide or regional environmental assessment should lead to the identification of development thresholds and set the context for resource allocation. It will be followed by more detailed analyses to support site and project-specific impact assessment and management or the preparation of class assessments for discrete types of development activity. Within EARP, this process might be envisaged as a joint fact-finding exercise, in which community, government, industry, and other interested parties could work together to establish an agreed basis for the negotiation of mitigation and compensation measures.

Some parts of the North, notably the Beaufort Sea-Mackenzie Delta area, already have well-defined dual patterns of socio-economic development based on renewable and non-renewable resource use. The two systems still exist rather uneasily. In this context, the practical focus may better be defined as environmental reassessment for sustainable development; i.e., ensuring that the options for traditional livelihood do not become incrementally foreclosed through the cumulative effects of non-renewable resource development and the pressures of the wage economy.

## RETROSPECT AND PROSPECT

Many of the elements of the alternative model discussed above were contained in the Beaufort Sea EA Panel review in one form or another. Their redeployment along the lines recommended for future reviews invites comparison with the approach followed by the Beaufort Sea Panel. It is worth re-emphasizing, in this connection, that the alternative model has been developed with the benefit of experience and is oriented to what might be done in the future. The Beaufort Sea Panel was given a mandate of unprecedented scope and expected to rely on conventional powers and procedures to discharge it.

It also received neither the benefit of a coherent alternative early in the process, nor was there any broad momentum to abandon the tried and familiar. Once committed to the EIS approach, the Panel, proponents, and participants simply had too much time and effort invested in the strategy for a change to be practical.

The main lesson to be drawn in the light of these conclusions is that EARP is capable of dealing with regional development issues provided certain adjustments are made to conventional practice and procedure.

1. As presently organized, EA panel reviews are not well adapted to deal with regional development proposals (and initial assessments do not deal with them at all).
2. The development of better capability involves supplementing the conventional, technically-based inquiry with a more strategic approach aimed at clarifying the issues and interests at stake and the nature of the trade-offs involved. A prior-order requirement is some form of screening system for policy review and programme evaluation of the environmental impact of government energy, industrial, and economic strategies.
3. Depending upon circumstances, environmental assessments of regional development may be used for one or more of the following purposes:
  - a) to support government management and approvals of regional-scale development proposals or a series of related applications made by the private sector; and
  - b) to establish frameworks for subsequent project-specific and cumulative impact analysis in areas targeted for accelerated growth.
4. This approach merits further application north of 60°. A systematic assessment of the relationships between energy, mining, transportation, and other economic activities and the potentials and constraints of the northern environment(s) could help to establish carrying capacities for regional development. It can be undertaken as a "stand alone" review, to establish guidelines for technology, class, or project assessments and approvals, or to support the more comprehensive process of Northern Land Use Planning.
5. Environmental assessments of regional development policies, programmes, or proposals, whether these are initiated by government or industry, represent an important potential extension in the scope of activities for EARP. Such a capability is a vital prerequisite for delivering sustainable development. The importance of incorporating environmental considerations into the highest levels of decision-making is emphasized in the reports of both the World Commission on Environment and Development (1987) and the National Task Force on Environment and Economy (1987). The Beaufort Sea inquiry yields an important demonstration of the potentials and problems associated with the use and application of environmental assessment as an instrument for achieving these ends. Its lessons are particularly relevant now that the goals and

principles of sustainable development are beginning to permeate the thinking and practice of the federal and provincial governments.

## RECOMMENDATIONS FOR ACTION

The following recommendations are intended to support the course of action proposed above.

### **Recommendation 1: The scope of EARP should be formally extended to cover environmental assessment of regional development policies, programmes, and proposals.**

Environmental assessment must become more proactive and shape the course of development decision-making to meet the challenges identified by the World Commission on Environment and Development and National Task Force on Environment and Economy. As presently stated, federal policy directs participating agencies to apply EARP to programmes as well as specific projects and activities. In practice, however, this has seldom been followed. The Beaufort Sea (and more recently the Thompson-Fraser Corridor) review represented an important precedent and sign-post of future possibilities for strategic and phased analysis of regional development proposals. Further promotion of this form of assessment will be contingent upon the policy, institutional, and methodological advances discussed below.

### **Recommendation 2: A policy framework for the design and implementation of this approach should be incorporated within proposals to Cabinet for the overall reform of EARP.**

The present phase of public consultation on ways and means to improve EARP policies and procedures, which began with the release of the Green Paper (FEAR0 1987b), provides a major opportunity to review new initiatives and alternatives. It affords a systemic context for determining the particular place of environmental assessment of regional policies, programmes, and proposals. A consideration of the role and relationships of the Beaufort Sea review to government decision-making supports the view that many of the problems of EARP result from the inadequacies of the broader framework of public policy. The present process, moreover, is not well equipped to compensate for these deficiencies because it relies on an EIS-based format for project-specific review. Equally clearly, the extension of EARP to prior-order development decision-making should be undertaken as a support to, rather than a surrogate for, comprehensive resource management and land use planning.

### **Recommendation 3: Environmental assessment of large-scale regional development scenarios should form the starting point of a phased and coordinated process for ongoing review and control of component projects and activities.**

This approach is a key to building an integrated framework for environmental management and development planning in regions likely to undergo new patterns of economic growth. It is especially relevant to remote and northern regions. A model

for panel review begins with strategic analysis of environmental opportunities and constraints to proposed courses of action. This leads to the identification of options and requirements for ongoing assessment, monitoring, and decision-making. Within the context of EARP, a repertoire of additional mechanisms are needed to augment conventional panel reviews. In the case of the Beaufort Sea proposal, for example, many of the post-panel issues can be dealt with through existing regulatory procedures. Some project components may require further review. Depending on their environmental significance, there may be opportunities for small-scale reviews, lasting several weeks or months. These may be conducted by a single commissioner or a two- or three-person task force. Other issues, such as mitigation and compensation, may be best resolved by face-to-face negotiation either undertaken directly or with the assistance of a mediator or an arbitrator.

**Recommendation 4: A post-panel conference should be convened to assess recent progress in the review and management of Beaufort Sea development and to establish a coordinated framework for this purpose.**

The Beaufort Sea EA Panel did not specify the additional requirements for impact assessment and public review of the proposal for hydrocarbon production and transportation. A sufficient number of events and initiatives, in any case, have occurred to change the picture. These include the impact of changing market conditions on the proponent's timetable and proposed changes to northern planning, assessment, and regulatory processes. Such changes make the current managerial regime uncertain. It is important that DIAND provide a progress report to update the situation and make it more visible to public scrutiny and input. Beaufort Sea

hydrocarbon production and transportation carries fundamental consequences for the future of the North.

**Recommendation 5: The Canadian Environmental Assessment Research Council (CEARC), with support from FEARO and other interested federal and provincial agencies, should investigate the methodological and institutional questions associated with undertaking environmental assessment of development policies, programmes, and proposals.**

New methods of analysis and institutional arrangements for their conduct will be necessary to undertake environmental assessment of federal development decision-making at the non-project level. The alternative model for environmental assessment of development programmes put forward in this chapter has focused largely on large-scale or Beaufort-type initiative, which are likely to significantly affect ecological and social systems. Further research and development is necessary with respect to this concept, area-wide assessment in support of land use planning in the North, and environmental assessment of government economic policies and strategies in general. The principles of sustainable development provide a conceptual framework for this analysis. This framework, however, must be translated into operational terms; for example, by specifying the role of EIA in achieving sustainable development and in influencing the course of economic decision-making. CEARC should promote this type of appraisal (perhaps in conjunction with other institutions such as the Science Council of Canada). CEARC is also well placed to undertake subsequent research into the tools and techniques for integrating environmental and economic analysis. These initiatives would constitute a timely response to the agenda for action set out in the report of the National Task Force on Environment and Economy.

## CHAPTER 8: CONCLUSIONS AND RECOMMENDATIONS ON REVIEW PRACTICE AND PROCEDURE

While the Beaufort Sea EA Panel was conservative in choice of strategy, it was innovative with respect to review practice and procedure. A multi-component process was put into place to meet the mandate. In retrospect it appears to have formalized and extended more changes to the process than all previous northern environmental reviews combined. Chapter 5 dealt in detail with these. The focus of this chapter is on applying this experience to reorganize and improve panel review practice and procedure.

An effective process is defined as one that will implement and integrate the three r's of EIA: rigorous analysis, responsive consultation, and responsible administration. It will be based upon a more disciplined approach to determining key issues, to focusing the EIS and other documents, and to evaluating their findings. With this infrastructure in place, flexible measures for fostering public involvement and maintaining accountability can be custom-tailored to the circumstances.

### A DISCIPLINED APPROACH TO ENVIRONMENTAL ASSESSMENT

Every panel faces the continuing problem of being overly consumed by marginal matters, stalled by the volumes of paper, and thereby overtaken by lengthening time frames for public scrutiny and review. By reason of the scope and complexity of its mandate, the Beaufort Sea EA Panel had to reconsider the conventional procedures for analyzing issues and managing data. The process was, in fact, punctuated by several attempts to refocus the review on significant issues. The Panel did not complete this task until relatively late in the game, just prior to the final round of public hearings. At that time, of course, the EIS and other documents had been received in completed form. Previous attempts at scoping and focusing, notably at the EIS guidelines meetings, were not completely successful. Until the issuance of the Statement of Deficiencies, the Panel was unable to give the necessary degree of guidance to the proponent to bring the information-gathering process to a close, or to reflect repetitive interventions and discussions (which continued throughout the final round of public hearings). More than any other factor, this prolonged the length of time taken to complete the review.

At the same time, there were extenuating circumstances. The issues were complex, interconnected, and of such fundamental importance to northern peoples that a degree of restatement of concerns was in order. Equally important, the innovations incorporated in the issues seminar, EIS guidelines meetings, and the pre-hearing issues analyses contained important procedural lessons that future panels can profitably adopt. The Beaufort Sea experience, above all, underscores the opportunities for restructuring the process to achieve a more disciplined approach.

**Recommendation 1: The conventional EA Panel review process should be reorganized into the following stages to encourage a more systematic and cost-effective examination of proposals:**

- a) establishing the mandate;
- b) notifying the public;
- c) scoping the issues;
- d) focusing the analysis; and
- e) evaluating the EIS and other documents.

Each stage conforms to an important category of activity that sets the stage for the next one to proceed smoothly and efficiently. The Beaufort Sea review, by reason of its scope, exemplified the difficulties that occur when the process becomes drawn out by uncompleted tasks continuing into and compounding subsequent phases. Even more importantly, it demonstrated the potential practice and procedures by which this mold can be broken. Specific recommendations and observations on these follow.

**Recommendation 2: The terms of reference for EA panels should be the subject of joint negotiation between the initiating agency and FEAR0 (on behalf of their respective ministers), with provision for consultation with affected or interested parties prior to finalization.**

At present, the establishment of terms of reference for EA panels is a relatively "ad hoc" procedure conducted internally within government. It begins with a letter of referral to the Minister of the Environment that includes conditions for the conduct of the review. This is subject to discussion between FEAR0 and the initiating agency prior to the Minister(s) issuing final terms of reference. Soundings on public concerns are gathered informally and incorporated implicitly within the initial draft. Thus, terms of reference are often subject to subsequent challenge on the grounds of their relevance to various intervenors. In the case of the Beaufort Sea, this process continued well into the later stages of the review. An important corollary of a more systematic process is the expeditious appointment of a panel and its involvement in the finalization of the mandate.

**Recommendation 3: Early public notification of the background, objectives, and scope of the review should be made through a prospectus prepared by the panel secretariat and a description of the proposal prepared by the proponent(s).**

The purpose of the prospectus would be to clarify, at the outset, the mandate of the panel and the proposed approach to analysis and discussion of the problems under review.

Supported by a project description and a profile of impacts, this document should set out the substantive and procedural framework for the review. It might include:

- the terms of reference for the review;
- a statement of the core procedures for the conduct of the process and related matters requiring further consideration; and
- a preliminary analysis of the evolution and nature of the issues associated with the proposal.

The prospectus is envisaged as a base document for the process of scoping.

**Recommendation 4: Following the release of the prospectus, a series of scoping workshops should be held by the panel to further identify and/or confirm the concerns and interests affected by the proposal.**

The purpose of scoping is, first, to determine the range of issues and, second, to evaluate their significance. A two-day scoping workshop might, for example, spend part of the first day focused on completing the list of problems and the remainder of the time devoted to sorting out the important matters. This approach is envisaged as being more interactive and focused than either the Beaufort Sea issues seminar, or more recent and explicit scoping initiatives such as those conducted as part of the Lepreau II Inquiry. It might also be worth experimenting with the use of negotiation and mediation procedures to scope issues.

**Recommendation 5: EIS guidelines should set out explicit directions for focusing the analysis, based on a systematic analysis and organization of issue categories.**

The efforts made by the Beaufort Sea EA Panel to order and cluster the issues preparatory to the final round of public hearings represented a major advance in review practice and procedure. Since then, other panels have adopted this approach; it still, however, remains to be fully integrated with the preparation of draft EIS guidelines. Once this is done, and public scrutiny and comment is completed, the panel should be in a position to issue guidelines for the preparation of an EIS that will address significant matters in-depth, rather than attempt to cover everything superficially. As a result, both the proponent(s) and other participants will be in a better position to determine the sufficiency or deficiency of the document submitted.

**Recommendation 6: General or technical sessions to evaluate the EIS and other documents should be further restructured to deal systematically and creatively with the issues being addressed.**

The lead of the Beaufort Sea EA Panel in this area should be consolidated and extended. Scheduling hearing days to deal with particular themes does not go far enough. General sessions might be further subdivided around specific subjects. Within this framework, there should also be opportunities for experimenting with more interactive approaches to problem-solving based on direct or facilitated negotiation. Both

technical matters (e.g., risk analysis and contingency planning) and more value and interest-based concerns (e.g., mitigation and compensation) may be dealt with in this manner. Depending upon circumstances, a panel should have the discretion to direct such processes to begin ahead of the final round of public hearings with provision for full reporting and review of proceedings at them.

**Recommendation 7: The EA panel review process must be scaled to the issues and responsive to the publics involved.**

The review process set out in the previous recommendations is designed to promote a more systematic and hence cost-effective examination of issues. Extra steps are institutionalized within the present process with the intention of reducing the delays and vexations that come from repetitive intervention or discussion of the same concerns at different stages in the review. The restructuring is oriented toward major proposals that are especially complex and controversial. In other cases, a panel may see advantage in combining stages (e.g., scoping and focusing) or in otherwise changing procedures to streamline the process and make it more relevant to the people most affected. The discussion in the next section is intended to pursue this perspective.

## PUBLIC INVOLVEMENT IN THE PROCESS

EA panels must be concerned with the reality as well as the opportunity for public involvement. On occasion, this means affirmative action, custom designing the process to encourage the participation of people. Such an approach not only serves an important instrumental purpose; it also builds trust and confidence in the process over the longer term.

The Beaufort Sea EA Panel set new standards of responsiveness in terms of laying the groundwork for participation by northern residents and in the number and extent of public meetings held in or for local communities. It employed a greater range of procedures to encourage informed interventions than any previous panel. The proponents and the initiator also deserve credit for the efforts they expended to that end. As a result, the EA panel process moved beyond the conventional public meeting as a single reflex approach to consultation. This was not only a positive achievement in its own right; it indicates the way to a more responsive and imaginative design of participatory activities.

**Recommendation 8: A strategy for community involvement in EARP hearings should be prepared that identifies the objectives for participation and the procedures and resources for meeting them.**

The purpose of this plan would be to make the present "ad hoc" approach to public consultation more systematic and responsive to the character and capabilities of different communities of interest. It should be prepared by the panel secretariat and should be drafted in consultation with the publics involved. While the Beaufort Sea Panel Secretariat put in a tremendous amount of community preparation work, the full value of this effort was not realized because it was not preplanned or subject to organized follow-up. Much was left to

individual initiative and community requests. This is not to say that there is no room for such developments; only that they pay greater dividends in relation to a well-thought-out strategy.

**Recommendation 9: The format and agenda of community sessions should be established and designed in consultation with local residents.**

Community sessions, by definition, are meant to give local residents an opportunity to speak to their concerns in a setting where they feel comfortable. The present format has a number of positive features that have evolved through practice and precedent. How these might be further improved and made more relevant to the changing political culture of northern communities was the point of some debate at the Beaufort Sea evaluation workshop. There is much to be gained by discussing perceived needs for change directly with involved communities, and jointly negotiating appropriate arrangements with them.

**Recommendation 10: Whenever appropriate, EA panels should encourage the negotiation of impact management agreements between the proponents and the communities affected by the proposal.**

The rationale for pursuing this approach is three-fold. First, the development of mitigation and compensation packages necessary to offset local, environmental, and socio-economic losses can best be determined by those most directly concerned. Second, this approach provides a means of empowering local communities to take greater control of their future. Third, the negotiation process aims at a mutual accommodation of interests and thereby encourages a more proactive and positive approach toward development, one aimed at realizing goals and delivering benefits as well as avoiding losses and minimizing costs. All negotiations taking place under the auspices of an EA panel should be monitored to ensure that parties are adequately represented. Draft agreements must be scrutinized at subsequent public hearings and incorporated within the panel's final report to ensure the wider public interest is served.

**Recommendation 11: On an experimental basis, EA panels might also commission impacted communities and interest groups to prepare their own impact statements in support of either the negotiation of management agreements or more effective intervention in public hearings.**

This approach represents the logical culmination of the trends begun in community preparation for the Beaufort Sea EARP. It is based on the recognition that intervenors have become more sophisticated in their understanding of the issues and adept in the pursuit of their interests since the EA panel review process was established. Encouraging participants to the prepare alternative impact statements, which identify developmental benefits as well as costs, should help to improve the quality of information and discussion at public hearings (or around negotiating tables). Support resources will be needed to underwrite the research effort. One or two community and interest-based analyses may prove a more constructive and discriminating use of available funding for intervenors than the present federal policy (or more accurately, non-policy) of doling out limited funds among various consortia. The Beaufort

Sea experience, contrary to the prevailing ideology of participation, suggests this does little more than confirm previously entrenched positions more elaborately.

**Recommendation 12: A pre-session conference should normally be held to discuss the agenda and format of the general sessions.**

This area is presently under study by an independent task force. Once proposed changes have been received and reviewed, there may be little need for pre-session conferences to focus on procedures per se unless there is reason to depart from conventional practice. Instead, this mechanism may be better used to finalize the agenda and schedule of general sessions (see also Recommendation 6).

**Recommendation 13: A system for analyzing and displaying the content of inputs to public hearings should be developed for and employed by EA panels.**

The Beaufort Sea EA Panel went much further than its predecessors in developing a systematic approach to handling and storing information. One area where more could and should be done is in the processing of public inputs. The deliberations of the panel are materially assisted by the summary and comparison of the raw material provided by public comments. A commendable effort was made in this direction in the pre-hearing workbook prepared for the Beaufort Sea EA Panel, which included excerpts of key points made previously. This approach, however, needs to be taken to the next stage of devising a system to code, organize, and retrieve the content of public inputs. Several models are available for this purpose, ranging from simple frameworks to more complex, computer-based procedures. The review, selection, and employment of one of these would help to bolster the credibility of the process as well as the efficiency of panel deliberations.

## MAINTAINING ACCOUNTABILITY

The questions of accountability in EA panel reviews can be organized into two distinct categories. First, the conduct of the process must conform to prevailing standards of public administration based on such criteria as fairness, thoroughness, and efficiency. Secondly, there is the requirement to integrate the review process with the broader structure of government decision-making. This responsibility is incidentally that of the panel and is shared by FEARO and a range of participating government agencies.

On the first count, the Beaufort Sea EA Panel experienced a number of difficulties. Some of these have already been referred to. In the present context, the focus is on panel organization and review management. The main areas for improvement lie in the more disciplined use of technical specialists and in more coherent and incisive questioning of proponents and participating government agencies. Many critics and observers hold that the latter problem is largely the result of lack of legislative force behind EARP. This issue is being addressed as part of the present review of the overall process and will not be further considered here.

With the respect to the broader relationships of EARP, there is a critical need to achieve a more integrated framework of federal government decision-making. This is especially the case in the North. Constitutional devolution and recent and pending land claims negotiations have combined to fashion a complex set of institutional arrangements for environmental assessment, planning, and regulation. A comprehensive rationalization of this process, whether through northern deregulation or related initiatives, appears to be a long haul. In the interim, the development of protocols for the coordination of EARP with other established and emerging planning instruments is necessary.

**Recommendation 14: Technical specialists should be more fully integrated into panel organization with clearly defined support roles and responsibilities.**

In the Beaufort Sea review, an ambiguous and often ambivalent relationship existed between technical specialists and the EA Panel and by extension with other review participants. Many intervenors did not have a clear idea about the function of technical specialists. Specialists were perceived as quasi-independent resource people, available to all but restricted in their ability to help the Panel get to the facts of matters by an unspoken "arms-length" relationship. Better use of the talents and resources of technical specialists could be made at general sessions, by having them independently and rigorously pursue questions raised by proposals and interventions.

**Recommendation 15: FEARO should provide an intensive briefing for newly appointed panels and follow-up their familiarity with core procedures and expectations regarding the conduct of a review.**

Under Section 35(d) of the Environmental Assessment and Review Guidelines Order (1984), FEARO is responsible for providing advice and assistance "to ensure that there is procedural and policy constituency between the various public reviews by the panels." At present, this advice is tendered on a continuous but informal basis through panel secretariats, the executive secretary of which is invariably a FEARO staff member. On occasion, this kind of direction becomes strained because EA panels tend to strongly guard their independence; rightly so when matters affecting the substance of deliberations are involved. Early briefing of panel members on their responsibilities should be helpful in assisting the maintenance of process consistency. The Executive Chairman of FEARO, or his senior designate, should also monitor panel performance and operation to ensure reasonable conformity with procedures.

**Recommendation 16: FEARO, in cooperation with DIAND, territorial governments, and native organizations should convene a working conference to discuss the evolving relationship of environmental assessment and land use planning in the North with a view to improving the overall effectiveness of the process.**

As noted previously, the policy and institutional framework for northern development and conservation is undergoing rapid change. The territorial governments are evaluating their own approach to EIA. New institutional arrangements for this purpose have resulted from, or are pending, the settlement of

native land claims (e.g., the Inuvialut Review Process). Other related trends include the implementation of Northern Land Use Planning, the initiatives being taken to design northern conservation strategies, and the proposal to establish environment and economy round-tables in the two territories. Finally, public consultation on the reform of EARP is now underway. Once these activities have been reviewed and finalized by Cabinet, the time will be opportune to review the specific prospects for the coordination of environmental assessment and related procedures north of 60°. This review, ideally, should be integrated with the more specific post-panel assessment of progress on the review and management of Beaufort Sea development (see Recommendation 4, Chapter 7).

## LEARNING FROM EXPERIENCE

Environmental assessment and review has traditionally been conducted as a pre-decision process that helps to establish the terms and conditions for project approval. It is, by definition, a predictive exercise, directed at what will or may happen. The paradox of impact analysis and evaluation is that, until recently, little attention was paid to what actually happens. A greater investment of time and resources should now be directed toward project implementation and impact management. The lack of continuity between EA and subsequent phases of development control acts as a major constraint on improving process effectiveness. Unless monitoring, audit, and evaluation capabilities are incorporated into the decision-making process, we are not in a position to cope with surprise or learn from experience at either the project or policy level.

Within the context of EARP, the linkages between panel review, government decision-making, and project implementation remain fragmented and opaque. The Beaufort Sea review was a further case in point. It is still unclear whether and how Panel recommendations on monitoring, mitigation, and management will be implemented. The fate of the recommendations are closely tied to the credibility of EARP. Review participants, who have devoted time and effort to intervene in the process, should know whether the report of the Panel is being implemented — or not acted upon for good reason. At present, the process is incomplete and the absence of mechanisms for post-Panel response to the report and subsequent feedback on monitoring and management activities tends to defeat the very purpose of holding a public review. The following recommendations attempt to respond to this problem.

**Recommendation 17: FEARO and other government agencies implementing EARP should establish protocols and procedures for post-panel analysis and evaluation.**

The purpose of this follow-up system will be to complete EARP, converting it from a static and linear to a dynamic and integrated system. A series of inter-related activities may be envisaged, including:

- formal reporting on the disposition of panel recommendations;
- surveillance of project implementation terms, and conditions;

- effects monitoring for impact management and improved predictive understanding;
- audit of environmental conformance and management practice where data permit; and
- broadly-based evaluations of the effectiveness of EIA processes, procedures, and methods.

The collation of information, the dissemination of results, and their application to future actions will improve both project management and the general state of the art of environmental assessment and review; EARP thus remains an appropriate acronym, provided the review component is understood to include ex-post evaluations for matching prediction against performance and intent against practice.

**Recommendation 18: All EA panel reviews should be subject to formal evaluation to draw out their methodological and procedural lessons for process development.**

A modest investment in post-panel reviews of experience can pay dividends in the form of improved practice. FEAR0 should designate all panel reviews as management experiments, with a view to gaining a better process understanding in one or more of the areas of impact analysis, public consultation, and administrative procedures. Each review will afford a different emphasis for research and development. This should be established in consultation with the EA panel at the outset of the review. A proposed decision protocol for post-panel research and monitoring activities in association with EA panel reviews is set out in Appendix 3.

**Recommendation 19: EA panels should be asked to provide a statement on the effectiveness of review practice, methods, and procedure as part of their final report.**

Panel observations on the capability of analytical and consultative techniques should prove particularly valuable. The state of the art of EIA, SIA, and risk analysis circumscribe review practice and influence performance. Further improvements in these areas can be derived from first-hand evaluations of experience in testing situations. It will also be useful to gain a better understanding of the structure of panel deliberation, which involves evaluation of public inputs, weighing of incommensurables, and linking facts and values. A reflective analysis of the difficulties encountered in this respect may lead over time to more systematic criteria and standards for making judgements, rather than leaving individual panels to find their own way.

**Recommendation 20: FEAR0 should establish a corporate archive of the lessons of public reviews by organizing, consolidating, and updating post-panel evaluations, case studies, and related information.**

Evaluation must be a continuing process rather than a one-time analysis to realize its full value for process development. This activity must contribute to and be supported by a well-structured and accessible "corporate memory" so that those planning future activities can benefit from past experience. At present, the corporate memory of FEAR0 is essentially unorganized and is difficult to access. It is contained in the "walking encyclopedias" of practice represented by previous and present employees and in the range of project files. The background task in establishing an effective process evaluation capability will be to systematically organize and consolidate this material into an archival record of review practice and results. Such a record should be constantly revised as new information from past and present reviews becomes available.

## APPENDIX I

### BEAUFORT SEA ENVIRONMENTAL ASSESSMENT REVIEW EVALUATION PROJECT

#### SHORTFORM QUESTIONNAIRE

##### *Orientation*

- a) Please go through the questionnaire and answer all questions. If a question is outside of your experience with the Beaufort Sea review process or you do not hold any views one way or the other, please mark the Don't know/No opinion box.
- b) Space is available under each response check for amplifying or additional comment. It will be especially helpful to the evaluation if we understand the reasons for your response.

##### *General*

1. Which public meetings of the Beaufort Sea EARP did you attend?

Tick as many categories as apply.

-Issues Seminar      -General Sessions  
-Draft EIS              -Community Sessions  
Guideline Meetings  
— Pre-session Conference

2. In what capacity did you attend, i.e., representing yourself or an organization?
- Self      — Organization (please specify)

##### *A. The Nature of the Review*

1. Do you think the early environmental assessment and review of proposed hydrocarbon development was a good idea?

-Yes —In part      -No      —No opinion /  
Don't know

2. Was the proposal sufficiently developed to permit adequate assessment and review of its potential effects?

-Yes -In part      -No      —No opinion /  
Don't know

3. Was the review reasonably well integrated with other government initiatives and processes for planning and regulating possible developments in the Beaufort Sea region?

-Yes -In part      -No      —No opinion /  
Don't know

4. Was the EARP panel, in retrospect, the appropriate vehicle to undertake the task at hand?

-Yes -Partly      -No      —No opinion /  
Don't know

##### *B. The Terms of Reference and Panel Interpretation*

1. Did the terms of reference established for the Beaufort Sea EARP panel provide reasonably clear guidance to the panel on the scope of the review?

-Yes -Partly      -No      —No opinion /  
Don't know

2. Was the EARP panel consistent in interpreting its mandate during the course of the review?

-Yes -Partly      -No      -No opinion/  
Don't know

3. Was the panel responsive to the emerging issues generated by possible hydrocarbon development in the Beaufort Sea?

-Yes -Partly      -No      -No opinion /  
Don't know

##### *C. The Information Provided*

###### *(i) About the Process*

1. Was enough information available about the review process?

-Yes -Partly      -No      -No opinion/  
Don't know

2. How would you rate the quality of information on the review process?

-Good-Sufficient -Poor -No opinion/  
Don't know

3. Was the purpose of each step of the process clearly explained?
- Yes - Partly - N o -No opinion /  
Don't know

(ii) *About the Proposal*

1. Was enough information provided by the proponent on the proposal?
- Yes - Partly - N o — No opinion /  
Don't know

2. Was the information provided reasonably clear?
- Yes - Partly - N o -No opinion /  
Don't know

3. Was the right kind of information on the proposal available for your purposes?
- Yes - Partly - N o — No opinion /  
Don't know

(iii) *About Government Policies*

1. Was enough information provided on the government policies bearing upon the proposal?
- e s - Partly - N o — No opinion /  
Don't know

2. Was the information provided reasonably clear?
- Yes - Partly - N o -No opinion /  
Don't know

3. Was the right kind of information on policies available for your purposes?
- Yes - Partly - N o -No opinion /  
Don't know

D. *Review Procedures*

(i) *Issues Seminar*

1. Did the issues seminar provide an understanding of the process?
- Yes - Partly - N o -No opinion /  
Don't know

2. Did the issues seminar provide an understanding of the proposal?
- Yes - Partly - N o -No opinion /  
Don't know

3. Was the issues seminar a useful forum to meet other participants?
- Yes - Partly - N o -No opinion /  
Don't know

(ii) *Draft Guidelines for the Environmental Impact Statement*

1. Were the draft guideline meetings helpful?
- Yes - Partly - N o -No opinion /  
Don't know

2. Was the public review period sufficient?
- Yes - Partly - N o -No opinion /  
Don't know

3. Was the public response to the draft guidelines adequately addressed by the panel?
- Yes - Partly - N o — No opinion /  
Don't know

4. Were the final guidelines issues by the panel relevant for directing the preparation of the EIS?
- Yes - Partly - N o — No opinion /  
Don't know

5. Was the panel decision to issue a deficiency statement on the EIS submitted by the proponent justified?
- Y e s - Partly - N o -No opinion /  
Don't know

(iii) *Public Hearings*

1. Was the division into community and general sessions appropriate?
- Yes - Partly - N o -No opinion /  
Don't know

2. Did the written rules of procedure for the sessions provide a sound basis for their conduct?
- Yes - Partly - N o -No opinion /  
Don't know

3. Was the pre-session conference helpful in clarifying the rules of procedure?
- Yes - Partly - N o -No opinion /  
Don't know

4. Did the way the community sessions were run encourage participation?

—Yes — Partly — No — No opinion /  
Don't know

5. Was the role and purpose of the community sessions clear?

- Yes - Partly — No — No opinion /  
Don't know

6. Did you feel that a real effort was made to listen to community concerns?

—Yes --Partly — No — No opinion /  
Don't know

7. Did the way the general sessions were run encourage participation?

—Yes — Partly — No — No opinion /  
Don't know

8. Was the role and purpose of the general sessions clear?

—Yes - Partly — No — No opinion /  
Don't know

9. Did the general sessions provide a reasonably thorough examination of information on the proposal and its implications?

--Yes - Partly -- No — No opinion /  
Don't know

10. Was the organization of the general sessions and the establishing of particular time slots for set topics an effective way of examining information?

- Yes - Partly - No — No opinion /  
Don't know

#### E. *The Roles of the Key Parties in the Review*

1. Did you feel the panel was in control of the process?

- Yes - Partly - No -No opinion /  
Don't know

2. Were panel rulings and interpretations on the process impartial?

- Yes - Partly - No — No opinion /  
Don't know

3. Were panel rulings and interpretations on the process consistent?

- Yes - Partly - No — No opinion /  
Don't know

4. Was the panel's examination of information at the general sessions effective?

--Yes — Partly — No — No opinion /  
Don't know

5. Was the panel's handling of the community sessions appropriate?

- Yes — Partly -- No — No opinion /  
Don't know

6. Were the technical experts retained by the panel effective in their examination of information?

- Yes - Partly - No — No opinion /  
Don't know

7. Did the proponents generally respond adequately to public concerns expressed during the process?

- Yes — Partly - No — No opinion /  
Don't know

8. Did the proponents respond candidly to questions in the community session?

- Yes — Partly - No — No opinion /  
Don't know

9. Did the proponents respond candidly to questions in the general session?

- Yes - Partly - No -No opinion /  
Don't know

10. Did government agencies participate effectively in the general sessions?

- Yes - Partly - No -No opinion /  
Don't know

11. Did intervenor groups participate effectively in the general sessions?

- Yes - Partly - No -No opinion /  
Don't know

F. *Contribution of the Review*

1. Overall, was the review conducted efficiently, i.e., without undue delay given the magnitude of the task?

- Yes - Partly - No — No opinion /  
Don't know

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2. Overall was the review conducted fairly, i.e., without bias towards any party?

- Yes - Partly - No -No opinion/  
Don't know

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3. Do you think of the review has provided the bases for sound management of the development proposal if it proceeds?

- Yes - Partly - No -No opinion/  
Don't know

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4. If you answered "In part" or "No" to Question 3, do you think further public review will be necessary to ensure sound management?

- Yes - Partly - No -No opinion/  
Don't know

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## APPENDIX 2

### A NOTE ON STRENGTHENING THE SCIENTIFIC BASIS OF EA PANEL REVIEW

The technical and methodological issues associated with the Beaufort Sea EA Panel review have been considered only in terms of their broad role and impact on the overall process. It is evident, even from this limited scrutiny, that the analytical aspects of the enquiry warrant further examination. Many of the concerns and doubts expressed about the scientific assumptions and premises that underlie present approaches to environmental assessment (e.g., Boothroyd and Rees 1984) loom much larger in the context of the time and space scales adopted for the Beaufort Sea Review. The challenges of coping with the uncertainties encountered with region-wide, early-stage development programs are addressed as some length in Section III.

As an adjunct to that framework, it may be useful to briefly outline and exemplify the changes which might be entertained to strengthen the scientific basis of EA panel review. The proposal draws from the salient findings of a recent U.S. study of ways to improve the scientific content and methodology of EIA, namely that the most promising route to reform is political rather than technical (Caldwell *et al.* 1983). It is specifically an attempt to apply Holling's (1978) paradigm of adaptive environmental assessment and management by repackaging a series of recommendations for improving the technical rigor of the process and/or coping with uncertainty (e.g., Beanlands and Duinker 1983; Environmental Resources Ltd. 1985; and Committee on the Applications of Ecological Theory 1986). Our starting point is recognition of our incomplete understanding of ecological and social processes and cause-and-effect relationships, and the limited time and resources usually available for impact studies. Bearing these constraints in mind, the technical problematique in environmental assessment is how to gather, analyze, and interpret the "right" information, i.e., the data that will result in timely and informed decisions on the problems under investigation.

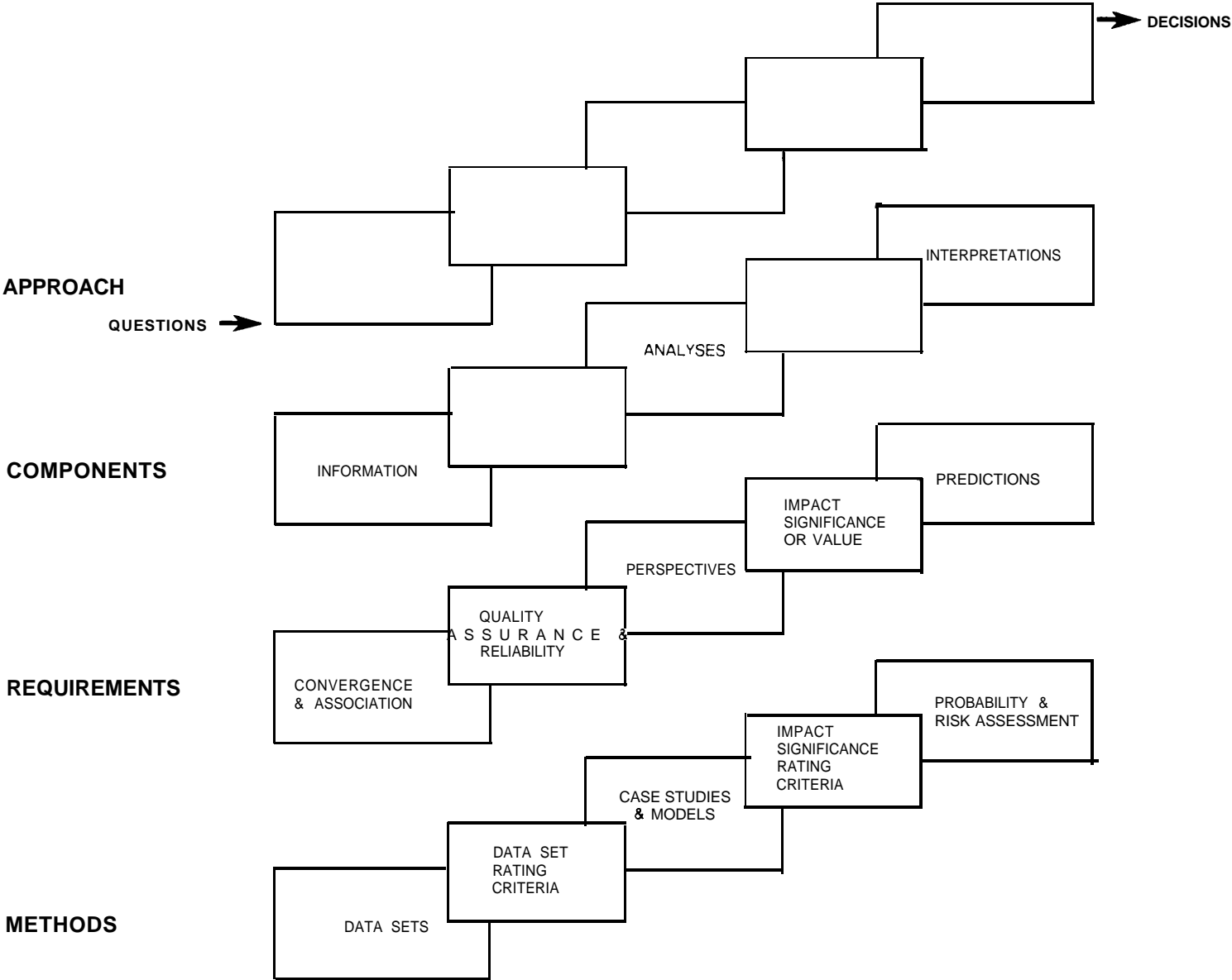
Figure 5 sets out key requirements and methods for EIA problem-solving; Figure 6 applies the proposed approach to Beaufort Sea development questions. A five-step generic process, linking questions to decisions, is outlined. It encompasses:

- the acquisition and organization of information into data sets;
- the rating of data sets with respect to their reliability and comparability;
- the establishment of perspectives, including cause-and-effect hypotheses on the natural variability and assimilative capacity of potentially impacted systems;
- the determination of criteria for establishing the significance of effects; and
- the estimation of the probability of impacts and risks associated with project-induced change.

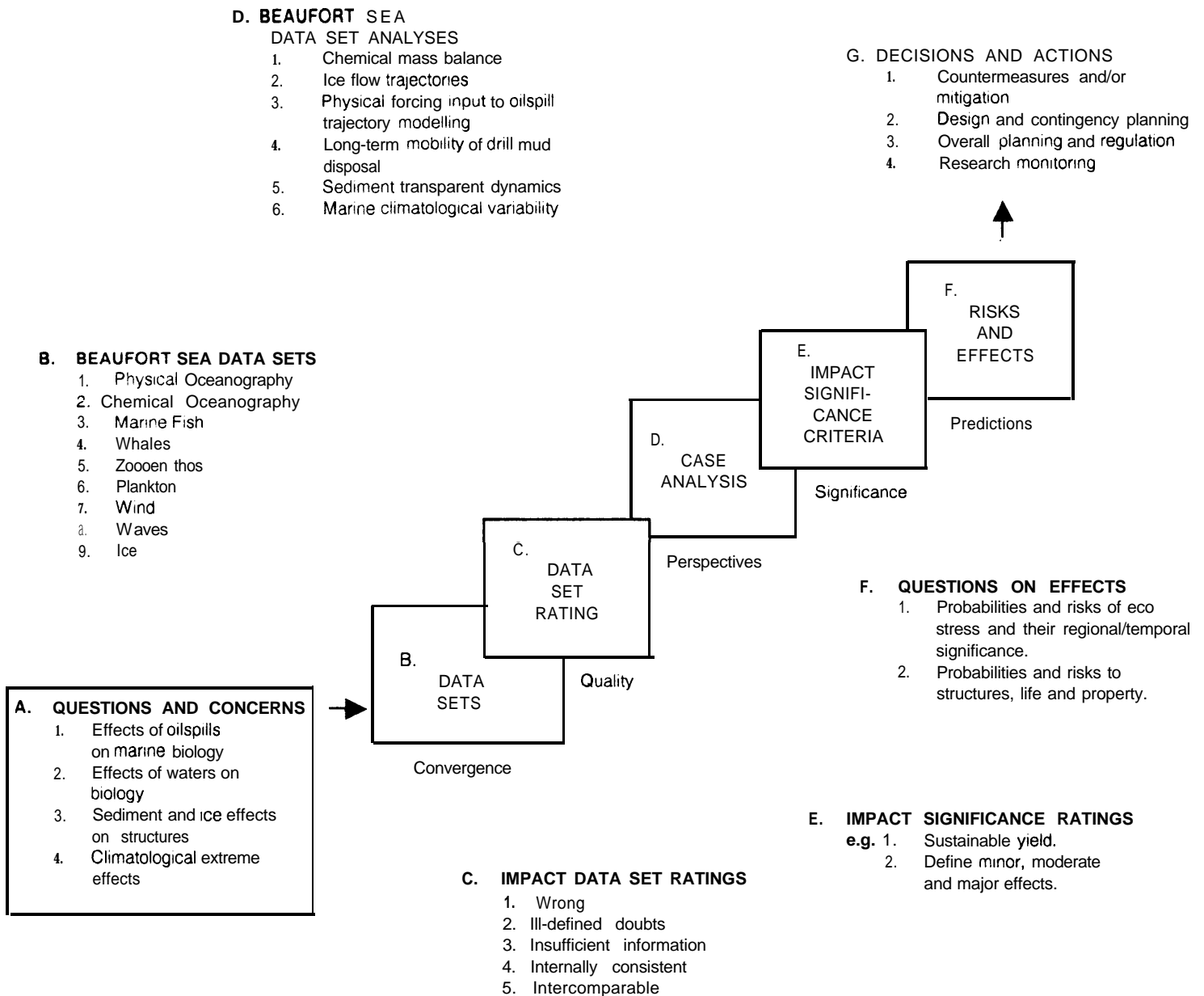
The entry point, whether by traditional initial assessment techniques or negotiation-based scoping, is the identification of key questions which serve to focus the environmental assessment.

In the application to the Beaufort Sea development (Figure 6) these issues have been reduced to two basic problem areas: the protection of life and property; and the maintenance of Arctic ecology and species (*pace* IUCN 1980). A brief accounting of the types of relevant information, criteria for analysis, and modes of interpretation that might provide the best practicable basis for problem-solving and decision-making are then outlined. The key to decision-relevant analysis lies in the specification, however rough and ready, of levels of confidence in impact and risk prediction so that those responsible for project approval and management have a reasonable appreciation of the underpinnings of choice, and so that panel review can be exploited for research and management benefits (see Appendix 3).

**Acknowledgement:** The work reported in this section was undertaken in collaboration with Alan Cornford, in the initial phase with inputs from Jon O'Riordan (see Cornford, O'Riordan, and Sadler 1985). It is part of a larger ongoing research project on the institutional and scientific framework for environmental assessment.



**Figure 5.** Scientific Method for EIA  
Source: Cornford, O’Riordan, and Sadler (1985: 54)



**Figure 6.** Application of Proposed Approach to Beaufort Sea Development  
Source: Cornford, O'Riordan, and Sadler (1985: 65)

## APPENDIX 3

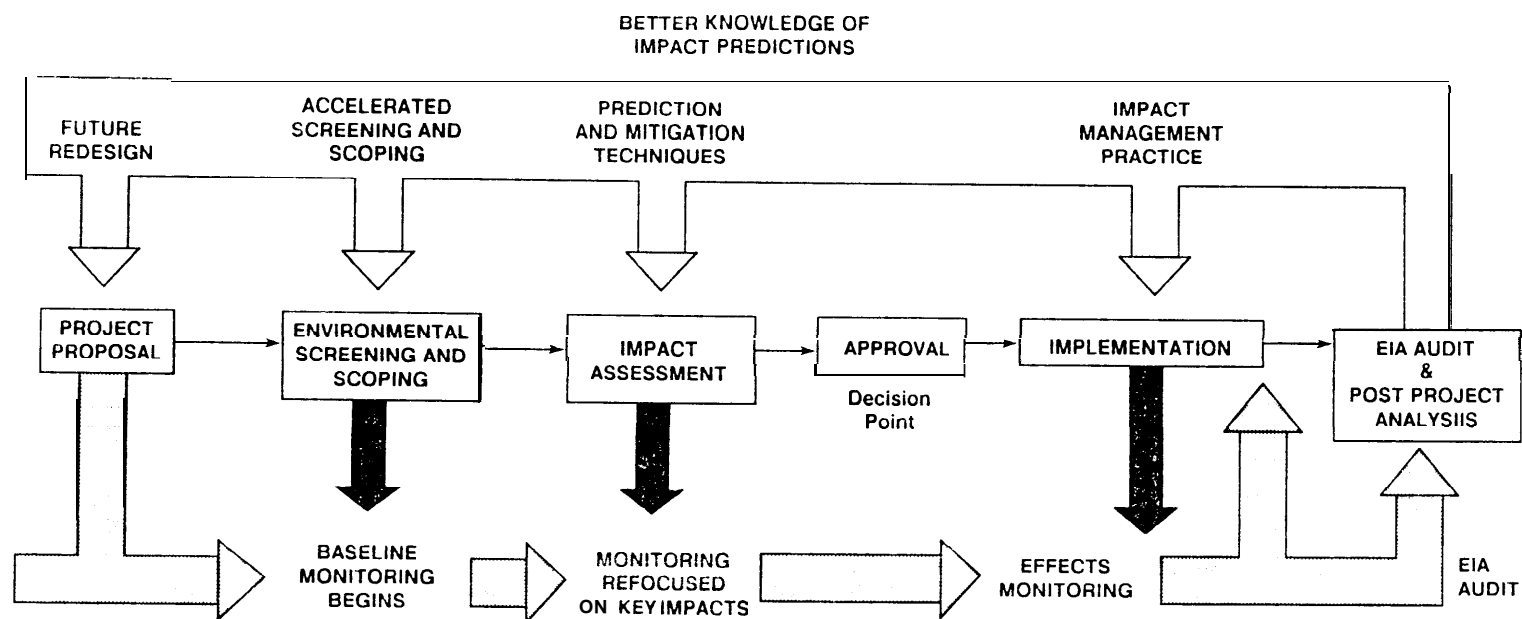
### RESEARCH AND MONITORING INITIATIVES AND EA PANELS

Environmental assessment (EA) panels, by definition, grapple with complex and controversial issues. To date, remarkably little effort has been made to capitalize on this situation from a research and developmental perspective. Each review incorporates a particular scientific and management challenge. EA should be seen as an opportunity to designate “projects as experiments,” i.e., to establish research and monitoring programs as part of a conscious design for learning by doing. With explicit and early recognition of this potential, the contribution that EA panel review makes to problem-solving could extend well beyond immediate inputs to project approval and management. The process could itself become the vector for improvement in the practice of EIA and future project redesign.

The particular focus of attention here is on baseline and effects monitoring, experimental research, and EIA audit for the purposes of improving scientific understanding and technical capabilities. For each review, the scientific and methodological objectives for gaining a better understanding of project-induced impacts and the utility of predictive and mitigation measures could be established at the outset on the basis of scoping activities. Such objectives, e.g., use testing a new approach, should be jointly established by the proponent(s), initiator, and other participating government (and corporate) agencies as an integral part of the preparation of the EIS or other review activities. At the outset, it will be necessary to plan the ongoing requirements for research and monitoring programs, including EIA audits designed to relate prediction and practice to performance.

This approach should be incorporated into the large effort of building the implementation and evaluation phase that is necessary to provide continuity and feedback within EARP (see Chapter 8). A general protocol, for example, might be envisaged that links follow-up activities and project terms and conditions via correlation with levels of confidence in impact prediction (see Appendix 2). Generally speaking, the greater the uncertainties associated with the effects of proposed development, the more stringent will be the terms and conditions for approval, and by extension, the greater the requirements for effects monitoring, post-EIS analysis, and audit and evaluation. Table 12 summarizes these relationships. Figure 7 illustrates a possible framework for focusing and organizing problem-oriented research and monitoring as value-added activities, i.e., those that can pay long-term dividends in the form of improved understanding and practice. By restructuring impact analysis in this manner, making a research virtue out of a management necessity, we can begin to operationalize the notion of adaptive and integrative environmental assessment (as discussed in Chapter 2). Over time, supported by other activities for pooling and disseminating information, this approach should lead to a more cost-effective review process, which is, after all, the interest of all participants.

**Acknowledgement:** The monitoring and audit frameworks referred to in this section are based on work reported in Appendix 2 and further developed in collaboration with Matthew Davies, Centre for Environmental Planning and Management, University of Aberdeen (Davies and Sadler 1989).



**Figure 7.** A Framework for Monitoring and Audit in EIA  
Source: Sadler (1988)

**Table 12**

A Decision Protocol for EIA Development: Linking Confidence Limits and Project Approvals

CONFIDENCE LEVELS	DATA SET RATINGS	PROCESS KNOWLEDGE	APPROACH PERMITTED	APPROVAL	COLOUR CODE	TERMS AND CONDITIONS OF IMPLEMENTATION	FOLLOW-UP ACTIVITIES
High/Factual	Reliable	Proven cause-effect relationships	Statistical prediction	Unqualified	Green	Normal standards	Surveillance
Fairly High	Sufficient	Evidence for hypotheses	Quantitative simulation	Qualified	Yellow	Special regulations	Monitoring Performance audit
Fairly Low	Insufficient	Postulated linkages	Conceptual modelling	Conditional	Orange	Stringent controls Projects as experiments	Comprehensive evaluation of research and management findings
Low/Intuitive	Absent or Unreliable	Speculation	Professional opinion	Deferral	Red	Pilot project Special studies	All above activities

Source. Sadler (1987)

## REFERENCES

- Abt, C. (ed.) 1976. *The Evaluation of Social Programs*. Beverly Hills: Sage Publications.
- Beanlands, G. E., and P. N. Duinker. 1983. *An Ecological Framework for Environmental Impact Assessment in Canada*. Institute for Resource and Environmental Studies, Dalhousie University, Halifax; and Federal Environmental Assessment Review Office, Hull, Quebec.
- Berger, T. R. 1977. *Northern Frontier Northern Homeland*. The Report of the Mackenzie Valley Pipeline Inquiry. 2 vols. Supply and Services Canada, Ottawa.
- Bisset, R. 1980. Problems and issues in the implementation of EIA audits. *EIA Review* 1 (4): 379-396.
- Bissett, D., and K.B. Waddell. 1987. Public Involvement in the Beaufort Sea Environmental Assessment and Review Process. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*, Vol. II., 557-607 (B.Sadler, ed.) Supply and Services Canada, Ottawa.
- Boothroyd, P., and W. Rees. 1984. *Impact Assessment from Pseudo-Science to Planning Process: An Educational Response*. Discussion Paper No. 3., School of Community and Regional Planning, University of British Columbia, Vancouver.
- Bregha, F. 1982. Arctic Pilot Project: CARC's Memorandum to Cabinet. *Northern Perspectives* 10 (3): 1-12.
- Brody, H. 1981. *Maps and Dreams*. Vancouver: Douglas and McIntyre.
- Caldwell, L.K. et al. 1983. A Study of Ways to Improve the Scientific Content and Methodology of Environmental Impact Analysis. School of Public and Environmental Affairs, Indiana University, Bloomington, Indiana.
- Canadian Arctic Resources Committee. 1985. *National and Regional Interests in the North*. Ottawa.
- Canadian Environmental Assessment Research Council. 1986. *Philosophy and Themes for Research*. Hull, Quebec.
- Canadian Environmental Assessment Research Council, and U. S. National Research Council. 1985. *Cumulative Environmental Effects: A Binational Perspective*. Canadian Environmental Assessment Research Council, Hull, Quebec.
- Case, E.S., P.Finkle, and A.R. Lucas. (eds.) 1983. *Fairness in Environmental and Social Impact Assessment Processes*. Canadian Institute of Resources Law, University of Calgary, Calgary, Alberta.
- Committee on the Applications of Biological Theory to Environmental Problems, Commission on Life Sciences, U.S. National Research Council. 1986. *Biological Knowledge and Environmental Problem Solving: Concepts and Case Studies*. Washington, D.C.: National Academy Press.
- Cornford, A.B., J. O'Riordan, and B. Sadler. 1985. Planning, assessment and implementation: A strategy for convergence. In *Environmental Protection and Resource Development, Convergence for Today*, 47-75 (B.Sadler, ed.) Calgary: University of Calgary Press.
- Couch, W. J. 1988. *Environmental Assessment in Canada: 1988 Summary of Current Practice*. Supply and Services Canada, Ottawa.
- Davidson, M. A. 1987. Environmental management of the Alaska Highway gas pipeline pre-build: A hindsight analysis. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*, Vol. 1, 235-258 (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Davies, M., and B. Sadler. 1989. *Environmental Monitoring and Audit: Guidelines for Post-Project Analyses of Development Impacts and Assessment Methodology*. Environment Canada, Ottawa.
- Davies, P. 1984. The Beaufort Sea-Mackenzie Delta environmental and socio-economic assessment. *APOA Review* 7 (2): 11-14.
- Department of Indian Affairs and Northern Development (DIAND). 1985. *Beaufort Sea Environmental Assessment Review Process: A DIAND Perspective*. Ottawa.
- Department of Indian Affairs and Northern Development (DIAND). 1972. *Canada's North, 1970-1980*. Ottawa.
- Deutscher, I. 1976. Toward avoiding the goal-trap in evaluation research. In *The Evaluation of Social Programs*, 251-253 (C. Abt, ed.) Beverly Hills: Sage Publications.
- Dirschl, H.J. 1981. *The Lancaster Sound Region: 1980-2000*. Green Paper, Indian and Northern Affairs Canada, Ottawa.
- Dosman, E. 1975. *The National Interest*. Toronto: McClelland and Stewart.
- Emond, P. 1978. *Environmental Assessment Law in Canada*. Toronto: Emond-Montgomery.
- Energy, Mines and Resources Canada. 1976. *An Energy Strategy for Canada: Policies for Self-Reliance*. Ottawa.
- Energy, Mines and Resources Canada. 1980. *The National Energy Program*. Ottawa.
- Environment Canada. 1983. *Northern Perspectives*. Ottawa.

- Environmental Resources Ltd. 1985. *Handling Uncertainty in Environmental Impact Assessment*. Minister of Public Housing, Physical Planning and Environment Protection, 's-Gravenhage, Netherlands.
- Erickson, D., and G. Kennedy. 1987. Regional public involvement in the Beaufort Sea Environmental Assessment and Review Process. In *Audit and Evaluation in Environmental Assessment and Management: Canadian International Experience*, Vol. II, 608-621 (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Everitt, R. R., and N.C. Sonntag. 1987. Environmental Issue Resolution in Canadian Oil and Gas Exploration. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*, Vol. I, 46-64. (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- FEARO. 1982. *Beaufort Sea Hydrocarbon Production Proposal: Interim Report of the Environment Assessment Panel*. Federal Environmental Assessment Review Office, Hull, Quebec.
- FEARO. 1987a. *The Federal Environmental Assessment and Review Process*. Federal Environmental Assessment Review Office, Hull, Quebec.
- FEARO. 1987b. *Reforming Federal Environmental Assessment : A Discussion Paper*. Federal Environment Assessment Review Office, Hull, Quebec.
- FEARO. 1988. *The National Consultation Workshop on Federal Environmental Assessment Reform: Report of Proceedings*. Federal Environmental Assessment Review Office, Hull, Quebec.
- Faulkner, G. N. 1985. Notes for remarks to the Arctic Petroleum Operators Association. Annual Meeting APOA. Fairmont, British Columbia (reproduced in DIAND, 1985, 25-38).
- Fenge, T. 1984. Measuring Up: Did the BEARP fulfill expectations? *Northern Perspectives* 12 (3): 14-16.
- Fenge, T. I. Fox, B. Sadler, and S. Washington. 1985. A proposed port on the north slope of Yukon: The anatomy of a conflict. In *Environmental Protection and Resource Development: A Convergence for Today* (B. Sadler, ed.) Calgary: University of Calgary Press.
- Green, G., J. MacLaren, and B. Sadler. 1987. Workshop Summary. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*, Vol. I, 30 I-3 16, (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Holling, C.S. (ed.) 1978. *Adaptive Environmental Assessment and Management*. Toronto: John Wiley.
- Hunt, CD., and A.R. Lucas. 198 1. *Environmental Regulation — It's Impact on Major Oil and Gas Projects: Oil Sands and Arctic*. Canadian Institute of Resources Law, University of Calgary, Calgary, Alberta.
- Imperial Oil Limited, et al. 1978. *Summary: Environmental Impact Statement for Exploratory Drilling in Davis Straight Region*. Calgary, Alberta.
- IUCN (International Union for the Conservation of Nature and Natural Resources). 1980. *The World Conservation Strategy*. Gland, Switzerland.
- Jacobs, P., and T. Fenge. 1986. Integrating resource management in Lanacaster Sound. In *Integrated Approaches to Resource Planning and Management*, 267-291 (R. Lang. ed.) Calgary: University of Calgary Press.
- Jakimchuk, R.D. 1987. Follow-up to environmental assessment for pipeline projects in Canada: The missing link. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*. Vol. I, 32-45 (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Janes, S., and W.A. Ross. 1987. Environmental management structure for the Banff Highway Project. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*. Vol. I, 160- 18 1 (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Kasperson, R. 1978. Citizen participation in environmental policy-making: The U.S.A. experience. In *Involvement and Environment*. Vol. I, 128-138 (B. Sadler, ed.) Environmental Conservation Authority, Edmonton, Alberta.
- Keith, R.F., and J.B. Wright (eds.) 1978. *Northern Transitions*. Vol. II. Canadian Arctic Resources Committee, Ottawa.
- King, J., and J. G. Nelson. 1983. Evaluating the federal Environmental Assessment and Review Process with special reference to South Davis Strait, northern Canada. *Environmental Conservation* 10 (4): 293-30 1.
- Komaroni, G., and R. Gruben. 1984. Report on the Community Review of the Report of the Beaufort Sea Environmental Assessment and Review Panel. Beaufort-Mackenzie Development Zone Society, Inuvik, Northwest Territories.
- Larminie, F. G. 1984. Control, consultation or incentives for environmental management. *Industry and Environment*, July/August/September: 12-14.
- Lotz, J. 1970. *Northern Realities: The Future of Northern Development in Canada*. Toronto : New Press
- Lucas, A. R., and E. B. Peterson. 1978. Northern land use law and policy development: 1972-78 and the future. In *Northern Transitions*, Vol II, 63-93 (R. F. Keith and J. B. Wright, eds.) Canadian Arctic Resources Committee, Ottawa.
- Marshall, D. W. I. 1986 *Environmental Appraisal of the Canadian Beaufort Sea on Project*. Federal Environmental Assessment Review Office, Hull, Quebec.
- Marshall, D. W. I., and L. D. Wolfe. 1986. *Identification and Analysis of Environmental Issues Associated with Beaufort Sea Hydrocarbon Production and Transportation*.

- MacLachlan, L. 1984. Did the BEARP panel listen to northerners. *Northern Perspectives* 12 (3): 8-10.
- MacLaren, V. W., and J. B. Whitney (eds.) 1985. *New Directions in Environmental Impact Assessment in Canada*. Toronto: Methuen.
- MacNiven, J.D. 1980. Commentary. In *Public Participation in Environmental Decision-Making: Strategies for Change*, 152-157. (B. Sadler, ed.) Environment Council of Alberta, Edmonton, Alberta.
- Mason, R.O., and I. I. Mitroff. 1981. *Challenging Strategic Planning Assumptions: Theory, Cases, and Techniques*. New York: John Wiley.
- Morgenstern, J., J. Durlak, and P. Homenuck. 1980. Making the evaluation of public participation programs feasible. In *Public Participation in Environmental Decision-Making: Strategies for Change*, 127-147 (B. Sadler, ed.) Environment Council of Alberta, Edmonton, Alberta.
- Munn, R. E. 1979. *Environmental Impact Assessment: Principles and Procedures*. Toronto: John Wiley.
- Munro, D.A., T.A. Bryant, and A. Matte-Baker. 1986. *Learning from Experience: A State of the Art Review and Evaluation of Environmental Impact Assessment Audits*. Canadian Environmental Assessment Research Council, Hull, Quebec.
- Northern Perspectives* 12 (3) 1984. (Special issue on the Beaufort Sea EA Panel review and report.)
- National Task Force on Environment and Economy. 1987. *Report of the National Task Force on Environment and Economy*. Canadian Council of Resource and Environment Ministers, Ottawa.
- Pimlott, D., D. Brown, and K. Sam. 1976. *Oil Under the Ice*. Canadian Arctic Resources Committee, Ottawa.
- Reed, M. 1989. *Citizen Participation and Public Hearings: Evaluating Northern Experiences*. Department of Geography, University of British Columbia.
- Rees, W. E. 1978. Development and Planning North of 60: Past and Future. In *Northern Transitions*, Vol II, 42-62 (R. F. Keith and J. K. Wright, eds.) Canadian Arctic Resources Committee, Ottawa.
- Rees, W. E. 1981. Environmental assessment and the planning process in Canada. In *Environmental Assessment in Australia and Canada* (S. D. Clark, ed.) Westwater Research Centre, University of British Columbia, Vancouver, British Columbia.
- Rees, W. E. 1984. The process: Did the BEARP work. *Northern Perspectives* 12 (3): 4-6.
- Ross, W.A., B. Sadler, and D.W.I. Marshall. 1986. *On Scoping in EARP*. Federal Environmental Assessment Review Office, Hull, Quebec.
- Rothwell, K. 1985. *Duplication in Canadian Federal Environmental Reviews*. EARP and the NEB micro-fiche, National Library of Canada, Ottawa.
- Sadler, B. (ed.) 1978. *Involvement and Environment*. 2 vols. Environment Conservation Authority, Edmonton, Alberta.
- Sadler, B. (ed.) 1980. *Public Participation in Environmental Decision-Making: Strategies for Change*. Environment Council of Alberta, Edmonton.
- Sadler, B. 1983. Fairness and existing processes: Policy review. In *Fairness in Environmental and Social Impact Assessment Processes*, 101-107. (E.S. Case, et al., eds.) Canadian Institute of Resources Law, University of Calgary.
- Sadler, B. 1986. Impact assessment in transition: A framework for redeployment. In *Integrated Approaches to Resource Planning and Management*, 99-129 (R. Lang, ed.) Calgary: The University of Calgary Press.
- Sadler, B. (ed.) 1987a. *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*. 2 vols. Supply and Services Canada, Ottawa.
- Sadler, B. 1987b. Energy development on the Arctic frontier of Canada: An analysis of project decision making. In *Environmentally Sound Development in the Energy and Mining Industries*. Centre for Environmental Management and Planning, University of Aberdeen, Scotland.
- Sadler, B. 1988. The evaluation of assessment: Post-EIS research and process development. In *Environmental Impact Assessment: Theory and Practice*, 129-142 (P. Wathern, ed.) London: Unwin Hyman.
- Science Council of Canada. 1977. *Northward Looking: A Strategy and Science Policy for Northern Canada*. Science Council Report No. 26, Ottawa.
- Sewell, W. R. D. 1978. Public participation: Towards an evaluation of Canadian experience. In *Involvement and Environment*, Vol. II, 205-224. (B. Sadler, ed.) Environment Council of Alberta, Edmonton, Alberta.
- Sewell, W. R. D., and S. D. Phillips. 1981. Models for the evaluation of public participation programmes. *Natural Resources Journal* 19: 337-358.
- Social Impact Assessment*, 85/86, 1983. Special issue on social impact monitoring.
- Spenser, R. B. 1987. An evaluation of the procedural aspects of the Shakkwak Project environmental program. In *Audit and Evaluation in Environmental Assessment and Management: Canadian and International Experience*, Vol. 1, 182-210 (B. Sadler, ed.) Supply and Services Canada, Ottawa.
- Thompson, A. R., and N. Banks. 1980. *Monitoring for Impact Assessment and Management: An Analysis of the Legal and Administrative Framework*. Westwater Research Centre, University of British Columbia, Vancouver, British Columbia.
- U. S. Council on Environmental Quality. 1981. *Scoping Guidance*. Memorandum for General Counsels, NEPA Liaisons and Participants in Scoping, Washington, D.C.
- Waddell, K.B. 1981. *A Survey of Public Review Hearing in Northern Canada*. Indian Affairs and Northern Development Canada, Ottawa.

Wallace, R. R. 1986. Public *Input to Government Decision Making*. Occasional Paper No. 13, Federal Environmental Assessment Review Office, Hull, Quebec.

Wiebe, J. D., et al. (eds.) 1984. *Environmental Planning for*

*Large Scale Development*. Environment Canada and Canadian Petroleum Association, Vancouver and Calgary.

World Commission on Environment and Development. 1987. *Our Common Future*. New York: Oxford University Press.