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SOCIAL AND ECONOMIC ISSUES IN ATLANTIC CANADA CONCERNING OFFSHORE OIL AND GAS ACTIVITIES

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SUMMARY

The object of this study was to identify pertinent social and economic concerns associated with oil and gas exploration and production activities in Atlantic Canada; to consider which issues or concerns might feasibly and usefully be addressed by further study or by information programs; and to recommend which research studies or information programs appeared to have the highest priority.

The study, so far as possible, covered the entire east coast region of Canada. Interviews were conducted in Newfoundland and Labrador, Nova Scotia, New Brunswick, and Prince Edward Island. The study took place during the first three months of 1984, and the vast majority of the time was allocated to interviewing people first to discover, and then to refine, issues, concerns, and possible studies. More than 250 informants were interviewed.

Analysis of informants' responses identified a wide range of issues both real and perceived. Social and economic issues were both much more numerous and more widely noted than shore zone issues, which were almost non-existent in Newfoundland. Generally, Newfoundland respondents were more concerned about lifestyle and other social issues than were Nova Scotians, who placed greater emphasis on economic participation. This difference may reflect the more immediate possibility of opportunities for economic participation as a result of the Venture development, and the emphasis in Newfoundland may change when the Hibernia project has proceeded to an equivalent stage.

In New Brunswick, the main issues were concerns about economic participation and a potential warping of the traditional Maritime economic infrastructure if Nova Scotia alone is involved in the Venture development. Not surprisingly, the Nova Scotia-USA pipeline was also a major issue. In Prince Edward Island, the desire for economic participation vied with concerns over the potential effect of exploration on the Islanders' lifestyle and tourist industry.

In both the Maritimes and Newfoundland, relatively little thought seems to have been given by the general public to developments other than, and beyond, those at the Sable Island and Hibernia areas. Indeed, the majority of issues identified are concerned solely with the development phase of projects.

Informants gave relatively little consideration to the effects of existing and prospective future exploratory activity, with the apparent implicit assumption that these have already been absorbed and need not be of further concern. Similarly, the implications of the production phase seem to be perceived as both more temporally remote and less dramatic than the development phase, and were not widely discussed.

Finally, there seems to be a maturing in approaches to the effects of offshore oil and gas in Atlantic Canada. Until relatively recently, discussion of these effects tended to be couched in terms of a description of other experiences, especially those in the North Sea, with the implication that local effects would necessarily be parallel. However, throughout the interviews, the focus was generally the effect on Atlantic Canada per se, with only occasional reference to experiences elsewhere.

The study was originally described as covering sociological effects, economic participation, and shore zone uses. However, as the interviews progressed, a number of generalized concerns became evident that could not be readily fitted into the social, economic, or shore zone categories but were nevertheless of great importance. These concerns grouped themselves around such categories as uncertainty as to future development; the need for more and better information; and the consequences of expectations being generated. As well, there seemed to be a tendency to view all social and economic issues and trends in light of "oil and gas", even when they related to problems that had existed prior to offshore exploration. For whatever reason, there was a tendency to concentrate "the hopes and fears of all the years" on expectations for offshore exploration and development.

The identification of specific studies developed out of a consideration of the issues identified, and from suggestions by informants. Studies suggested were specifically excluded if they fell outside the study's terms of reference (e.g., environmental studies); if they were either project-specific or oil company responsibilities (e.g., regulatory compliance); or if they were an existing governmental responsibility. Studies were given a higher or lower priority depending upon such criteria as the level of interest, concern, and knowledge expressed by informants; the breadth of applicability of the study; the urgency of issues dealt with; the significance of the results for other studies; the usefulness of the results; the attributability of the issue to petroleum-related activity; and the practicality of the study.

The studies were grouped into four categories, reflecting importance on the one hand (high or medium) and imminence on the other (immediate or delayed).

The studies are strongly Atlantic Canadian in scope, although many could be applied either to other regions or nationally. The studies recommended arose out of the issues and concerns expressed in Atlantic Canada, and there is no way of knowing whether the same issues would arise, to the same degree, in other parts of Canada.

Although the study comments on each of the main categories of issues (economic, social, and shore zone uses) and proposes appropriate projects, one essential point should be stressed. Many of the concerns expressed which are capable of being addressed by further study, as opposed to policy decisions, have in fact already been looked at, or are in the process of being looked at, in some detail. The problem is that the information is either not public, is not easily accessible if it is public, and is often not in a format useful to the general public.

The desire for more or better information was <u>the</u> key recurring theme. Although it seemed as if some informants wanted a degree of information that was simply not available, improvements can undoubtedly be made in the flow of information from industry and government to the various sectors of the public. Improving the provision of information seems to be the critical challenge in addressing the majority of issues brought forth.

RÉSUMÉ

L'objet de cette etude etait d'identifier les problemes economiques et sociaux associes a l'exploration et a la production du petrole et du gaz naturel dans la region Atlantique, d'envisager les questions et les problemes qui pourraient vraisemblablement etre abordes avec profit dans des etudes et des programmes d'information ulterieurs et de proposer les sujets de recherche et les programmes d'information qui devraient avoir priorite.

Cette etude a porte, dans la mesure du possible, sur toute la region de la cote est du Canada. Des entrevues ont ete menees a Terre-Neuve, au Labrador, en Nouvelle-Ecosse, au Nouveau-Brunswick, et dans l'Ile du Prince Edouard. L'etude a ete effectuee au cours des trois premiers mois de l'annee 1984, et la majeure partie du temps a ete consacree aux entrevues dans le but tout d'abord de determiner et puis de preciser les problemes, les preoccupations et les etudes envisageables. Plus de 250 personnes au total ont ete interrogées.

L'analyse des reponses recues a permis d'identifier un large eventail de problemes reels et supposes. Les problèmes économiques et sociaux ont été plus souvent et plus largement abordes que les questions touchant a la region cotiere, lesquelles n'ont ete que tres rarement mentionnees a Terre-Neuve. En general, les gens de Terre-Neuve se sont montres surtout concernes par les questions de style de vie et autres questions sociales alors que ceux de Nouvelle-Ecosse ont davantage mis l'accent sur les questions de participation economique. Cette difference pourrait etre une consequence du plan de developpement Venture qui a donne un caractere plus immediat aux possibilites de participation economique. Il est probable qu'a Terre-Neuve, cette preoccupation prendra egalement de l'importance quand le projet Hibernia aura atteint un stade de developpement similaire.

Au Nouveau-Brunswick, les principales questions abordees concernaient la participation economique et la dislocation eventuelle de l'infrastructure economique traditionnelle des Maritimes au cas ou la Nouvelle-Ecosse deviendrait le seul participant au plan de developpement Venture. Comme prevu, le pipeline, entre la Nouvelle-Ecosse et les Etats Unis, constitue egalement une preoccupation majeure. Dans l'Ile du Prince Edouard, la volonte de participation economique allait de pair avec les preoccupations au sujet des repercussions eventuelles que l'exploration pourrait avoir sur le mode de vie de ses habitants et sur l'industrie du tourisme.

Dans les Maritimes comme a Terre-Neuve, le public ne semble guere avoir songe a la possibilite de plans de developpement autres que ceux de la region de l'ile de Sable et d'Hibernia. En fait, la grande majorite des questions qui ont ete abordees concernaient uniquement la phase de developpement des projets. Rares sont les repondants qui se sont penches sur les repercussions des activites d'exploration existantes et eventuellement a venir; ceci semble indiquer qu'ils les considerent comme des faits accomplis sur lesquels il serait inutile de revenir. De meme, il semble que les implications de la phase de production aient ete percues comme etant plus eloignees dans le temps et moins dramatiques que celles de la phase de developpement, et elles n'ont ete mentionnees que rarement.

Enfin, il est interessant de signaler un element qui semblerait indiquer une evolution des mentalites au sujet des repercussions de l'exploitation du petrole et du gaz au large, dans la region Atlantique. Jusqu'a tres recemment, toute discussion de ces questions tendait a faire appel a d'autres experiences, en particulier celles en Mer du Nord, comme si les repercussions locales devaient necessairement etre semblables. Il faut egalement remarquer que, tout au long de ces entrevues, l'accent a ete mis sur les repercussions dans la region Atlantique en tant que telle, les references a d'autres experiences n'etant qu'occasionnelles.

A l'origine, cette etude etait sensee porter sur les consequences sociologiques, la participation economique, et l'utilisation de la zone cotiere. Au cours des entrevues, on a constate qu'il existait un certain nombre de preoccupations qui, tout en etant d'une importance majeure, n'entraient pas exactement dans les categories definies ci-dessus. Ces preoccupations semblaient pouvoir se regrouper autour de plusieurs themes tels que l'incertitude concernant l'avenir du developpement, la necessite d'une meilleure et d'une plus ample information, et les consequences des espoirs qui avaient ete suscites. Il a semble egalement que toutes les questions et les perspectives economiques et sociales tendaient a etre abordees dans l'optique du "gaz" et du "pétrole", meme quand elles existaient anterieurement a ces activites d'exploration. Pour une raison inconnue, "les espoirs et les craintes du toujours" semblaient s'etre concentres sur l'exploration et l'exploitation des hydrocarbures au large de la côte.

L'examen des questions abordees, ainsi que les suggestions faites par les personnes interrogees ont permis de definir des sujets d'etude specifiques. Parmi les sujets proposes ont ete exclus ceux qui depassaient le cadre precis de cette etude (par exemple: etudes sur l'environnement), ceux qui devraient faire l'objet d'un projet separe, ceux

dont la responsabilite incombe aux compagnies petrolieres (par exemple: le respect de la reglementation) et ceux qui sont de la responsabilite actuelle du gouvernement. Les etudes ont ete classees par ordre de priorite selon les criteres suivants: le degre d'interet, d'inquietude et de connaissances exprime par les personnes interrogees, l'etendue du champ d'application eventuelle de l'etude, l'urgence des problemes traites, l'importance des resultats pour les autres etudes, l'utilité des resultats, la pertinence aux activites petrolieres et la praticabilite.

Les etudes, enfin, ont ete groupees en quatre categories selon, d'une part, deux degres d'importance (grande ou moyenne) et d'autre part, deux d'imminence (immediat ou a remettre).

Ces etudes sont nettement axees sur la region Atlantique, bien que la plupart d'entre elles pourraient s'appliquer a d'autres regions ou meme a l'ensemble du pays. Ces etudes on ete proposees a partir des problemes et des preoccupations exprimes dans la region Atlantique et nous n'avons aucun moyen de savoir si les memes problemes pourraient se poser, a un degre similaire, dans d'autres parties du Canada.

Bien que l'etude offre des commentaires sur chacun des domaines abordes (economique, social et utilisation de la zone cotiere) et propose des sujets d'etudes appropries, il nous faut insister sur un point. La plupart des problemes qui seraient susceptibles d'etre resolus dans des etudes ulterieures, plutot que par des decisions politiques, ont deja ete envisages, ou sont actuellement envisages, en detail. Le probleme est que l'information est ou confidentielle ou difficilement accessible au public, et qu'elle n'est pas toujours presentee sous un format que le public en general peut facilement consulter.

Le desir le plus souvent cite a ete celui d'obtenir de meilleures et de plus amples informations. La diffusion de renseignements industriels, commerciaux ou governementaux non confidentiels aupres du public pourrait etre amelioree nonobstant le fait que certains repondants semblent souhaiter disposer d'informations qui ne sont tout simplement pas accessibles. C'est a ce probleme crucial qu'il s'agira de s'attaquer lors de l'examen de la majorite des questions soulevees.

INTRODUCTION

In the fall of 1983, the first issue of UPDATE was put out by the Environmental Studies Revolving Funds (ESRF), identifying priority subjects for 1983 and requesting study proposals. Under the title East Coast Social Issues Scoping Study, the present study was described as "a study to identify pertinent social and economic concerns associated with offshore oil and gas exploration and production activities." The study was to involve "extensive consultation with all publics to ensure that all real and perceived issues and concerns [were] identified and considered for future study."

As well as identifying issues involving social concerns, economic participation, and shore zone use, the study was to assess the information needs of the various publics, and to recommend proposed studies or information programs to address the issues and information needs. The study was to cover all of Atlantic Canada except Hudson Bay, and was to take about 12 weeks. A full description of the study is given in Appendix 1.

CAVEATS

Although the study was originally described as covering sociological effects, economic participation, and shore zone uses, it became evident as the interviews progressed that these distinctions were somewhat artificial and were not applicable in many areas. Nonetheless, the report is structured around these categories, because it was the conceptual framework from the start. This structure causes particular difficulty with the shore zone uses which are more specific than are social and economic concerns, and are difficult to separate satisfactorily from strictly environmental concerns.

The scope of the proposed studies is strongly Atlantic Canadian although many of the studies could be applied either to other regions or nationally. The studies recommended arose out of the issues and concerns expressed in Atlantic Canada, and there is no way of knowing whether the same issues would arise, to the same degree, in other parts of Canada.

It also appeared that the ESRF mandate might be more difficult to define in the socio-economic than in the environmental realm. The issues brought forth tended to be sufficiently general that doubts could easily arise as to whether they were not already within the policy jurisdiction of some government department, or whether they could be specifically ascribed to offshore petroleum-related activities. Additionally, because Atlantic offshore

activity is, at present, so concentrated around two specific fields (Hibernia and Venture), it was difficult to know how broadly applicable the results of certain studies would be. On the whole, where there was doubt as to whether a study was within the ESRF mandate it was included, but not as an immediate priority.

In the section dealing with social, economic, and shore zone issues, each heading is divided into an Issues Raised section, wherein the issues brought out during interviews are described, and a Commentary section, wherein they are evaluated. The range of issues is very broad, and the expertise and knowledge expressed in individual interviews highly variable. For this reason, many matters described as 'issues' in the first part of each heading may appear to the expert to reflect misinformed views or to cover matters already being addressed.

Finally, the studies suggested are numerous and diverse, and no suggestion is made that they should all be undertaken simultaneously, or even that they should be undertaken by the ESRF.

GEOGRAPHICAL CONSIDERATIONS

Analysis of informants' responses identified a wide range of issues both real and perceived. Social and economic issues were both much more numerous and more widely noted than shore zone issues, which were almost non-existent in Newfoundland. Generally speaking, Newfoundland respondents were more concerned about lifestyle and other social issues than were Nova Scotians, who placed greater emphasis on economic issues. This difference may well reflect the greater immediacy of economic participation opportunities as a result of Venture development, and the emphasis in Newfoundland may well change when Hibernia has proceeded to the equivalent stage.

In New Brunswick, the main issues were concerns about economic participation and a potential warping of the traditional Maritime economic infrastructure if Nova Scotia were singled out as the sole Maritime actor in the Venture development. Unsurprisingly, the Nova Scotia-U.S.A. pipeline was a major issue. In Prince Edward Island, the desire for economic participation vied with concerns over the potential effect of exploration on the Islanders' lifestyle and tourist industry.

TIMING CONSIDERATIONS

In both the Maritimes and Newfoundland, relatively little thought seems to have been given by the general public to developments other than those at the Sable Island area and Hibernia. This lack of thought seems to be the result of the Venture SERP and Hibernia EIS work, which comprise a large proportion of the socio-economic analysis done to date and are deliberately concerned only with the effects of these specific developments. To a considerable degree, these projects have established the agenda for current debate on offshore development.

The great majority of issues identified are solely concerned with the development phase of projects. Relatively little consideration was given by informants to the effects of existing and prospective future exploratory activity, with the apparent implicit assumption that these have already been absorbed and need not be of further concern. Similarly, the implications of the production phase seem to be perceived as both more temporally remote and less dramatic than the development phase, and were not widely discussed.

Lastly, it is interesting to note what may be viewed as a maturing approach to the effects of offshore oil and gas in Atlantic Canada. Until relatively recently, discussion of these effects has been couched in terms of a description of (in particular) North Sea experiences, implying that local effects would necessarily parallel these. Throughout these interviews, it was notable that the focus was generally the effect on Atlantic Canada per se, with only occasional reference to experiences elsewhere.

ISSUES BY SUBJECT

As the interviews progressed, it became evident that there were a number of generalized concerns that could not be readily fitted into the social, economic, or shore zone issues but were nevertheless of great importance. These seemed to group themselves around such categories as uncertainty as to future development; the need for more and better information; and the consequences of expectations being generated. As well, there seemed to be a tendency to view all social and economic issues and trends in light of 'oil and gas', even when they related to problems that had been there before offshore exploration began. For whatever reason, there was a tendency to concentrate "the hopes and fears of all the years" on expectations for offshore exploration and development.

The desire for more or better information was the key recurring theme and can be categorized into five separate classes: information about the review and decision-making process; community, or location-specific, information; information specific to the petroleum industry; study-specific information; and information about where to find information. Although it seemed that many informants wanted a degree of certainty and a level of information that was simply not possible, improvements could certainly be made in the availability and format of existing data.

Specific concerns were also raised about the formal public review process, and the level and effectiveness of public participation.

Within the three specific issue groupings, economic concerns played a major part. In the Maritime provinces, economic issues were raised more frequently than social or shore zone issues.

Under general economic concerns, the primary issues raised were uncertainty as to scale and timing; lack of information as to opportunities and locational factors; the effects of competition; and the effect of expected revenues.

Businesses directly involved in offshore petroleum development were, unsurprisingly, concerned primarily with participation opportunities. There was a divergence of opinions as to whether the main limits to participation were internal or external to the local business community and as to how such impediments should be addressed. In the Maritimes, in particular, being located outside of the Halifax-Dartmouth area was seen as a major impediment, but there was little agreement as to an effective solution.

Businesses not involved directly in the development of offshore petroleum but which felt that they might be nonetheless affected were mainly in the fisheries and tourism sectors. The primary concerns were with a potential competition for labour and facilities, and with the economic effects of spills or other accidents.

With respect to labour issues, the main concern seemed to be whether sufficient attention was being given to training and certification requirements so as to ensure maximum local participation. In fact, it appeared that the matter was generally well in hand but that there is probably insufficient information being disseminated on labour supply and demand issues, especially for the development and pipe-line phase. Affirmative action was raised as an issue, but any deficiency seems to be on the implementation side rather than the policy side.

At the municipal or community level, the absence of easily accessible information seemed to be the key problem. In communities clearly identified as being affected, there is a greater desire for information on how to ameliorate negative effects. On the other hand, communities on the periphery seem to feel caught between general expectations of 'good times' and a lack of information as to what, if anything, they can do to enhance their participation. The concern was expressed frequently that this resulted in destructive and unnecessary competition between neighbouring municipalities.

Many people wished to see an increased capability to assess and plan for offshore development at the local level, although the suggested means to accomplish this altered radically depending upon the focus of the informant. Finally in Nova Scotia in particular, the appropriate distribution of benefits was a serious concern.

In the social issues, twelve main areas of concern were noted. The offshore work environment was a major issue, particularly in Newfoundland, with concern expressed about the effect of work-related stress on both offshore and onshore lifestyles. There were also particular concerns about the effect of both stress and lengthy absences off-shore, followed by lengthy periods of free time on shore, on the family structure and other family members.

In both Newfoundland and the Maritimes, concerns were expressed about the effect of speculative in-migration and return-migration both on the communities affected and on the individuals concerned. Informants, especially in Newfoundland, also feared that higher salaries and faster-paced, more stressful jobs might result in an erosion of traditional values. In a similar vein, there was concern about the effect of demographic changes resulting from offshore activity.

Another area of concern was the extra demands that might be placed on the housing market and the social service system. Even where additional demands were likely to be statistically marginal, there was a genuine concern that, under present circumstances, these could prove to be "the straw that broke the camel's back"; and that groups already vulnerable, or at risk could prove to be disproportionately affected. Under housing, another issue raised frequently was the need for more information on the optimum way of housing large groups of workers during the development phase.

Other issues involved the potential for increased demands on the educational, recreational, and health systems. However, the effects on such services are likely to be more generally spread over the population base and are difficult to address until more information is available on

the in-migration and demographic issues. A separate, and very important, need is to use the formal and informal educational structures to enhance the understanding by both children and adults of the offshore industry and environment.

There were widespread concerns about safety in the offshore environment. The extent of such concerns was no doubt to some degree influenced by the 1982 Ocean Ranger sinking off Newfoundland, and may have been influenced by the Vinland blow-out which occurred off Nova Scotia while the study was in progress.

Finally, there was a general concern about possible increases in alcohol and drug abuse and in criminal activity. Some informants, however, expressed a counter concern that a premature reaction to an unproven result could result in appropriate policies.

With respect to the shore zone, the general issues identified by informants were availability, analysis, and accessibility of existing government and industry data, and the need for planning and management with respect to a range of interests and activities wider than just offshore development.

In more specific categories, informants concerned with the fisheries, including aquaculture, raised concerns about effect on stocks, potential conflicts with oil vessel traffic, effects of spills, access to and competition for offshore areas, skilled crew and shore facilities, and the effects of potential spills on marketing. Compensation was seen as an ongoing issue by fishermen and aquaculturists.

The main concerns identified by other shore zone users were the effect of drilling, and possible pollution, on tourism, and traditional use by native peoples in Labrador. The effect on tourism was a particular concern in Prince Edward Island, and the effect on traditional uses was the primary concern among the Labrador Inuit.

CONCLUSION

Although the study provides commentary on each of the issues and proposes appropriate studies, one essential point should be stressed. Many of the concerns expressed which are capable of being addressed by further study, as opposed to policy decisions, have in fact already been looked at, or are in the process of being looked at, in some detail. The problem is that the information is either not public, is not easily accessible if it is public, and is often not in a format which the general public would, in any case, be inclined to use.

In some respects, the problem is insoluble. The offshore petroleum industry is technically sophisticated and much of the information available is not easy to summarize. Nor do the competitiveness, the immense amount of money at stake, and the rapidity with which developments can occur lend themselves to an open flow of information. Given the complexities of both the governmental and the government-industry information processes, many documents never get beyond a "draft" stage, although they may achieve a fairly wide-spread circulation within certain groups. Actual publication often requires a unanimity of approval that is hard to achieve. The complexities, and multi-layered approval system, of offshore exploration, regulation, and policy development may also be largely responsible for the absence of a central information source which would facilitate public access.

Notwithstanding the above, however, the critical challenge in addressing the issues brought forth during the study seems to be improving the flow of available information to the public.

METHODOLOGY

The methodology comprised four main phases: review of existing information; pre-identification of components, locations, and publics; consultation; and the analysis of issues together with the identification and ranking of studies. This approach was designed to ensure a full consultation with all publics and to identify and consider all real and perceived issues, while taking into account both inter- and intra-regional differences and time constraints.

A major methodological problem was posed by the need to define the population that comprised the relevant publics. It should be noted that the research method employed is essentially subjective. Selections of information sources and individuals to be consulted proceeded from previous knowledge on the part of the consultants regarding the identity of informed individuals. This provided an entry point into the many possible sets of informants and core groups with direct or indirect involvement or interest in offshore activity in the region.

Given the range of implications arising out of offshore oil and gas activity there appears to be no single set of criteria that defines the relevant population that could have been surveyed. An attempt to close the circle was made through a "snowballing" technique in which persons interviewed were requested to identify other relevant informants. In this way a set of core sources was identified.

In many cases, such as among government and agency groups, it was possible to define core sources reasonably quickly and completely, though time constraints and the unavailability of some key informants were impediments. For other groups, notably business and specific interest and community groups, it was less easy to determine core sources and some important informants may have been missed. However, because no substantially new issues were identified by second round interviewees, this does not appear to have materially affected the results.

REVIEW OF EXISTING INFORMATION

The first phase consisted of a review of information that permitted a preliminary identification of issues and informants. Two important sources were used; literature and issue catchment centres.

Literature

This source consisted of selected publications and reports on offshore petroleum-related activity in Canada, the USA, and countries bordering the North Sea, and on other comparable Canadian experience in resource development. A number of offshore development bibliographies and reports were used in identifying relevant materials, among which the Mobil Oil Canada Ltd. Sable Island EIS reports and the Venture SERP hearings submissions and transcripts were considered to be of major importance. The consultants' familiarity with the Mobil Oil Canada Ltd. Hibernia EIS draft reports was also of considerable value. From these and other reports and publications key issues and informants were identified.

Issue Catchment Centres

Particular groups of individuals, were considered "issue catchment centres" because they have been concerned with the effects of offshore oil and gas on a regular and formal basis. These groups include the staff of the Mobil Oil Canada public relations department, Canada Oil and Gas Lands Administration (COGLA), the Government of Newfoundland and Labrador's Petroleum Directorate, the staff of the Venture Socio-Economic Review and Environmental Impact Panels, the Nova Scotia Department of Development, and consultants involved in preparation of EIS reports on both Venture and Hibernia. They were immediately able to identify most key issues and to suggest appropriate expert informants for the consultation stage.

PRE-IDENTIFICATION OF PUBLICS

During the second phase of the study the major petroleum-related activities, their likely locations, and the publics effected directly or indirectly by the industry were identified. This grouping provided a framework for ensuring that the informants interviewed during the consultation phase adequately represented all significant publics.

CONSULTATION

During the third phase those expert informants identified in Phase 1 were interviewed. Expert informants were individuals considered to have expertise in particular areas that pertained to specific issues. This group represented the majority of interviewees, and their information led to the identification both of further issues and possible studies and also other key informants. In total,

about 250 informants were interviewed, drawn from all three levels of government, industry, labour, the academic community, and local interest groups.

In geographical terms, the informants were concentrated in the Halifax and St. John's metropolitan areas. This concentration reflects both the location of the senior representatives of government, the petroleum industry, labour and interest groups, and the likely spatial distribution of administrative, service, and transport-related onshore effects. Elsewhere in the Maritimes, interviewing took place in Fredericton, Saint John, Charlottetown, Sydney, Port Hawkesbury, Mulgrave, Antigonish, Pictou, Guysborough County, and Truro, as well as phone conversations with informants in Moncton, Bridgewater, Shelburne, and Yarmouth. In Newfoundland and Labrador interviews were also held on the Southern Shore, Isthmus of Avalon, Argentia, Bay Roberts, Burin Peninsula, Botwood, Coastal Labrador, and Happy Valley/Goose Bay. Informants were drawn from all three levels of government, industry, labour, the academic community, and interest groups.

Most prospective informants received both a letter asking for assistance, with attachments (see Appendix 2) and a phone call scheduling the actual interview.

During the first round of interviews informants were asked first, to identify significant issues; secondly, to rank these issues in terms of importance with an indicator of their ranking criteria; thirdly, to suggest, where appropriate, studies to address the issues; and lastly, to suggest further informants. On average, interviews lasted about an hour. These interviews also served to identify individuals with well-developed ideas with respect to issues and studies. Groups of such individuals were selected for a second round of consultation. Meetings between study principals and these groups helped to crystallize issues, their ranking, and the delineation between real and perceived concerns, and to develop studies further.

As the interviews progressed, new key informants were identified, but, although every effort was made to incorporate them, the time limitations became increasingly severe. Moreover, towards the end of the first round interviews, although individual key informants continued to bring new insights or particular knowledge to their analysis of the issues, the number of "new" issues identified fell off dramatically.

Although second-round informants made comments on the validity or scope of the various issues identified, they were more likely to express some bemusement at the number and variety of issues already brought forth than to suggest new ones.

ISSUES AND STUDIES: IDENTIFICATION AND RANKING

Analysis of informants' responses identified a wide range of real and perceived issues, which were then gradually grouped and refined. These grouped issues were then discussed with second-round informants in an attempt to further refine and assess them.

Potential studies were identified from consideration of the issues identified, from suggestions by informants, and from second-round consultation. As potential studies developed they were tested against exclusion and rating criteria to test not only whether they were within the mandate of the ESRF, but also whether they appeared to be both practical and effective. They were also tested against the opinions of knowledgeable second round informants. Although thought was given to all broad issue groupings identified, for some it proved impossible to design ameliorative studies, often because the concern expressed was, in reality, more of a comment on policy than an issue for further study.

EXCLUSION AND RATING CRITERIA

Given the range of issues, the potential number of studies was enormous. Hence, exclusion and rating criteria were developed to limit and rank the number of recommended studies and programs.

Potential studies were excluded from further consideration on the following grounds:

(a) Outside Terms of Reference

The terms of reference for the present study sought the identification of studies relating to social, economic, and shore zone issues. Any studies principally concerned with other issues, such as purely environmental concerns, were excluded.

(b) Project Specific and Industry or Government Responsibility

All studies which were concerned with specific projects, such as Venture or Hibernia, and which clearly fell within the EIS process associated with these developments, were excluded. So were studies concerned with regulatory compliance.

All other studies were deemed appropriate, but the following criteria were used in selecting studies of sufficient merit for inclusion in the final list of recommended studies.

(a) The Level of Interest, Concern and Knowledge Expressed by Informants

This was judged by reference to the number of informants identifying the issue(s); the importance they attached to these issues; the number of respondents proposing such a study; and an assessment of the level and quality of understanding exhibited by these respondents.

For example, a number of respondents emphasized the necessity of studies dealing with the training required for local labour to participate in the offshore, which would ordinarily have given the matter a high priority. Because informants involved in the actual training process indicated that such studies had either been done or were in process, however, the issue became one to be addressed by informational programs rather than further study.

(b) Applicability of Study

Generally speaking, a study that addresses an issue of concern only to a single locality for a short period of time is, all other things being equal, less valuable than one applicable to a larger geographical area or areas or a longer time period. Similarly, studies of broad conceptual significance, the results of which can be applied to a range of issues or which can be used as a model, are more important than very specific studies.

(c) Immediacy

Issues of immediate concern were given higher priority, all other things being equal. Matters such as abandonment or site reclamation may ultimately be of considerable importance, but they are not a great priority at the moment and there will be sufficient lead time to undertake studies at a later stage.

(d) Significance for Other Studies

Some studies, as well as being inherently valuable, are necessary prerequisites for others. Baseline studies, for example, are necessary for an evaluation ofthe effects of offshore oil and gas and will likely be required for projection exercises. As a corollary, some studies require that other work be done first and they are, accordingly, delayed.

(e) Utility of Results

A higher priority was given to those programs having implications for policy, whether with respect to prevention, amelioration, or affirmative action, than of those without obvious practical application.

(f) Attributability to oil and gas

Some studies, although of value in assessing the possible effects of offshore oil and gas, are only indirectly related to those effects. Thus, for instance, a comprehensive inventory of social services available in Newfoundland is long overdue, and is only made somewhat more urgent as a result of prospective oil and gas developments. It is therefore given a lower priority than studies of issues more directly attributable to oil and gas such as the Offshore Job Satisfaction Survey.

(g) Manageability of Study

A study's manageability directly effects the priority given it. Some studies, such as the construction of an input/output table of the Newfoundland economy, or the effects of inter-municipal competition for petroleum-related studies involving major revenues from assessment in Nova Scotia, are highly desirable and relevant to oil and gas concerns, but would be very difficult to undertake. Such studies are given a low priority. Conversely, many information-oriented studies, such as the development of information modules, are clearly manageable and were given a higher priority.

Final ranking of studies was extremely difficult to do with precision. Four categories reflect importance on the one hand and immediate concern on the other. Thus, the studies are described as either:

High:Immediate	an important study that provides base information or responds to a particularly urgent need;
High:Delayed	an important study that may depend on other work or that may be made less urgent by the current stage of activity;
Medium:Immediate	a less important study, but one that responds to an immediate need;
Medium:Delayed	a less important study due to lack of urgency or need for further specification, but one that can or should be undertaken later.

GENERAL ISSUES

As the interviews with informants progressed, it became increasingly evident that there were a number of generalized concerns that would not fit readily into the social, economic, or shore zone categories. They are substantive concerns but not, with a few exceptions, ones that are easily addressed by research or informational studies. Nonetheless, they were raised so often by such a wide spectrum of informants that they should be addressed. They are the context in which informants tended to view the more specific issues, and the filters through which the public perceived offshore exploration and development.

UNCERTAINTY

The first concern which came up consistently in almost every range of informants was uncertainty. It was most often expressed as a need for more definite information, whether by businessmen contemplating investments in the industry; by community spokesmen attempting to assess the potential effect on their constituencies; or by people with a more diffuse interest who were simply "trying to get a handle" on what offshore oil and gas developments meant for themselves and their communities. Informants from government, the petroleum industry, and even many local businesses, argued persuasively that a considerable degree of uncertainty was necessarily inherent in the nature of the industry. Nonetheless, it seemed clear that people perceived that the uncertainty was greater than necessary and that it made planning difficult. There was an almost palpable feeling that somebody knew and just was not telling.

INFORMATION AND KNOWLEDGE

Perhaps partially as a result of this uncertainty there was consistent scepticism about the value of the information publicly available. On the whole, the view seemed to be that it came from either industry or government and both were seen as pursuing their own agenda and, therefore, as being non-objective sources. Time and time again, informants referred to the need for 'credible' or 'objective' information. They were, by and large, simply not sure of what "offshore oil and gas" meant in timing, in scope, or in effect. Nor, on the whole, were they able to suggest from where 'objective' information might come.

There are probably many reasons for the phenomenon, including inadequate co-ordination and diffusion of the very large amount of information that has been gathered over the past several years; the natural secrecy of an industry in which both time and information involve immense amounts of money, and the occasional tendency of government to assume that, as long is it knows what is going on, everything is under control. The latter two points, at least, are clearly not addressable by research or information programs.

Another cause for the perceived credibility gap may well be the point best made by a teacher of geology: "When people hear the words 'oil well' or 'gas well', they immediately think of a big pool of oil and gas. And as soon as they think of a 'pool', they figure someone has to know how big it is. When people start to talk about Venture as a 'gas pool' I know it's going to be very hard to get them to understand the complexity of the issues. After that, they just can't recognize that we don't know the nature of the beast out there."

There seems to be a lack of basic, easily obtainable, easily readable material on the oil and gas industry: such as geological considerations, time frame, basic terminology, and marketing considerations. Although information exists, people do not know where to find it, and often it is not in a format that the average reader finds easy to grasp quickly. Most people are simply not going to peruse a study, or any lengthy document, as bedtime reading.

EXPECTATIONS

Many of the people interviewed were more concerned about the effect of expectations than they were about oil and gas itself. Much of the concern was negative, such as the effect on business of gearing up too quickly or too much, or inter-provincial and inter-municipal rivalry over a pie the size of which is not really known yet, or potential distortions of the regional economy, or in-migration to the region based on expectations rather than reality.

Other informants, however, felt that the effect of expectations was positive. There was a general feeling, for example, that expectations for oil and gas have fueled the Nova Scotia economy in particular over the past few years and cushioned it from the country-wide recession. Expectations have brought many businessmen to the Atlantic region for the first time and, according to most accounts, there has been a general surprise as to what a pleasant place it is to be. As one economist said: "The change in Toronto's perception of the region may be one of the most important

results of the whole exploration process." The point was made that expectations alone, regardless of any other benefits of oil and gas, may be helping the region move towards a more mature economy.

In short, the concern or hope, depending on the point of view of the informant, was that the expectations generated by the presence of oil and gas exploration could be of more significance, in the short term at least, than the presence of oil or gas itself.

ATTRIBUTABILITY TO OIL AND GAS

A fourth general issue was the tendency to view all social and economic developments as "oil and gas" phenomena. Many of the concerns raised, such as inter-municipal or inter-provincial rivalry, a changing regional lifestyle, the insufficiency of certain types of social services, the difficulties created for a family by the periodic absences of the husband and father, and even shore zone oil spills, were concerns in the region before offshore oil and gas ever arrived. They will undoubtedly still be concerns after it has gone.

This is not to make light of the issue. Such concerns are serious and are undoubtedly based on the effects of oil and gas. First, it is unrealistic to expect benefits without paying a price (the 'every silver lining has a cloud' phenomenon) and concerns about the general effect of such large projects on the social and economic infrastructure are justified. Secondly, there are undoubtedly some areas where existing problems will be exacerbated by oil and gas regardless of how small the real effect is (the 'straw that broke the camel's back' phenomenon). Housing and social services were areas commonly referred to in this respect.

Nonetheless, there appears to be something about "oil and gas" that causes people occasionally to lose their sense of perspective. In Nova Scotia, for example, projects having almost as much significance as Venture have come and gone with relatively little fuss. Whether it is the aura of money, or of international 'machismo', or simply the timing, oil and gas development seems to be perceived by many people and communities as their only hope. As one informant put it: "Every little fishing village sees oil and gas as its only chance for escape from a future based on a decaying fish plant."

INFORMATION, THE REVIEW PROCESS, AND PUBLIC PARTICIPATION

INFORMATION NEEDS

It is clear that information dissemination is essential to resolving many of the issues and concerns presented by informants. The matter is not an easy one, however, because of two underlying problems.

First, in many cases the information required or desired is not yet in a format that is easy to digest. The general public are not interested in wading through lengthy tomes in the hope of gleaning a piece of information that addresses their concerns. The concerns are quite specific, and the information that addresses them should be specific too. The old saying that "one picture is worth a thousand words" should not be lost sight of. Much of the public simply does not know what a land-based petroleum-related facility looks like. Oil company information programs have been attempting to fill this gap, but to date there has been little assessment of how successful they have been, or whether the information packages they have produced could be made more widely available or improved upon.

Secondly, in certain circumstances, especially with respect to business participation issues, it is necessary to first assess whether additional information would indeed resolve the concern presented. All this, of course, is aside from the dilemma that sometimes the information desired simply does not exist at all. In some specific instances, the desire for further information seems to be sparked by the belief that if enough information is available, uncertainty will be inexorably overcome, and the appropriate action will be obvious. This is not necessarily true. Whereas appropriate information is undoubtedly useful, the wrong kind can be a waste of time and energy. As one businessman outside the regional centre put it: "I don't need more people coming around telling me that great things are going to happen and I should spend all my time getting involved, or sending me questionnaires to fill out; I need somebody to tell me if there's something that makes it worth while for my business to put time and energy into it." Such questions may be resolved better by studies such as the Impediments to Business Participation Study than by more information programs now.

The absence of information that is considered by the various publics to be objective and reliable is certainly one of the most highly ranked perceived issues. It also seems undeniable that the information gap is real, and at the extremes, such as between the centres of decision making and the smaller communities at the periphery, is a major

problem with potentially serious repercussions. More and better information is undoubtedly essential in resolving many of the issues and concerns presented, but it is also expensive. Money spent on information programs is not spent elsewhere, whether it be on the formal review process, assistance for public participation, or other business development programs. It is important to ensure that the information programs developed do achieve a positive result.

INFORMATIONAL CATEGORIES

The information needs presented during the interviews have been broken down into five categories, although many of the concerns are specifically addressed elsewhere in this report.

(a) Information as to Process

Although this is the most difficult category to define or assess, it seems to be an essential one. It manifests itself in such questions as "is anybody looking at this?" or "when will we have a chance to make comments on this?". It involves such issues as: What is the chain of review? Where can the public have input? Who is responsible for handling such-and-such an issue? Who is monitoring? Essentially, it boils down to a concern as to whether anybody representing "the public" has things under control; a general anxiety that issues are not being addressed or that the process is not working as it should.

To some extent, this concern can be attributed to the complexity of existing regulatory relationships, and to the often confusing jurisdictional overlaps and conflicts that have developed around offshore exploration and development. Even civil servants will often admit to having difficulty in establishing exactly which office or person is responsible for a specific policy or decision. Matters relating to policy areas where several departments, and even several levels of government, have separate interests and points of view are often resolved by a process of bureaucratic or political negotiation rather than a clear cut chain of responsibility. Thus, the public, unable to obtain a clear understanding as to <u>who</u> exactly is responsible for a certain issue, often assumes that perhaps no one is looking at the matter.

More information on the scope of the entire review process, putting the various steps in context, could help to address this issue. There seems to be a tendency to equate the EIS or SEIS with <u>the</u> review process, and to lose sight of the ongoing approval and regulatory mechanisms involved in offshore exploration and development. Other than this, it becomes difficult to distinguish the extent to which this

is an oil and gas issue as oppposed to a general societal issue. It seems, in part, to go to a general public concern that society is getting too complex, that government is getting too distant, and that industry is getting too large.

Nonetheless, there is undoubtedly a good deal of information available in government and industry offices that could be made available to the public if the will were there and a dissemination system were in place. The information resource centre study is an attempt to deal with this problem.

(b) Community or Location-Specific Information

For a large section of the public, the most important pieces of information are simply "how is this going to affect me, or my family, or my community." This is an area where oil company information programs are essential and the community information and consultation program study applies. Additionally, the EARP and SERP processes in Nova Scotia involved public information sessions some six months before the final public meetings, and the notably larger number of active participants in the first round suggests that this might be a useful vehicle.

(c) Industry-Specific Information

Although more an implied need than an expressed one, there is a lack of understanding of the oil and gas industries generally, and of the offshore infrastructure in particular. People need to know about such things as the geological considerations, the time frame, the international background, how Venture and Hibernia (or any other offshore project) compare to other developments, or about the market considerations. A series of short, clearly illustrated pamphlets seems the best approach, if only because it is the easiest to distribute. The industry information modules study applies.

(d) Project-Specific Information

The existing review process tends to focus on project-specific information, so the issue is more properly dealt with under the review process. The exception may be project-specific requirements for business access and development, but these can only be addressed properly after the basic studies are in place to more clearly establish exactly what information is most useful in assisting such access and development.

(e) Information About Information

A particular area of concern is where or to whom people turn to find information about information. Who has it and who can obtain it? Not every piece of information developed by government or industry either should or could go out to a mailing list of thousands. People do, however, have to know where they can go to find out what information is available upon request and to whom they make the request. The question of the credibility of information was raised frequently as an issue; many informants either do not trust the accuracy of information supplied by government and industry, or do not know how to evaluate it.

Much information available in the Atlantic provinces with respect to offshore oil and gas exploration and development is not generally used simply because of access problems. No bibliography of studies available in the region exists, although we understand that one of the oil companies will shortly be releasing a bibliography with respect to Nova Scotia. As a result, the general public is uncertain as to which issues have been looked at and which have not, and even government departments are unsure as to which avenues of research within their area of interest have already been pursued.

Also, much informational material is available, including pamphlets, slide shows, and video tapes, which should be listed in a common-user index. Such materials should include the names of key contact people in industry and government (oil company public relations personnel, departmental librarians, etc.) An information resource centre, containing a catalogue of all items together with information on access, could be a useful concept. However, issues such as location, upkeep, standardized indexing, and storage locations would have to be resolved first.

Indicated Studies

Study 1. A review of community information and consultation programs: criteria for success.

Study 2. Industry information packages.

Study 3. Information resource centre.

Study 13. Certification handbook.

Study 15. Community impact handbook.

Study 16. Facilities handbook.

THE FORMAL REVIEW PROCESS

There was considerable concern in Nova Scotia in particular about the nature of the review process. The Venture SERP did not appear to have been a particularly happy process for the majority of participants. Possibly this was simply because the expectations held by both the general public and various special interest groups were so broad and diffuse. Newfoundland informants also expressed concerns as to what the formal review process is likely to be for Hibernia.

The Venture SERP was set up in response to Clause 7 of the Canada-Nova Scotia Agreement, which called for "...an advisory process for public review of production system options with respect to particular development proposals ... before the authorization of a system for producing oil and gas." The panel was mandated to "...examine the socio-economic implications of production system options related to the development of natural gas and condensate production from the Sable Island area..." and to "...establish means of informing the public on the socio-economic implications of the proposed production system."

The net result was a good deal of public confusion as to the purpose of the review. Was it primarily to disseminate information, to solicit public perceptions and concerns, or to allow for an independent review and subsequent recommendations? If the latter, what was the public's role in the review? Was it to deal with Venture specifically, or potential production around Sable Island generally?

Although the socio-economic review of Venture was entirely Nova Scotian, it would seem to have implications and lessons for offshore development review in the region as a whole. Because the process was new and ambiguously defined, problems arose that could perhaps have been avoided, and may still be avoided, elsewhere.

Because the public seemed to be expecting a review of offshore gas production generally, problems arose from the fact that the panel's mandate was limited to Venture. Questions were asked that simply could not be addressed on a project-specific basis. Questions of policy concerning offshore development as a whole were mixed with specific technical queries. Some people were concerned that the process appeared to take place after the decision to develop had been made; others were concerned that it took place before all the specifics of the project were in place and assessable. Some people felt that the impact statements were too technical and long to be easily readable by the general public; others felt that they were insufficiently detailed to allow special interest groups to assess specific areas of concern accurately.

The conclusion seems to be that no single review mechanism can satisfy all of the people all of the time. Some members of the public are looking primarily for information about the effect of a specific project at a specific location as early as possible. Others are concerned about the indicated overall effect of offshore oil and gas exploration and development over a long period of time, and in favour of a less project-specific review and more post-review monitoring of concerns raised.

Indicated Study

Study 4. A study to place the formal review process in the context of the overall regulatory process, so as to inform the public as to the full range of review mechanisms and the various points of public interaction.

PUBLIC PARTICIPATION

Many members of the public are concerned about participation rather than simply information. They want to see a process that will allow them to actively assess the information given, and to make recommedations as to the most appropriate course of action. Whether their concern is with a special location or a special range of issues (e.g., affirmative action or social services), they are concerned with having real input into planning and policy decisions.

The nature of the demand for public participation varies both spatially and temporally with community involvement, peaking dramatically when there is a specific issue to resolve and an affected group who wish to play a role in the decision-making process. At other times, the demand for public participation is significantly less and may focus primarily on information requirements.

Many informants suggested that public participation during the SERP on Venture was unsatisfactory. Some participants felt incapable of analyzing the voluminous amount of data provided by the EIS and SEIS documents. Suggestions were made that funding for intervenors be provided whereas others simply wanted the documents to be reduced to a simpler form. Other people did not find the form of the review process amenable to public input. In the end, both panels made recommendations on public participation requirements.

Finally, people identified the need for public involvement prior to and after formal review hearings. This need was generally tied to the need for some monitoring of the concerns identified by the review hearings.

On the whole, information and, to some degree, consultation were seen as the responsiblity of individual oil companies when these involve their specific activities. Participation, in a more general sense, was seen as the responsibility of the provincial and federal governments.

The review of the community information and consultation programs (Study 1) would provide new information with respect to the effectiveness of public consultation by the industry. As for the more general question of the scope of public participation in major economic projects or development initiatives, this question falls squarely in the realm of government policy and little could be added to the debate by studies within the ESRF mandate.

ECONOMIC ISSUES

GENERAL ECONOMIC CONCERNS

Issues Raised

As with the general issues, a number of common themes run through the general economic concerns: uncertainty, lack of information, expectations, and competition. Offshore development is perceived by many informants as an entirely new phenomenon in Atlantic Canada, both quantitatively and qualitatively different from any economic activity or project known before in the region. The scale of offshore development is perceived by some to be far out of proportion to the capacity of the region or of individual communities to cope. The nature of the development is perceived as requiring exotic technologies, completely new labour conditions and unique land use and social effects.

Other informants were much more blasé, in degree roughly proportional to their closeness to the industry. The gist of their views was along the lines of "it's no big deal" or "we've already absorbed much of the change". In a different vein, a number of informants pointed out other megaprojects which have been absorbed in past years and suggested that we might find useful lessons in an examination of them.

Even assuming that familiarity breeds greater acceptance of the effects of offshore activity, important issues remain if only because of the information gaps that exist. In a sense, the most pervasive, even though it was rarely raised in specific terms, was "how much, and when, do we gear up in anticipation of offshore development?" This concern was expressed in terms of such issues as migration, training, business development, social services, and community infrastructure, to name some of the more common instances. In general, there was concern that if one under-anticipates, there is a danger of missing opportunities or being otherwise unprepared; alternatively, if one over-anticipates, one could over-build or over-train, thus seriously and unnecessarily affecting existing economic infrastructure.

The resulting issue is related to the role of government as a "regulator"; not in the legal sense but in the mechanical sense of a hand on a tap. To what degree <u>should</u> or <u>could</u> government intervene to speed up or to slow down offshore development? Alternatively, to what degree,

and in what way, should government intervene to boost or downplay the expectations of individuals, firms and communities? For the most part, informants felt that governments had raised expectations unreasonably, while failing to properly inform people as to how to deal with them.

A significant proportion of informants raised the question of competition or co-ordination in one context or another. In a sense, there are two sides to the issue. On the one hand, many informants were concerned at the destructive effects of competition at various levels; the potential to sub-optimize benefits for Canada, the Atlantic region, or any one province because of non-productive quarrelling over the spoils. On the other hand, just as many individuals were concerned that Ontario, or Nova Scotia, or Halifax, or St. John's, were going to get the lion's share and that fine words about co-operation were simply a smokescreen.

Competition in a different sense was raised continually in reference to the ability of the offshore industry and its service companies to out-compete existing businesses: whether for labour, docking space, housing, or a host of other resources. This concern expresses itself in terms of who will benefit and, more importantly, who will pay? Although some informants felt that the passage of time had shown many fears to be ungrounded, others felt that the community was being lulled into a false sense of security. In particular, the notion was often expressed that "well, even if one project (Venture or Hibernia) doesn't have that much impact, what happens when multiple projects come on stream?"

Finally, some informants were concerned with the underlying consideration of what gets done with the government revenue from offshore development. In the broadest sense, the question seemed to come down to whether offshore development would be used to transform the regional or local economies or to support and sustain the existing structures. In many respects, this latter point seems to be the most fundamental of all.

Commentary

Many of the issues described above are so general and so all-encompassing that a complete study of society would be required to address them. Others are either a matter of individual government policy, or a matter of individual choice or initiative. Some, however, do lend themselves to studies that could be addressed under the ESRF.

In important respects, the perception that the offshore is different is probably accurate. Certainly, anything on the scale of the North Sea activities would create profound changes. In addition, some offshore activities are qualitatively different from past activities in the area. On the other hand, the region has experienced the injection of large-scale projects before. Point Lepreau was not only a megaproject by any measure, but it involved a technology far more exotic than anything that will be used in Venture, for example. In a different vein, the Michelin tire plants have, together, accounted for something like seven times the permanent jobs that are likely to be associated with Venture. Developments at Come by Chance, Churchill Falls, and the Strait of Canso have all had their individual impacts -- many of them dramatic as far as individual communities are concerned -- and none has raised a fraction of the level of region-wide public concern or interest generated by Venture or Hibernia alone.

Two things seem to be lacking in many perceptions of the effects of oil and gas activities. The first is a very basic understanding of the economic and social dynamics of the region and of the ways in which major projects can affect them. Without such a basic understanding and, following from that, an appreciation of what makes offshore development genuinely different, it is impossible to make even an educated guess as to its possible effects.

The second absent component is an understanding of the offshore oil and gas industry in general. Atlantic Canadians have given considerable thought to individual projects, but too often without a conceptual framework of the dynamics of international oil and gas exploration and development, the technical infrastructure of offshore oil and gas exploration and development, or the vagaries of international and national energy politics. This has led to misunderstandings of scale, time-frame, and impact.

Many of the issues and sub-issues identified in the interviews need to be appreciated in such a context. With a fuller understanding of the basic context, many of the concerns about the macro-economic effects of the offshore might be allayed or better understood. Alternatively, the major impact points might be highlighted for more careful analysis and the dimensions of uncertainty might be better defined. Thus, two studies are suggested which might enrich our understanding of the context.

It appears that investigators studying the effect of North Sea oil and gas on Scotland find a major impediment to be the absence of a data base from which to begin. Without baseline data and at least a broad interpretation of the underlying dynamics of an area affected, it is obviously

impossible to even guess at, far less measure, the effects of a given project or set of projects. Many isolated pieces of the puzzle exist. The problem arises due to important gaps in the data, inconsistencies in the form of the data that prevent comparison, a lack of time series and the limited interpretive work that has been done.

The authors are not so hopeful as to believe that anyone will ever do "the definitive study". However, certain basic economic data could be assembled on a systematic and consistent basis across the region. Given appropriate time series, such a data base would permit interpretation of the economic processes in the region, rather than simply the economic situation at a given time.

While recognizing that this is not, on the face of it, a study specific to oil and gas, it is felt that the benefits to research related to oil and gas would be sufficient to bring it under the ESRF mandate. Quite simply, without such a starting point, monitoring and comparative studies will be exceedingly difficult. Additionally, for purposes of research related to oil and gas, there are compelling arguments to have the data base available on a regional basis, so that the entire Atlantic region can be looked at comparatively. It seems that no other existing structure is in a position to take such an approach.

As to the effects of projects there is, as previously mentioned, widespread uncertainty and misunderstanding of what types and scales of impact can be expected. There is nothing to help put it in perspective. In that regard, some comparative work may be useful. However, it would seem that the North Sea comparisons have been stretched close to their limit. Scotland, after all, is Scotland and the differences in timing and scale of developments and the developmental and institutional context is dramatic. There may be more differences, including perceived differences, between Atlantic Canada and Scotland than there are between offshore development and other major projects which have gone on here in the past decade.

Most of the studies that might be conceived of to deal with the other issues mentioned seem too vague to be useful or are beyond the ESRF mandate. How much to gear up is a question that can be answered only in relation to a highly specific issue; for example, training welders for pipelines. In another sense, such a question is an individual decision and an individual responsibility, which it may well be inappropriate for government to shoulder. The question of

government as regulator seems equally beyond the possibility of study. Governments make judgements based on a host of factors, much as individuals and companies do, and it is difficult to see what any study could contribute. For one thing, the necessity of day-to-day decision making in a fast-moving industry is likely to outrun the time-frame of any research study.

As to the question of competition or co-ordination, some sort of study should be possible but it is a very elusive subject. Beyond saying that undue competition and fragmentation of effort will probably sub-optimize the benefits, there is not much to add. Again, governments and communities will do what they will do. The only level at which a realistic potential exists for coming to grips with the issue through additional information is, perhaps, at the municipal level where various types of revenue-sharing arrangements would seem to have potential to mitigate unproductive competition. A research study in this area might be feasible and useful. It is, however, hard to see how it could be defined as being specific to oil and gas.

It may be more useful to look at the other competition issue; namely,that of competition for scarce resources. However, from what we can discern, most of the major areas of concern have been studied, both in comparison with the North Sea and in light of experience here to date and most have been found to be much less serious than anticipated.

As to cumulative effects, one thing is certain: without a solid base-line understanding of the economic dynamics of the region and of the effect of other projects, a study of cumulative effects would be pure speculation and would be more likely to engender yet new bogey-men than to lay to rest the all too many that exist now. It is conceivable that such a study might be feasible, given a far better understanding of the impact area, some initial experience with a live project, and, perhaps, a clearer picture of what other projects might be anticipated. It is, in short, a distant priority.

As to what gets done with government revenue, the question is set firmly aside for two reasons. First, for the foreseeable future at least, any revenue increase will be all too easily absorbed by other demands such as the winding down of accumulated deficits. Secondly, and more important, this is a matter of individual government policy.

Indicated Studies

Study 5. Baseline study of the Atlantic region's economy

Study 6. Retrospective study of the effect of other major projects in the region.

BUSINESS PARTICIPATION

Issues Raised

Concerns about business participation in offshore development arose in many different guises but tended to sift down to two essential questions: what can be done to maximize opportunities to participate; and, what can be done to create the greatest developmental impact? Few informants raised the second question *per se* but many alluded to it in comments about technological development and improving management practice.

A point should be made concerning the use here of the word "local". Depending upon the informant, the level of concern ranged from Canadian through regional and provincial to community participation and the meaning attached to local varied accordingly. Thus local business was used by various informants to mean Canadian, Atlantic Canadian, provincial, or municipal business, although the centre of gravity in this continuum tended to be provincial. In most of the following discussion, no attempt has been made to distinguish between different usages of the word because the issues are, for the most part, similar. Thus local can mean what the reader wants it to mean. The one exception to this is the discussion later in this section that deals specifically with locational considerations.

A question that arose in many forms and is very much in the public eye, was "what level of local participation can be expected?" Concern was frequently raised regarding the level, nature, and, most importantly, the timing of demand. Notwithstanding any efforts made so far to inform the community about business opportunities, the desire for more, or more reliable, information was a recurring theme in the interviews. On the other hand, oil companies and government officials were asking primarily "what are the capabilities of local firms?"

Informants both in and out of government wondered whether the initiatives taken to encourage business development were effective and sufficient. Lack of awareness of government programs was not identified as a deficiency. However, a very basic question, which arose frequently, if often indirectly, was exactly *what* deficiencies in the marketplace are government programs designed to address? To paraphrase one informant; why do apparently qualified firms fail to participate successfully or, in some cases, not even try?

Characteristically, the first issues that arose in many discussions about offshore opportunities concerned external impediments to participation (that is, external to the potential supplier). Many informants felt that more and better information would facilitate their participation.

The common question was "what are the realistic possibilities of participation for my firm?" On the other hand, the offshore operators and most government officials seemed to feel that almost everything that could be done to generate information has been done.

The predilection of offshore operators and their major contractors to 'stick with the old boy network' is perceived to be a continuing impediment, notwithstanding everything done to date in the area of Canadian or local benefits. The size of bid packages arose as a concern in some interviews but the problem of lead time was mentioned more frequently. Some informants in the private sector went so far as to suggest that offshore operators use short lead times as a way of subverting the intent of the Canada benefits agreements. Others suggested simply that there might be ways of mitigating the effects of short lead times that had not been fully explored.

Still in the realm of external impediments or, more accurately, external aids, some informants have suggested that Canadian regulatory requirements could be used to make Canadian suppliers more competitive; for example by the use of uniquely Canadian standards. It was also suggested that a more effective local interface between business and the petroleum industry is needed, although how this would differ from what the various industrial benefits agencies and industry associations are already doing was not made clear. This concern translates best, perhaps, as a need for a more co-ordinated interface.

Operators and many government officials took a slightly different view of the impediments to local participation, being inclined to ask what were the internal factors. It was variously suggested that local firms might be too busy, or too risk averse; that their physical facilities or labour forces might be inadequate; or that their management skills and practices were ill-matched with the demands of the offshore. In many instances, the last point loomed largest. Quick response, on-time delivery, and quality control were mentioned consistently as qualities often lacking in local firms.

Questions of management usually led to issues of management development and, more generally, of business development. Only a few informants raised the question of why participation should be encouraged at all beyond the fact that the offshore represented a new local market. The question of technology transfer arose consistently, although informants used this term in differing senses ranging all the way from the strictest meaning of "high technology" to the most general of "skill or technique". It is used here in the most general sense.

Some informants wondered what could be done to encourage the transfer of technology; others raised the antecedent question: "is a transfer of technology occurring?" There was some scepticism about supposed transfer arrangements, such as joint ventures, which were seen, in some cases, as simply a vehicle for foreign participation, with local firms involved for the sake of appearance. Others felt that many joint ventures were working well. Again, local management capability seemed to be the key.

A number of informants mentioned the issue of assessing Canada Benefits Plans. There was some concern that there were definitional and methodological issues that needed to be resolved and standardized. These centred on the issue of measuring Canadian content, and the difficulties in assessing value added, identifying leakages and determining Canadian ownership. To what degree, for example, is foreign oil refined in Dartmouth a Canadian product? Other informants seemed to feel that this was gradually being sorted out. One felt that much could be done to improve future plans. In this regard, it was suggested that an assessment of past Canada Benefits Plans be undertaken.

Finally, informants beyond the vicinity of Halifax and St. John's mentioned consistently that firms outside those two centres faced particular disadvantages in trying to participate in the offshore. There was some feeling that deliberate efforts were being made to concentrate activity in Halifax, in particular, and that efforts to achieve the opposite effect were warranted. Because this pervasive and important issue involves both opportunities for existing firms and the locational choice for new firms, it is dealt with at greater length later in this section.

Commentary

At its most general, and least useful, the issue of business participation could be summed up by the proposed study: "We should do a study of all the requirements of the offshore and the corresponding capabilities of all Canadian (Atlantic Canadian, Newfoundland, Nova Scotian) firms." Megaprojects, indeed! Without wishing to overstate the case, there appears to be something about offshore development, unlike any other economic activity, which leads people to believe that government both should and could cause business to participate. Therefore, one should be careful in assessing the issues raised to ask, "what makes offshore development so different?" Certainly, its potential scale and nature appear to raise interesting business opportunities for Canadians, and for Atlantic Canadians in particular; but then so did the demand for houses, cars, and newspapers.

That said, some attempt has been made to come to grips with the issue through the supply-gap study and its companion piece, assessment of Canadian capabilities, put together by a group of offshore operators. Also, COGLA has established a list of designated items, identifying commodities that present potential opportunities for Canadian suppliers. However, what will be done with the information in these studies is, apparently, still not clear. Thus, even if a gap and a latent capability to fill it are identified, it may not be possible to do anything about it. It may be that opportunities have been identified, which, on the face of it, are so attractive for Canadian development that government would be warranted in making a concerted effort to encourage businesses to pursue them. Before pursuing such opportunities, however, detailed research would be necessary, not only into the competitive potential for Canadian supply but also for export potential and the possibilities of fundamentally strengthening the Canadian economy.

For such reasons, the authors are hesitant to describe a study that would further identify targetted commodities. In any case, they are unfamiliar with the studies in question and the level of detail expressed in them. One informant did suggest that it would be a good idea to decide what to do next with the supply-gap and capability studies. As much as the authors are reluctant to propose a study of studies, this is raised as a possibility.

A more interesting and fruitful area of enquiry may be to investigate what has already happened. Canada and Atlantic Canada are now some years into the exploration phase of offshore development. Recognizing that the development phase raises a number of different supply possibilities, there is nonetheless, an accumulating body of empirical data. What businesses have successfully participated in offshore activity and in what way? Why have they been successful? Have they "developed"? Is there progress in the sense that more businesses are participating at a more sophisticated level? What has been the effect of government programs?

From a policy perspective, the last question is clearly the most relevant, and could be phrased as, what are the deficiencies in the market that various programs have corrected or, in the future, could correct? Program evaluation in such an amorphous area is difficult, and for this reason, an evaluation study as such has not been proposed. Rather, there is a case for a series of studies which, taken together, might yield the information necessary to evaluate the program structure but which, in any case, are inherently and independently useful.

First, there is a need for the systematic collection of basic data on both participation and on programs. Individual agencies have, at different times, collected parts of the information but the data referred to include time series covering total expenditure and number of contracts in various categories of service and supply, the proportion received by firms in various jurisdictions, and a tabulation of joint ventures and licensing arrangements. On the program side, time series data are envisioned covering such information as levels of expenditure, numbers of recipient firms, product versus service involvements, and the nature of the assistance.

As mentioned, much of this has been done but it has not been done systematically across the region, or even within one province. It is unlikely that many time series data have been collected and certainly nothing of this sort has been published. There is a rich potential here to establish a base, not only for further research, but also for generating better information for the public.

The array of government programs in place proceeds, at least implicitly, from certain assumptions about the impediments to participation in the offshore. First, it is assumed that information is lacking or, in some cases, that advice is needed. Secondly, "fair opportunity" to participate has been mandated in various ways. Thirdly, in some cases, monetary assistance has been provided. However, depending on whether the source is an operator, a government, or a local business, the views as to the real impediments to participation vary substantially. Obviously, a different understanding of the impediments leads to a different policy response.

No study will elucidate the "right answer" to this question. However, given a selective and in-depth examination of participators and non-participators, one might develop an enriched understanding of what internal factors distinguish one firm from another, or what external factors were operating in each case. Apart from the contribution to policy, the potential for object lessons is very high.

Business participation, in the development phase particularly, has a short-term quality to it and so, from governments' perspective, the more important issue is the development of new, expanded, or more sophisticated capabilities that will endure after a specific project has been completed. In the same way that one could ask 'what makes businesses participate', one could ask 'what makes them develop' in the sense of new products, processes, or markets, or more sophisticated management approaches. The reasons for such development could range from simple

exposure to the opportunities or demands of the offshore, to training, to licensing and joint venture arrangements. Government programs typically seek to facilitate both the development process itself and the use of mechanisms such as those described. In short, for the same reasons cited for a study of "participators", a study of "developers" would be useful.

A number of knowledgeable informants were of the strongly held view that the major impediment to participation and development was simply management attitudes and capabilities. This appears to operate at two levels. One level is an appreciation of the "culture" of the offshore industry, with its unique demands; the other is management and, more particularly, project management skills per se. Presumably, the accuracy of this assumption would be revealed as one output from the enquiries already described. Alternatively, by beginning with this assumption, it might be possible to design a study to show the most effective means of management training to address both attitudes and skills.

Finally, enough informants mentioned Canada Benefits Plans that it is worth considering whether a study in this realm would be useful. Certainly, there was a feeling that definitions were a problem, although some observers were inclined to call this merely an annoyance. Although the plans could certainly be improved, no study is proposed for two reasons. One is that it seems to be fundamentally a COGLA responsibility; the second is that the studies already described are clearly antecedents, and should thus receive priority.

Indicated Studies

Study 7. A continuation of the assessment of particular opportunities areas for Canadian business participation in offshore development.

Study 8. Assembling base data on business participation and incentive programs.

Study 9. Assessing impediments to business participation in offshore development.

Study 10. Assessing the circumstances that facilitate business development in response to offshore opportunities.

Study 11. Assessing and designing effective approaches to management development, with particular reference to offshore activities.

EFFECTS ON NON-OFFSHORE BUSINESS

Issues Raised

The effects of offshore development on other sectors came up periodically during the interviews, although less than anticipated. The main sectors where there was concern were the fisheries and tourism, and most of these issues are discussed in the section on shore zone issues.

A generalized concern was expressed related to the possibility of a skills drain and the associated wage inflation. This concern arose, primarily, in reference to the fisheries. Construction workers and skilled tradesmen were also mentioned, as were ships' masters and engineers. Other scarce resources which might be affected were wholly associated with the fisheries, and included berthing space and drydock or marine railway facilities.

There were a few concerns about possible effects on tourism; some negative, some positive. The major one was the possible effect of offshore activity in general, and oil spills in particular, on the aesthetic quality of coastlines. This effect was a particular concern in Prince Edward Island. Block booking of tourism accommodations to house construction workers was mentioned as having potentially negative effects on tourism. On the positive side, some informants proposed that the tourism potential of offshore activities should be exploited through the development of interpretive centres.

Commentary

With the notable exception of the fisheries, the effects on other industries emerged as comparatively minor concerns. In consequence, no studies are proposed in this area.

The evidence to date suggests that there has been very little drain of skills from the fishery. In an economy with a large surplus of unskilled or low-skilled labour, any industry that offers both training and employment is a boon. In any case, the proportion of offshore workers who have come from the fishery to date is small. Highly skilled occupations, such as ships' masters and engineers, have not proved to be a problem, largely because of the upgrading required to move from a fishing boat to a supply boat. Generally, for now at least, this issue does not seem to be of any substance. The effect on construction labour during the development phase might be another matter but, certainly at this point, construction labour is not in short supply. Nor is there any evidence of shortages in other areas beyond

those resulting from normal turnover rates. However, an increase in activity could begin to cause hardship in certain sectors. Thus, the offshore labour force monitoring system (Study 15) is proposed to capture information which would flag potential problems as they emerge.

Berthing space is reported to be in no more tight supply than before offshore exploration. The fact that offshore vessels are able to command priority for drydocks and marine railways by paying a premium has not created difficulties. Such a demand comes as a welcome injection into an economy with surplus capacity in many areas. It is likely that only a dramatic upturn in offshore activity would turn such a situation into one of supply shortage and it is anticipated that regular consultation between the fisheries and offshore sectors could head off any problems.

Tourism effects seem equally distant, at this point. The limited drilling activity in the vicinity of Prince Edward Island, is not seen as a priority concern. It seems unlikely, in any event, that the mere sight of a drilling rig will send tourists streaming to Maine although, if finds are made, reports of an oil spill could undoubtedly have a psychological effect on the potential tourist besides its actual physical effect on the beaches.

Whether the windfall for motel owners from block booking of accommodations would not more than offset any negative effects is unclear but, again, the effect is somewhere in the future and is not now a priority. Finally, the idea of interpretive centres seems to fall squarely within the mandates of provincial tourism departments and out of the purview of the ESRF.

LABOUR OPPORTUNITIES

Issues Raised

This section discusses labour opportunities and training, plus labour relations.

As with business opportunities, there frequently arose in discussions of labour a desire to know "the answer" to a degree not experienced in other sectors of the economy. The dominant questions in this case are: exactly how many individuals in each occupational category will be needed, and how many Canadians (Nova Scotians, Newfoundlanders) are there available to fill the jobs?

The issues behind these questions appear to reduce to two: first, is offshore exploration, development, or production being impeded or likely to be impeded by labour shortages; and secondly, are sufficient opportunities being afforded for Canadian and local labour? No one interviewed

suggested that labour shortages were arising or were likely to arise in the development phase, although concurrent developments would likely create supply problems in some construction trades. Nor were any knowledgeable informants concerned with the level of Canadian or local content. However, a number of otherwise knowledgeable informants were unaware of progress made in Canadian labour content. Thus, the real issue seems to have more to do with the availability of information. Similarly, some informants wondered whether the training infrastructure was adequate. However, the closer the informants were to the actual training system, the less they saw this as an issue, suggesting that it is primarily a matter of information dissemination rather than a substantive problem.

There was a more general concern that the real employment possibilities in, or related to, offshore activities were not being communicated effectively to the community at large. There was a feeling that expectations had become seriously inflated, although they were now deflating in response to the passage of time and events. In any case, the interviews did give the impression that information gaps existed, particularly in outlying areas, concerning the real possibilities for jobs and the availability of training.

There was concern in various quarters that, regardless of the results measured by Canadian or local content, some groups were not gaining access. These groups could be described either as "Target Groups", as identified by the Canada Employment and Immigration Commission, or as those who reside in outlying areas.

A number of informants raised concerns about classification and certification for offshore-related jobs. There seemed to be a feeling that the exploration phase was well in hand but that certification in other areas, such as gas-fitting or production work, was much less advanced. The evidence on this front was ambiguous, however, because other informants felt that matters were well in hand, considering the probable timing.

At a more basic level, some informants felt that the Nova Scotia provincial education system, for example, had serious gaps which were reflected in the difficulties encountered in training people for industry-specific specializations. Vocational training came in for particular criticism, on the grounds that too many people were being trained for non-existent jobs and that too few were being provided with the skills that will be needed. Concerns were expressed about the lack of industry or union input into decisions as to what types and degree of training the market really requires.

There were a number of comments to the effect that pre-vocational standards should be raised. There was a concern that vocational training was treated as a form of dumping ground for students who did not excel academically, rather than as a centre of excellence in its own right. As one informant put it: "just because a kid can't make the grade academically doesn't mean that he's any more likely to make it in vocational training".

Finally, there was a mix of comments on the labour relations framework offshore. Several informants felt that a review to identify special problem areas and unresolved issues would be of considerable use. The mix of jurisdictions (national, provincial, and foreign), the newness of the offshore industry to Canadian labour, and the peculiar nature of the industry's requirements, together seem to create a confusion that could lead to potential trouble.

Commentary

The question of the balance between supply and demand underlies most discussions on labour although, as mentioned, it is not obvious that this is a genuine issue. The number and types of skills required for offshore exploration are relatively predictable for any given number of active rigs. For a development project such as Venture, requirements can now be assessed in fair detail, but it is clearly much more difficult to anticipate the timing of such activities. Thus, an estimate may be highly accurate as to numbers and skills while still having very little meaning to either the individual job seeker, a training institution, or a government.

Supply assessment is a much more difficult problem, and the federal government is attempting to forecast detailed manpower supply through the development of the Canadian Occupational Projection System (COPS) model. Given the dynamic nature of the labour force, however, it seems improbable that anything other than generalized projections of supply, such as "we have roughly 'x' number of welders" as opposed to "we have exactly 'x' number of downhand welders", will ever be available.

Whether the assessment of supply and demand is really an issue or not depends, in part, upon one's faith in the possibilities of planning. Because of labour force mobility, particularly in the petroleum and construction industries, short-term supply shortfalls are relatively easily filled as long as artificial barriers are not created. In the medium term, most skill categories will likely be filled by Canadians through the provisions of the succession plans set out in the Canada Benefits agreements. Indeed, for all rigs and supply vessels working off Nova Scotia at the end of 1983, foreign workers comprised only 12

percent of those employed, and for operator staff and third party contractors, the corresponding figure was only 7 percent. The succession plans set out in the Canada Benefits agreements provide for steadily increasing Canadian and local content and for an increase in the number of senior positions filled by Canadians.

Categories of highly skilled jobs that require years of training and experience, may never achieve complete Canadian content. However, there is an argument that skills for which there is a comparatively limited world market may be better left to industry and the individual. Training for export is certainly not new to Atlantic Canada but, in areas where there is already a surplus of skilled labour in the international market, concerted efforts by government may only add a Canadian component to the international unemployed list after the development phase of any offshore project has passed.

Despite the generalized concern about the labour supply/demand equation, the most reasonable conclusion seems to be that it is as well in hand as it can be, given the limitations of uncertain projects and a dynamic labour force. What apparently is not well in hand is the public's understanding of that fact. There is some doubt as to whether any amount of public information will fully redress that problem but a start can be made.

Another deficiency may be in the comprehensiveness of the monitoring process. For example, the monitoring is different for Newfoundland and Nova Scotia: nowhere do the two data sets get brought together in a publicly consumable form and other east coast operations seem to get left out altogether. It may also be appropriate to extend the range of information, so as to capture things like previous residence or occupation. These two categories are mentioned specifically because monitoring such information might help to deal with two major concerns; first, in-migration or the come-back-from-away phenomenon, and secondly, the reduction of the available skilled labour pool.

Therefore, monitoring needs to be done more comprehensively and consistently for the region as a whole. Most importantly, information needs to be disseminated regularly. In particular, there is an apparent need for the dissemination of information on training programs. What are they? Who are they for? What are the prior qualifications? And how does one find out about them?

A study could assess the available information, design methods for filling gaps, design systems to ensure consistency, and design appropriate formats and dissemination channels for public distribution. All of this would have to be followed with a resolution as to how the flow is to be maintained.

Apart from its public information value, such a study would provide a data resource for monitoring the comparative progress of succession plans, affirmative action programs, and training programs. It is doubtful that much more can be done in these areas, at this point.

In the case of affirmative action, programs are being built into Canada Benefits Plans. Additionally, the federal government has its own plan in place with defined target groups. Although, on the evidence, progress has been slow, it will not be clear what more can be done until the programs have had an opportunity to work. The problem does not appear to be at the policy level but at the implementation level, and there seems little that research or information programs can do to assist the process.

As to the "geographically disadvantaged", this seems to be little more than a new manifestation of the long-standing concern of people away from Halifax or St. John's that they have less access to job opportunities in general. Although this is a real issue for many of the people involved, it is difficult to see how it can be described as an issue specific to oil and gas. The Strait of Canso area seems a particular point of concern, because of residents' past experience with union jurisdictional issues. Again, however, there seems little that research or informational programs specific to oil and gas can do.

Although certification requirements seem well in hand for the exploration phase and for marine skills and drilling generally, there was more doubt about later phases of development and production, including the onshore pipeline phase. One area of particular concern was public knowledge of certification requirements and skill levels. It seems possible that insufficient knowledge of actual certification requirements may be causing some sectors of the workforce to be overly optimistic about the possibilities of training and upgrading.

The industrial relations infrastructure of offshore oil and gas is, in many respects, new to the Atlantic region, if only because of the unique jurisdictional problems that have been posed. There are likely to be issues and problems that arise simply because of the uniqueness of offshore oil and gas exploration and development in the framework of Canadian industrial relations. A study that would look at comparative industrial relations regimes elsewhere, assess any issues that arose, and attempt to correlate these to the Canadian environment could be useful in anticipating potential problems.

Indicated Studies

Study 12. A study to design a monitoring and dissemination system for information on offshore labour force characteristics and training opportunities.

Study 13. Assembling information regarding certification requirements relative to offshore development.

Study 14. A comparative review and assessment of various labour relations frameworks for to offshore development.

EFFECTS ON COMMUNITIES

The effects of oil and gas activities on municipalities or communities has as many social as economic dimensions, but here the primary concern is with the monetary costs and benefits to communities and how they can best cope with them. "Community" is used rather than municipal unit, because it is a more general term equally applicable to a part of a municipal unit, a town, a city, or an unorganized rural area.

Issues Raised

The overriding issue that effects communities is information, or lack of it. Expectations, both positive and negative, seem to cover an enormous range of possiblities. Although some informants felt that knowledge was gradually improving with time, there was still a general desire for more, and for more "trusted" information. In essence, informants felt that their communities needed to be in a better position to assess and plan for the effects of offshore development.

Some misconceptions are relatively common. One is the notion that "when the offshore starts things will begin to happen" when, in fact, it has "started". Another concerned the notions of the requirements of the industry for facilities, most of which were inflated. However, the passage of time has apparently tended to mitigated this.

The sense of being kept in the dark increased roughly in proportion to the distance from decision-making centres. However, even informants in the main centres often felt that government and industry were not telling as much as they could or should.

Another issue of special importance is the distribution of activities. There is clearly a perception in every community except Halifax and St. John's that a deliberate effort is being made to concentrate activity in those two centres. There is an additional perception in St. John's that activity is being deliberately concentrated in Halifax, and in Halifax that it is being concentrated in Central or Western Canada. Some informants held the view that there was danger of activity being deliberately dispersed with possible detrimental effects. Others felt that the concentration in Halifax and St. John's was simply a result of natural forces and that governments were unlikely to influence things very much one way or the other.

The issue of speculation in real estate was raised only infrequently and, at least to date, is not seen as a problem. However, some informants were very concerned about future effects on renters and on the poor in particular, although they had no specific suggestions to deal with this issue.

Concerns were also raised about the implications of offshore development for a different type of training from that discussed previously; namely, the various types of public sector occupations for which demand may increase as a result of offshore activity. Although, as one informant argued, this is more of a social issue, it is raised here because of its training implications and because it came up most often in the context of the ability of municipalities to deal with offshore developments.

Commentary

The question of information is clearly something that needs to be addressed. Certainly a great deal of information has been produced and distributed in various forms and some people simply do not want to know anyway. As one informant put it, "There are the hopelessly naive, the eternally optimistic and the crassly opportunistic, for whom information is, if anything, undesirable." To this typology, could be added the eternally pessimistic. The other important point is that the passage of time does slowly clear up misconceptions.

The preceding notwithstanding, there are genuine information needs that should not be ignored. In the past, at least, an overdeveloped sense of the nature and magnitude of offshore development has led some communities into expensive but ill-advised actions. It cannot be assumed that everyone is now enlightened. Although there is a limit to how far it can go, an attempt to address the perceived need for information must be made.

Moreover, it should be added that the issue is not only one of information but of the capacity to use it analytically. This capacity is highly variable among communities of different sizes and the relative effect of offshore development may well be in inverse proportion to a community's capacity to plan for it.

In considerable measure, the basic mechanisms with which communities cope with external impacts already exists. In Nova Scotia especially, the legislative and advisory base for local planning is firmly established and can be activated on the initiative of a community.

On the other hand, there may be unique or unusual aspects of the effects of offshore facilities with which communities in Atlantic Canada have not dealt before. If so, the community education and information programs described elsewhere in the report would be useful. It might also be possible to assemble a community handbook describing the nature of possible effects the types and sources of information that should be monitored and the key levers that can be used to control or mitigate such effects. Much of the information already exists, and it would primarily be a matter of adapting it to Atlantic Canadian circumstances and compiling it in a single piece.

Another useful tool to aid in understanding the effects on a community would be a simple, illustrated handbook on offshore facilities; from supply bases to pipe yards, and from gas plants to platform yards; to answer such questions as what are they, what do they do, what do they need, what sorts of effects might they have on a community, how many are there likely to be (given different levels of activity), and what do they actually look like? A great many misconceptions might be dispelled by such a handbook.

It is difficult to know what can or should be done about the tendency of offshore costs and benefits to fall unevenly on different communities. Community rivalry for offshore facilities or related businesses is probably unavoidable, because such competition is neither new nor unique. However, the glitter of offshore activities may well increase the amount and cost of such rivalries. There may be ways to reduce rivalries by better understanding the distribution of benefits or by ensuring, when the benefits are unevenly balanced, that measures such as revenue sharing are introduced to redress the imbalance.

In any case, the question of community rivalry makes a further case for better information. If there is going to continue to be community rivalry, it should be informed rivalry. If a community has a better idea of its strengths and weaknesses, it may expend its energies more productively

pursuing realistic opportunities. If nothing is done, the cost of finding out eventually what the real possibilities are may be excessive.

The problem of concentration has an appearance of inevitability to it. Around the North Sea, the industry gradually concentrated in Aberdeen and Stavanger, just as it has concentrated to date in Halifax and St. John's. The only question is whether this is inevitable, or whether a herd instinct is operating which might be mitigated without introducing excessive inefficiencies.

Accordingly, it might be useful to undertake an assessment of what causes the offshore service and supply industries to locate where they do. What locational factors are essential to them? What public and industrial infrastructures do they need? Can centralization be mitigated and, if so, at what cost?

On the questions of speculation in real estate and of housing prices, there seems little that needs doing at this point beyond any normal monitoring by municipal administrations and housing departments. Although housing prices have undoubtedly risen in some communities, especially in Halifax and St. John's, the role of speculation or offshore activity is far from clear. In peninsular Halifax white-painting or 'gentrification' in the north end is evident, but anecdotal evidence suggests that very little of this is directly caused by offshore activities. It seems that most of the growth due to in-migration of company personnel has taken place in Bedford and Dartmouth. If there is a buying and renovation spree on the peninsula, it seems to be fuelled primarily by long-term Haligonians looking for a secure residence near the city centre. Clearly, however, affordability is a real issue for many groups.

The very existence of the multitude of misconceptions about offshore activities suggests the need for a different type of training altogether. Public information has value only to the extent that informed members of the public are able to integrate such information into a broader understanding of the issues.

Frequently it is made clear that the public did not know whose information to trust and suggestions were made regarding mediation mechanisms, trusted sources, and the like. The authors frankly doubt that a new information source will be any more trusted than existing ones. A preferable approach might be to better equip existing community leaders and professionals with the tools to critically evaluate the information they do get. To do so, appropriate training packages are needed which could be made available readily and cheaply to any client group. Their design would require a study that could potentially address the whole spectrum of concerns discussed in this report.

Indicated Studies

Study 15. A community handbook, describing the effects of different types and levels of impact, key indicators, and how to monitor and assess them, and the planning and regulatory tools available.

Study 16. A facilities handbook, describing in graphic form various facilities, their requirements, and the implications their location might have for different sizes of communities.

Study 17. A study of the reasons for the locational choices of offshore service and supply firms.

Study 18. Training packages in the basics of offshore development for use by community leaders, municipal officials, and others in the public sector.

SOCIAL ISSUES

OFFSHORE WORK ENVIRONMENT

Issues Raised

Offshore work, its nature and the implications of its characteristics, was a major concern of many respondents. The work is perceived as hard and dangerous with pressure on the workforce to perform work quickly, efficiently, and safely, often under adverse environmental conditions. Work requirements, plus the work regime of 12-hour shifts over a three- or four-week period, the inability to separate oneself from the workplace at the end of each shift, and the isolation from family and other friends all contribute further to the view that the offshore work environment is extremely stressful. This environment may have adverse effects on the individual worker, the workforce as a group, and the work.

Stress may subsequently manifest itself in the form of alcohol and/or drug abuse on the part of individual workers, and it may surface as tension between workers, both of which may have implications for work performance and safety. Onshore, stress may manifest itself in the form of interpersonal or domestic violence.

Commentary

Although many perceive the issue as important, there is little empirical data to support any one view. At present there appear to be few formal referrals to physicians concerned with mental health matters; however, this small number does not preclude the existence of real problems as they may not be emerging through this particular channel. Indeed, problems may not be formally recognized at all, or if they are, may not be associated with the particular work environment. If knowledge about the absolute magnitude of the problem is limited, so is the knowledge about its significance; there appear to be few data that enable comparison between the petroleum industry and any other work environment.

Review of the literature dealing with major resource developments in general, suggests that there may be cause for concern if not alarm. However, there are dangers of drawing direct comparisons between unlike events and there are examples where conclusions appear to have been based on

data insufficiently robust to support them. This conclusion is not to downplay the issue but rather to emphasize the need for better data about the nature of offshore work, in particular, and about its consequences in general.

It is apparent that when individuals do have problems, are aware of them, and wish to take some action, assistance may not be readily available. For example, counselling services for workers from rural areas may not be readily available and offshore staff, such as the rig medic, may not have the training or capability to offer appropriate advice.

Based on the criteria used for study selection, one or more studies addressing issues relating to the offshore work environment appear to have high priority. Interview responses show a high degree of concern; it clearly has wide applicability in a spatial and temporal sense for all offshore workers, and if the results of a study were to have implications for increases in job satisfaction and safety, such a study could have significant utility.

In the absence of good empirical data, initial studies would need to establish a baseline. An examination of the offshore work environment *per se* could be undertaken through an appropriately drawn sample survey of offshore workers. This approach might have the advantage of yielding statistically reliable results about variables that are relatively easily quantified. Supplementary in-depth interviews would be necessary to gain greater appreciation of what might be the more important hidden variables.

An alternative approach, with less statistical reliability but which may be more revealing about the more subtle forces at work and their outcomes, is an ethnographic approach that would detail the relationships between the offshore worker, his co-workers, the work, and the environment. This approach has been used to good effect in the North Sea area (for example, community studies in Shetland and a study of the Condeep construction experience in Stavanger), but careful consideration would need to be given to its implementation.

To place the work environment issue in a broader perspective, a comparative study of work-associated stress and its implications between the offshore petroleum industry and other comparable industrial environments could be undertaken. For example, "comparable" workers might include trawler fishermen, truck drivers, travelling salesmen, or construction camp workers. Although such a study may be useful in putting the offshore environment in its proper perspective, it may have limited utility with respect to addressing any actual problems in the petroleum industry and could have the effect of diffusing attention away from petroleum-related issues.

Specific studies to provide baseline data on the offshore work environment issue are identified later, and it should be emphasized that any baseline study carried out should be followed up by a monitoring program where warranted.

Indicated Studies

Study 19. A survey of offshore job satisfaction.

Study 20. An ethnography of the offshore workplace.

Study 21. A comparative work environment study.

FAMILY LIFE

Issues Raised

The offshore work regime is perceived as having significant potential for the disruption of family life. With husbands working offshore for three-week periods and then being home for an equivalent time, family members may be required to make significant adjustments to their lifestyle and interpersonal relations. The absence of the male head of the household may require that the spouse assume many of the roles and household functions that normally he would fulfil. On his return, they may revert to their original roles. This pattern may be disruptive for all family members, particularly children, where there is an inconsistency of parental roles.

Males may find some adjustment problems in shifting from a period of consecutive 12-hour workdays in an almost entirely male environment to a long period of consecutive leisure days in a family environment. These disruptive patterns, combined with the potentially stressful nature of the offshore work, may result in family tensions, including family violence, alcohol and drug abuse, and other social problems.

Commentary

The effects of petroleum-related activity on family life in the Atlantic Region are yet to be documented. Data drawn from the North Sea experience in some cases support the case for concern, but more often the data are partial or suspect as systems were not in place to gather the appropriate information at the right times. Similarly, the direct transfer of experience from one context to another is an exercise fraught with difficulty. Many assertions as to the effects on the family or social service agencies thus are based on assumption rather than demonstrable empirical evidence. For example, it is not known how serious the

problem of alcohol and drug abuse or domestic violence is among petroleum workers, or if the problem is any different from that experienced by other industrial workforces or by the general population. There is no information on the type or level of tensions created by the "intermittent spouse syndrome" or of the ways in which families respond to the disruptive work regime.

What is clear is that there may be few formal sources to which these particular families can turn for assistance with their special needs. For example, onshore-offshore communications between family members is cited by some informants as an area that needs attention. Similarly, there is a perceived need for special counselling services where community or extended family support services are unavailable or inadequate.

When the work regime disrupts family life and results in interpersonal friction and antisocial behaviour, it will have adverse effects on the individuals themselves, friends and colleagues, and productivity and safety in the workplace. In the absence of adequate data, but in the face of real concern by respondents, a study to determine the nature, extent, implications, and, if necessary, appropriate mitigative measures associated with petroleum-induced family problems is described in the next section on Shore Zone Use Issues.

Indicated Study

Study 22. Family life study.

COMMUNITY LIFESTYLE

Issues Raised

Concerns about the potential effect of offshore petroleum activity on community lifestyles revolved primarily around increased in-migration, including return-migration, and the potential erosion, in Newfoundland and Prince Edward Island particularly, of traditional lifestyles.

In-migration of individuals into East Coast communities, either to work or to look for work associated with offshore oil and gas, is viewed with considerable concern and as a mixed blessing. Increased activity and population growth is viewed by some as beneficial in terms of increased taxation, spending power, and infusion of new ideas, but by many more as being potentially detrimental in terms of the additional pressures placed on existing community infrastructure and services, particularly housing.

Other issues concerning effects on the community include the social problems of assimilation of newcomers, the formation of new elites of current community members based on income differentials, the emulation of non-local behaviour patterns (which may or may not be considered desirable), and the perceived merits of increased cosmopolitanism resulting from the newcomers.

In the Maritime Provinces informants identified particular concerns about return-migration, as well as speculative in-migration. Former residents are returning because of the downturn in the economy, preferring to be unemployed here than in, for example, Calgary. They often do not find jobs but, unlike speculative in-migrants from other regions, they have no other home to return to and so are at a dead end. These return-migrants find themselves in difficult situations and place stress on their families and on the social service system.

In Newfoundland and Prince Edward Island, in particular, considerable concern was expressed about the implications of oil and gas development for traditional values and lifestyles. Particular attention was given to the need to increase the understanding of, and hence an appreciation of, the existing way of life and values for the indigenous population in general and, more specifically, in-migrant supervisory and managerial staff.

One of the factors perceived as likely to influence lifestyle and values was changes in income levels. Petroleum-related work, particularly offshore, will mean a significant increase in income for some. Although this increase is recognized as having potential benefits in terms of the ability for some workers to improve their living standards, or to invest in different types of future, there may also be negative effects on some members of the workforce.

There are concerns that there may be increases in conspicuous consumption encouraged by the nature of the work or the "fast lane" image that some may associate with the petroleum industry as a whole. Alcohol and drugs may now be more "affordable" commodities and offshore workers, in particular, may find that they have more leisure time during which to indulge themselves. Pressure may well be placed on an individual's or family's capability to manage increased incomes and there appear to be few counselling services available to those needing assistance.

Commentary

The implications for specific social services and infrastructure are discussed in subsequent sections and specific study recommendations on, for example, monitoring and projection of demographic change and social service provision, are discussed in the section on Shore Zone Use Issues. More general questions relating to community change do, however, require special treatment.

The significance of these issues will be a function of such factors as the rate, type, and magnitude of change induced by oil and gas activity, the type of community or context within which change occurs, and the continuity of those changes. Thus rapid boom-and-bust changes associated with a major construction project in a small rural community are likely to have much more significant effects than the steady growth of "white-collar" type activities in a large urban context. Studies to examine community change may, therefore, tend toward the site-specific and thus be outside the ESRF mandate. However, a broad study that attempts to address the question of community and lifestyle change in general is recommended. On a more specific level, an incomer orientation program for industry managerial and supervising staff moving to the region would be useful.

Although the level of concern over lifestyle and values was significant, interviewees were rarely able to articulate the characteristics of these apparently important values or were able to do so only in very general terms, and then usually only by means of external comparisons with other "stereotypes". This inability should not be surprising, for tradition, culture, and values comprise many intangibles and the weight attributed to different elements by different individuals at different points in time can be expected to vary considerably.

It may be argued that there is no such thing as, for example, "the Newfoundland or Nova Scotian way of life." There are in fact many "ways" and any attempt to synthesise the essential qualities of a single "way" runs the risk of gross oversimplification and the creation of inaccurate stereotypes of little value.

Thus, it is far from clear as to how the issue of the effect of oil and gas development on lifestyle and traditional values should be approached. There <u>is</u> a case for a general review of the literature or an overview of the topic to determine what documented evidence there is that might help in specifying what the concept implies. However, such a review might yield little beyond a very general background document and some suggestions as to how the study might be approached.

A more direct approach, that would yield useful baseline data, as well as more generalized information, would be to identify a number of sites in the region that have a high potential for change induced by oil and gas activities. The next step would be to carry out a number of community studies that isolate the current physical and social infrastructure of the community, and to determine what people think the future will bring, and what they would like or not like to see it bring.

A baseline study of this sort may run the risk of generating false expectations and not all places chosen may in fact be subject to changes induced by oil and gas activities. Also, there is the problem that such site-specific studies may be outside the ESRF mandate.

Alternatively, it may be argued that the significant effects on lifestyle of changes related to oil and gas will be localized and, if these changes are to be monitored, then detailed baseline data are essential to enable pre- and post-petroleum effects to be measured. Concern with preservation of traditional lifestyles and the quality of life may be another way of expressing uncertainty about what oil and gas developments may bring. It may be that it is not change per se that communities fear but rather the speed with which it comes and the sense of lack of control over choices about their social and economic environment.

Clearly, in those areas yet to be affected directly by oil and gas developments or, where no formal discussions have yet been held (i.e., almost everywhere in the region except in parts of Nova Scotia), there is limited awareness of what might happen or how it might effect specific communities. Two specific examples given by informants characterize the effects of uncertainty.

On the one hand there is the fear that individuals and communities may suffer from the "Christmas Syndrome" whereby lack of knowledge and information may give rise to unrealistic expectations which, when unrealized, lead to a sense of disappointment, resentment, and frustration. This experience may lead to animosity among Provinces, communities, and individuals and can only be avoided by educating and informing the public about those events that can reasonably be expected to occur.

A second general feeling is that communities are treated like "mushrooms" by both industry and government alike, in that they feel that they are kept in the dark about prospective development until it is too late for them to have any meaningful effect on events.

In both cases there is a sense of powerlessness on the part of individuals and communities because they are far removed from any decision-making context and have so little real information to deal with. Public education and involvement thus appear as key elements and potentially have a very significant role to play in the resolution of this whole issue area.

The issue is a difficult one with which to come to terms. On the one hand, it was identified as an area of serious concern by informants. On the other hand, it is difficult to know to what extent the concern can be specifically attributed to offshore oil and gas activities, and it is even more difficult to devise a manageable and cost-effective study to measure or to mitigate it.

Indicated Study

Study 23. Community profiles study.

DEMOGRAPHY

Issues Raised

One of the more commonly expressed issues was the effect of the industry on patterns of migration and, hence, on rates of change in, and the composition of, the population. Such migration was considered to have both inter- and intra-provincial components (especially rural-to-urban migration in the latter case), and to be selective in terms of age, sex, and other characteristics. There was concern about the possible speculative nature of such in-migration, and the methodological problems associated with forecasting this component. These were thought to be particularly problematic in the case of return migration.

Potentially significant effects of in-migration that were identified included changes in community lifestyles, greater demands for housing and all social services, and more crime and alcohol and drug abuse. Particular concern was expressed about the "Yukon effect", which may be defined as the attraction to perceived boom areas of individuals with limited job skills or experience who may also exhibit or produce social problems that will place a burden on local services. A number of respondents suggested that there is a widespread misperception of the likely size and nature of any in-migration, and that this has generated undue concern, and undesirable speculative responses.

Commentary

Baseline and monitoring studies are prerequisites and ongoing requirements, respectively, for any impact assessment process. The ability to plan for, or develop, responses to change are closely allied to the ability to project accurately or to forecast demographic change. The changing demands for housing, land, infrastructure, and social services are in large part a function of changing demographic characteristics. Five-year census returns, although useful, may be inappropriate for monitoring changes that are expected, for the most part, to be rapid and often short-lived. The most appropriate type of monitoring and projection exercise is that carried out by the Grampian Regional Council in Scotland. It is an annual exercise in which current and projected levels of industrial activity are, through labour estimates, translated into population and household projections.

Such an exercise is by no means easy, especially at the early, less certain, stages of the resource development process; it is important, however, as it can provide a single (ideally commonly accepted), short-term set of projections for the region and its parts. Annual (or more frequent) updates allow for flexibility, timeliness, and, if a standard methodology is employed, comparability both regionally and temporally speaking.

Conceptually, demographic projections based on projected labour requirements, direct, indirect, and induced, are relatively straightforward though they may be much more difficult in practice. However, two components of demographic change of potentially the greatest significance are speculative and return migration. The two are not mutually exclusive but the different types of in-migrant may have significantly different effects.

Return-migrants may or may not have jobs waiting for them when they arrive. For all return-migrants, however, the transition and assimilation back into the local society will probably be much easier than the integration of other non-provincial migrants. Support systems for returning residents in the form of families and friends may mean fewer adjustment problems and less burden put on the social service system, at least in the short term, if no job is found. Speculative in-migrants, who have no prior ties to the community, may have precisely the opposite experience. On the other hand, it should be noted that speculative in-migrants who are unsuccessful in finding employment are less likely to stay a long time. Unsuccessful return-migrants, who have no other home to which to return, may face greater stress and have more adjustment problems over an extended period of time.

A study to forecast the likely levels of return and speculative migration throughout the region would be useful, but it is difficult to identify an appropriate research design. Monitoring change, however, appears to be more manageable and equally necessary.

Indicated Studies

Study 24. Demographic monitoring and projection.

Study 25. In-migration monitoring.

HOUSING

Issues Raised

A number of respondents indicated that there is insufficient information about the current and future demand for, and supply of, housing. This concern was linked to the concern about in-migration and includes both aggregate data and information in terms of location, type and tenure, and the timing of demand.

Housing issues were identified as being among the potentially serious local problems. They are seen both as a general concern, and as one which is particularly important for such vulnerable or 'at risk' groups as the poor, unemployed, single-parent families, and the aged.

Such factors as lifestyle changes and in-migration were seen as increasing demands for special-needs housing such as women's shelters, group homes for the mentally ill and alcoholics, and hostels for transients. This concern was expressed largely by agencies and lobby groups concerned with the interests of these groups.

Finally, it was suggested that special attention needs to be paid to the design and planning of workcamps at major construction sites.

Commentary

The studies undertaken thus far, principally by Canada Mortgage and Housing Corporation (CMHC), suggest that the effect of the offshore petroleum industry on the housing sector may be relatively modest. However, it should be noted that these studies are mostly based on a single offshore development (i.e., Venture or Hibernia), and on relatively unrefined projections for population and housing. The evidence from Scotland and Norway suggests that the industry may indeed generate significant new demands, both quantitatively and qualitatively. However, as usual, this evidence needs to be evaluated carefully because it would be wrong to assume either that the same will necessarily occur

in Atlantic Canada, or that the mitigative measures used in North Sea countries might appropriately be used here. In particular, the role of the state housing sector is very different in Scotland.

Clearly the demand for housing is best assessed by use of a population household forecasting and projection model such as is used by the Grampian Regional Council. Such household projections can then be used as inputs to a housing demand projection model such as is already being used by CMHC. Indeed, it seems that CMHC and the provincial housing agencies are the appropriate bodies to be undertaking such an assessment.

Potential inflation in housing prices is clearly an issue that causes considerable concern, likely as a result of price inflation in Newfoundland immediately after the Hibernia discovery, and currently in Nova Scotia. Again, however, consideration, and possible mitigation of it, seem to fall essentially within the purview of the federal and provincial housing agencies.

Issues relating to special-needs housing are best addressed through studies of lifestyles and in-migration as discussed earlier. If the evidence from such research suggests that there may indeed be major new demands placed on such special-needs facilities, further study may be warranted.

Factors to be considered regarding construction site workcamps include policies on the integration or isolation of camps from local communities, and the possible use of the camps and their facilities after construction activity has ceased. As to the former, both options have been tried in North Sea countries, with varying degrees of success. The concern with respect to post-construction use is what population the facilities will serve, and how the operating costs involved will be covered.

Although it can be argued that workcamps are associated with specific projects and sites, and hence fall outside the ESRF mandate, there are general principles of planning and design that will be relevant for all such projects and sites, and that could form the basis for a valid and important research study.

Indicated Study

Study 26. Construction-site work camps.

SOCIAL SERVICES

Issues Raised

A number of respondents argued strongly that knowledge of the current levels of demand for, and availability of, social services is deficient; and that these and future requirements should be studied. There was a perception, throughout Atlantic Canada, that the social services system is already under such stress that any further demand resulting from offshore development might be "the straw that breaks the camel's back", resulting in collapse of the system.

Any analysis of supply and demand, it was argued, must address the needs of groups particularly at risk or that will place special demands on the system. The former include the poor, unemployed, single-parent families, women, the disabled, natives, and blacks; the latter include petroleum workers and, because of the 'Yukon effect', in-migrants.

Concerns were also expressed with respect to the demand for, and supply of, various specific social services. Particularly frequent reference was made to this issue in the case of education, recreation, and health services, and these are discussed within those specific issue areas.

Commentary

Atlantic Canada is the nation's poorest region by most, if not all, of the standard economic indicators. Funding for social services is, as a consequence, limited and there is a general feeling that services in the main cannot meet current demands. Any additional demands placed on these services by oil and gas activity will further strain existing budgets, staff, and delivery systems. The oil and gas industry will undoubtedly act as a focussing agent for these additional burdens and may perhaps wrongfully be assigned the entire blame for shortfalls in services.

Although all services may be further stretched, a study of existing services to determine the current priority areas and the implications of future demands generated by oil and gas activities seems appropriate. This study should treat social services from a "residual" perspective, i.e., that social services are there because the normal channels of supply (the family and the market) have broken down. For many in the 'at risk' groups, (such as the poor, the unemployed, the aged, the disabled, single-parent families), this is the case. Projecting the effects on these groups may be difficult because of the indirect ways in which people are affected. An ongoing monitoring study of the demands for services thus also seems appropriate.

Both the above studies, however, appear to fall within the mandate of existing social service agencies.

Moreover, an evaluation of the demands placed on the social services system must be based, in large part, on a population forecasting and projection exercise and study of the characteristics of in-migrants and return-migrants. Aside from the issues already discussed, such as the 'Yukon effect', at least one informant in the social services sector suggested that previous experience with return-migrants had suggested higher expectations as to the normal level of social service provision. Thus, the most appropriate way for the ESRF to address these concerns with respect to the provision of social services may be by addressing the issues of population change and in-migration.

As for 'at risk' groups, women, the aged, the disabled, blacks, and natives are all highly visible; their vulnerability to discrimination leads to a higher-than-average representation among the poor and unemployed. Those belonging to two or more of these groups (e.g., native women) are especially disadvantaged.

Throughout this section ('Social Issues') reference is made to such groups within the issue categories as appropriate. Women, for instance, are identified as a special-risk group in discussion of the offshore work environment, family life, housing, health services, and crime. Although it is recognized that studies focussing on specific social groups may be particularly effective in some cases, such concerns can best be dealt with when integrated into more general studies.

EDUCATION

Issues Raised

Concern was expressed about new demands placed on educational services by in-migrant children, and the need for new programs to educate children about, and to provide career guidance with respect to, the petroleum industry.

Also, various individuals and groups, speaking from differing perspectives, were concerned about the ignorance of the petroleum industry shown by both children and adults.

Commentary

Current evidence suggests that the total effect of the industry on the education system will be modest, especially given the prevailing decline in enrolment. Further analysis of whether the requirement for new facilities or labour will be significant must await the completion of demographic and other projections.

Ignorance about the petroleum industry is a more immediate problem, because it leads to unnecessary antipathy towards the industry, incorrect career and investment decisions, and stress resulting from unnecessary concern about effects. There is a need for information programs and curricula that address these topics, using the formal and informal education systems and a range of media. Existing attitudes towards both the industry and government make it desirable that such programs and curricula come from neutral agencies.

This issue is clearly of overarching significance, because an improved understanding of the industry and its likely effects will benefit a range of other issues.

An incomer orientation program for industry managerial and supervisory staff moving to the region would also be useful.

Indicated Studies

Study 2. Industry information packages.

Study 27. Incomer orientation progam.

RECREATION

Issues Raised

Increased demand for recreational facilities and resources was considered to be a likely consequence of in-migration, increased leisure time, and increased incomes. This issue was thought to be particularly important in rural areas subject to major population increases. Particular concern was expressed about the possibility of increased incomes and leisure time resulting in increased use of all-terrain vehicles, with deleterious effects on the natural environment.

Commentary

This area is another in which the effect of the industry seems likely to be modest, unless it becomes clear that in-migration levels are higher than those currently foreseen. The in-migration levels will be determined by other, demographic, studies. The recreational requirements in areas near specific major construction projects are outside the mandate of ESRF, although general concerns and planning principles with respect to workcamp facilities are discussed within the Housing section.

HEALTH

Issues Raised

There was a perceived need to establish the current and future levels of supply of, and demand for, health services, both in general and with respect to special needs. The latter was considered to include the requirements of groups subject to the indirect effects of the industry (e.g., possible increases in rape, unwanted pregnancy, domestic violence, and mental stress), and such special industry areas of concern as hyperbaric medicine and telemedicine.

Specific concern was expressed about the labour requirements resulting from any new demand for health care, and the loss of skilled medical staff to work offshore.

It was also suggested that little is known about the specific effects of direct or indirect involvement with the industry on the physical and mental health of the population.

Commentary

Evaluation of the general demands placed on health services must principally be based on the monitoring and projection of population change and the number and characteristics of in-migrants as discussed previously. Similarly, study of the needs of specific groups, as identified earlier, should follow from a consideration of the likely scale of the problem, especially given the prevailing tendency to overstate the significance of the industry to the incidence of some social problems.

Requirements for health workers will clearly be established as a by-product of consideration of health services demands and supply. The loss of health workers to the offshore seems likely to be slight, and might be addressed by training specialist offshore medics.

Although the question of monitoring overall health levels is an interesting and not unimportant issue, it is difficult to establish a methodology that would increase our understanding of it in other than a retrospective manner, or allow us to distinguish the effects of one industry in particular.

SAFETY

Issues Raised

Offshore safety was a major concern to a large number of informants. The concerns expressed were both general and specific, with the latter encompassing a range of issues that have been succinctly expressed in the Offshore Safety Task Force Report (1983), which was produced for the East Coast Petroleum Operators Association and the Arctic Petroleum Operators Association.

Specific safety issues identified by the Task Force and mentioned by respondents to this study included: the need for greater co-ordination of federal and provincial regulations; the need for standardized emergency response plans; the quality of life-saving equipment and rescue equipment; deficiencies in marine emergency training programs; and possible conflicts between local preference requirements and safety.

Commentary

Concerns about these safety issues, stimulated in part by the Ocean Ranger disaster, and further focussed by the Offshore Safety Task Force Report and the Vinland blow-out, have generated ongoing responses by the industry and government agencies (see, for example, Eastern Offshore News, Volume 5, No. 3, December 1983, pp. 8--10). For this reason, no specific safety projects are recommended at this time. This area should, perhaps, be reviewed in a year's time to see whether industry and government responses to the Task Force report have alleviated public concerns.

ALCOHOL AND DRUG ABUSE

Issues Raised

Alcohol and drug abuse were seen as a serious problem which may be significantly exacerbated by offshore activities related to oil and gas. Factors causing this were thought to include a stressful work environment offshore, increased income and leisure time, and the macho image of the industry. Although some argued that society (and especially rural society) was not 'strong enough' to withstand such pressures, others were concerned that this view was a misperception likely to result in inappropriate policies. In both cases there were calls for baseline studies, monitoring, and the introduction of preventive and mitigative measures, if necessary.

Commentary

Concern about alcohol and drug abuse was widespread and was considered to have implications for a variety of other issue areas including family life, safety, health, and crime. The North Sea evidence does suggest that significant increases in alcohol and drug abuse may be associated with petroleum development; it is not clear, however, that the effects of other similar major industrial developments are any different.

Indicated Study

Study 28. Alcohol and drug abuse study.

CRIME

Issues Raised

It was thought that offshore oil and gas activity would result in increased criminal activity, both generally and in certain categories. In-migration, increased income differentials, and family tensions were expected to result in absolute and relative increases in the incidence of vandalism, rape, prostitution, drug trafficking, white-collar crime, and domestic violence. The influence of in-migrants was thought to be particularly significant, depending upon the average in-migrant profile, considering the lack of family and community support and controls. As with alcohol and drug abuse, concern was expressed about the possibility of misperceptions and the consequent introduction of inappropriate policies and programs.

Commentary

The evidence from both Scotland and Norway suggests that this area of concern has been overemphasized. Clearly, population increases result in more crime, but incidence rates seem to be affected differentially. Thus, there may be a decline in crimes of poverty (e.g., petty theft), and an increase in crimes of affluence (e.g., fraud).

The topic of population increase and in-migration seems best addressed through broader demographic studies, whereas any misperception of the effect of the industry on crime rates might best be considered in a general program of education about the industry and its effects.

SHORE ZONE USE ISSUES

GENERAL CONCERNS

This discussion covers effects on commercial and traditional uses of the shore zone of activities related to offshore oil and gas. It does not attempt to deal with issues that are deemed to be primarily environmental in nature. However, the dividing line between social, economic, and environmental issues in the shore zone is usually blurred, with "environmental" issues having social and economic consequences. No attempt is made to define the physical limits of the shore zone; all issues perceived being related to shore zone use are included and considered.

Issues of shore zone use have a number of similarities to the overview issues regarding concerns about uncertainty, information, the generation of expectations, the review process, and public participation. This number is not surprising, in that much of the population in Atlantic Canada resides in the shore zone; there is an historic dependence on maritime commerce, defence, the fishery, and other coastal resources; a large proportion of the region's special places and tourist attractions are found in the shore zone; and, it is the focus for outdoor recreational activities. As a result, general issues of concern relate to information on sensitive areas, the understanding of coastal ecosystems and processes, and the effectiveness of contingency plans for oil spills. Whereas these may appear, on the surface, to be environmental issues, most of those interviewed were not primarily concerned about the environment *per se*, but about potential effects on their use of shore zone resources.

Concerns about cumulative effects of multiple projects and the siting of major hydrocarbon facilities are not unique to the shore zone but, they tend to be identified as issues of shore zone use. There were many questions about the effectiveness of present planning and review processes. In part, this is caused by uncertainty (such as not knowing what facilities are going to be required or where they will be located) and, in part, by a desire to minimize impacts on important coastal resources. There is also a general concern about how people and businesses will be compensated if the petroleum industry has a negative effect on their livelihood.

RESOURCE INVENTORY

Issues Raised

Information issues were identified in significantly different ways by two groups of respondents. The resource-user group (which includes fishermen) has quite diffuse information requirements, which are addressed under the social issues. The industry and government group, on the other hand, already generates a large volume of data and information, and the predominant issue, therefore, is the need for improved access to, and analysis of, the many useful data bases kept by the various responsible agencies so that sensitivity analyses are facilitated.

Support exists for supplementing and expanding the present Canadian Marine Data Inventory, the main impetus for which seems to be data needs generated as a result of planning for offshore oil and gas exploration and development. Negotiations are in progress concerning a Marine Resource Information System (MARIS). The concepts being discussed involve linking or interfacing the various data bases, rather than consolidating them in one place. Outstanding issues identified by informants include: first, the degree of interpretation necessary to make data useful to scientists and managers other than those who generated the data; secondly, the reliability and confidentiality of certain data bases; and thirdly, the degree to which user requirements will be satisfied by the proposed interfaced system.

Both government and industry personnel identified the requirement for sensitivity analysis of shore zone environments as an issue. The words "sensitivity analysis" seem to mean different things to different people, but in any event would be dependent upon a complete and accessible resource inventory, because a combination of both environmental data and shore zone uses is suggested by most informants as necessary for the construction of sensitivity analysis maps.

Such a resource inventory might assist in answering some of the following questions for a specific geographical region: Which are the most productive salt marshes? Which are the most used recreation beaches? Which and where are the fish plants with salt water intakes? Where are the nesting areas for seabirds? Where is fixed fishing gear located? Where are the best potential aquaculture sites? What tourism enterprises and commercial activities are dependent on the shore zone?

Commentary

Information requirements on shore zone uses, processes, resources, and sensitive areas tend to be similar for a variety of planning and management requirements. Regional/ municipal planning strategies, project review and assessment, contingency planning, facilities siting, fishery and aquaculture areas, and tourism/recreation planning often result in the collection and analysis of the same data for different purposes. Almost everyone involved in these activities complains about the time and resources spent on data collection.

Two significantly different types of issues should be differentiated. The first is access to raw data by users other than the individual or agency generating the data; the second is sensitivity analysis, which includes interpretation and resource analysis.

The need for better access to existing data on the grounds of efficiency, less duplication, and more rapid response to proposals is agreed. Indices of available data on land and water resources have been prepared by the provinces of Nova Scotia and New Brunswick and (in progress) by Environment Canada. A number of proposals have been made to link and interpret, in various formats, the available data bases.

Offshore oil and gas developments have added a new sense of urgency to these proposals although many other activities will also benefit, including the assessment of ocean dumping proposals, the siting of coastal facilities, and some aspects of fisheries management. Because there will be significant benefits for considerations related to oil and gas, ESRF should consider accepting a major role in this effort in co-ordination with other users benefiting for an improved access to data.

Additionally, it seems that the ESRF could play a role in the creation of sensitivity maps that would be useful to the oil and gas industry as a whole.

Indicated Studies

Study 29. Improving the accessibility and use of shore zone baseline data.

Study 30. Shore zone resource inventory.

CONTINGENCY PLANS

Issues Raised

Existing contingency plans were criticized by informants for several reasons. First, they are physically unwieldy, especially for documents intended for field use. Secondly, information contained is often general and frequently outdated, and no provision is made for maintaining current data. Thirdly, priorities may vary according to exceptional circumstances at the time of the emergency such as whether the bird population is unusually high or low for the time of year. Fourthly, a different actual course of action from that predicted may effect other resources with different priorities. Finally, preferred treatment or protection for actual resources is not identified.

These criticisms led some informed observers to respond that the main value of contingency plans was in the experience gained by their preparation and study, rather than in detailed reference to them during an actual emergency. There is some merit in this, as any such situation is usually subject to "Murphy's Law", and a manager unfamiliar with the contingency plan before the event takes place is unlikely to have time to consult closely a lengthy document during the first hours of a crisis. Detailed information is more likely to come from in-house or outside experts familiar both with the contingency plan and existing circumstances. However, many informants did make suggestions leading to improvements, such as the preparation of comprehensive plans for the protection of the shore zone in specific geographic areas, rather than individual plans by each of the numerous companies operating in the same area.

Commentary

Informed government and industry personnel agree that contingency plans are improving with time. However, the general public and the users of shore zone resources have little knowledge of, or access to, the plans even though the documents are public, so there were few comments from these informants. As noted previously, the quality of information on coastal resources and sensitivity appears to be inadequate. Proposals have been made for information systems to be more current, to be portable in the field, and to have the capability of displaying the same information in several locations simultaneously. The objective would be to permit the continuous, real-time evaluation of priorities during incidents. In addition, the idea of developing common plans for shore zone and marine protection in areas with several operators seemed sensible and should be explored.

Contingency plans are designed to deal with situations in which the essense of success is rapid communication and rapid decision making. Regardless of the length or complexity of the plan, much depends upon individual judgment based on the best available knowledge. There cannot be extensive public involvement in such an exercise, but shore zone users could play a useful role in ensuring that all factors have been taken into account in preparing the contingency plan, and that background studies are accurate.

Indicated Study

Study 31. Contingency plans: evaluation and improvement.

THE FISHERIES AND AQUACULTURE

Issues Raised

The fisheries are established industries of the shore zone in Atlantic Canada and a large number of people are dependent upon them now -- and hope to be a long time after the petroleum industry has come and gone. The fisheries are the only non-related industries that may well be most affected by petroleum-related activities as reflected by the large number of issues that were identified.

The first set of fishery issues identified is the potential effect on stocks. The primary concern is the potential effect of hydrocarbons and other substances, released as a result of oil and gas activities, on stock recruitment and the potential mortality to stocks of fish, shellfish, and marine mammals. These are identified as important issues, particularly with respect to fish larvae, estuarine nursery areas, and sedentary species such as lobsters, scallops, and other shellfish. There are also specific issues related to activities such as pipeline construction and the use of explosives for seismic exploration.

Potential conflict with fishing gear, vessels, and facilities provides another set of issues. Fishermen are concerned that their gear may be fouled by oil pollution and damaged by oil vessels or debris. Their fishing operations may be affected by oil vessel traffic and the risk of collision with navigational hazards may be increased. Aquaculture sites and fish-processing plants may be affected if water supplies are polluted by oil or if catches are contaminated.

On the other hand, positive effects were also identified. Petroleum industry activity is likely to lead to improved navigational aids, communications, weather forecasting, and search and rescue facilities, making the offshore safer for fishing vessels and crews. Identification of shore zone resources and sensitivies is also being accelerated by offshore oil and gas activities.

Concerns over access and competition were identified by a number of people, many of whom were familiar with North Sea issues. These include concerns about loss of access around offshore rigs or along pipeline routes; competition for ocean space for fishing operations; competition for skilled crew members; and competition for port, repair, and servicing facilities.

Marketing issues that were identified are all related to tainting, or the perception of tainting, by hydrocarbons. Stocks that are tainted cannot be marketed and this could be a significant issue where there are large offshore spills or when estuaries and the intertidal zone are affected. The perception of tainting is probably the most serious problem. If buyers suspect that even a few fish or shellfish from an area are tainted, there may be severe repercussions in the marketplace.

Aquaculture is a promising new industry in Atlantic Canada, although its economic and social significance is, at present, very limited. There are concerns about effects on the existing industry, as well as for its potential growth. Informants' main concerns were that hydrocarbon pollution may foul gear or result in the tainting or mortality of stocks. There is a perceived need to identify potential areas with high capability for aquaculture to ensure that the petroleum industry does not limit capabilities for expansion.

The numerous concerns cited by aquaculturalists are similar to other fishery interests, and include: their inability to avoid an oil spill; their vulnerability to the deterioration of water quality; potential effects on recruitment; the sub-lethal effects of hydrocarbons on stocks; tainting; effects on hatcheries and holding ponds; and potential navigational conflicts.

Commentary

Given the importance of the fisheries and the potential effects of the petroleum industry, it is widely recognized that these issues must be taken seriously. A number of the issues identified (e.g., pipeline construction and seismic exploration) are project specific or environmental in nature, and do not appear suitable for ESRF socio-economic

studies, unless treated as examples. Other issues, such as stock recruitment, nursery areas, and sedentary species, divide into requirements for avoiding or mitigating the problem or paying compensation. These issues are addressed through study proposals for resource inventory, contingency plans, and compensation developed under other headings in this report.

Vessel traffic conflicts are an issue that appears to warrant study, given present and projected volumes of oil vessel traffic on the Scotian Shelf. A navigational risk analysis might be required, not only to assess risk between vessels from the petroleum and fishing industries, but also with respect to other coastal shipping. The need to establish petroleum shipping lanes or some form of management system for vessel traffic should be evaluated. Information programs to familiarize oil and fishing crews with each other's operations should be developed. The NORDCO study and the Venture Panels noted these as significant issues that should be addressed and they appear to be appropriate for ESRF funding. Data on vessel sightings now being collected by the oil and gas industry could provide the basis for such a study.

Tainting is also an issue where further study appears to be required. The term "tainting" is used here to mean a detectable <u>taste</u> in fish and shellfish which may or may not indicate a health hazard. As a result of tanker spills in the Atlantic Provinces, tainting problems have been identified for clams and lobsters, but only in very localized areas. Tainting is known to occur in both oysters and mussels and it is also believed to occur in finfish such as salmon, cod, and haddock. However, experience suggests that very high concentrations of oil are necessary to produce tainting of lobsters. Bivalve molluscs (clams, mussels, and oysters) retain oil for indefinite periods, although it may not remain in sufficient concentrations to produce tainting. Oyster growers in Brittany, France, have destroyed all stocks rather than risk marketing a potentially tainted product.

The possibility of tainting as a result of oil spills is taken very seriously by the fishery. The reasons are easy to understand: tainting is invisible but can destroy all value of an apparently acceptable catch; it is subjective and at present is not amenable to measurement, so that no standards have been set; it may appear at some distance from the actual source of the pollutant, due to fish migration; tainting in shellfish may persist for years and, in extreme cases, entire markets may be affected by the perception that the product tastes bad. At present, no one knows whether these concerns are real or perceived. In any event, they are arguably better dealt with under an environmental, rather than a socio-economic, study.

Aquaculture is expanding rapidly in the Maritime Provinces, although it is still very small in Newfoundland. There is a need to identify potential areas for aquaculture, but this is not seen as a reponsibility of the petroleum industry.

The likelihood of gear conflict or problems with vessel traffic is very small and should be resolved through existing procedures. A major concern is the occurrence of an oil spill from nearshore installations such as a pipeline or from shipping, but this is covered in the discussion of compensation. Aquaculture concerns over compensation and tainting are also described in that section and are very similar to other fishery issues.

Indicated Studies

Study 32. Oil vessel conflicts with the fishery.

Study 33. Hydrocarbon tainting of fish and shellfish.

Study 34. Potential areas for aquaculture.

COMPENSATION

Issues Raised

Central to all concerns of the inshore and offshore fisheries and of aquaculturists is the issue of compensation. Although the petroleum industry has been negotiating compensation packages for the east coast region, most fishermen complain about a lack of information on compensation at the local level. Numerous concerns were identified concerning what is to be covered by compensation agreements and the mechanism by which compensation is to be claimed and determined. Issues were also raised regarding attributable versus non-attributable damages and legal recourse versus compensation agreements.

Few people at the local level were aware of the existence or content of the draft Compensation Policy at the time interviews took place (January--February 1984). Some who knew of its existence believed that it covered oil pollution, which it does not. This belief seemed to spring, in part, from the apparent flaws in accessing the Maritime Pollution Claims fund, leading informants to expect that the Policy would supercede it. Many informed observers were also concerned about subjects specifically not covered, such as loss of access to fishing grounds and the lack of any specific reference to aquaculture. No special problems were reported by anyone involving supply boats or seismic vessels, although the potential for contact exists. More complaints were made about conflicts between fishing vessels than complaints about the petroleum industry.

Commentary

Despite federal and provincial statutes designed to resolve compensation problems (Canada Fisheries Act; Canada Shipping Act, Part XX; Oil and Gas Production and Conservation Act; and Newfoundland Fisheries Act), and the multi-million dollar deposit required prior to the issuance of drilling permits, serious concerns remain. The Fisheries Act provides for compensation for loss of fishing income where the pollutant is attributable to a particular source. The Maritime Pollution Claims Fund (MPCF), established under the Canada Shipping Act, may be used to compensate for damage by oil spills from an unattributable source. Neither Act has been successful in making compensation easily or quickly available to fishermen or others. The procedural difficulties involved in pursuing recourse through the courts seems to be a major obstacle. Additionally, the offshore environment does not lend itself to traditional legal standards of proving a factual chain of consequences.

Actual experiences in the two large-scale spills that happened in Nova Scotia (the Arrow, 1970; the Kurdistan, 1979) were reported to be very good. Claims were handled quickly through ad hoc processes established in each case, which seemed to function more smoothly than the traditional legal process.

The Canadian Petroleum Association/Offshore Operators Division (CPA/OOD) has prepared a draft Fishermen's Compensation Policy and Scheme which was made public on 4 October 1983 for comment and review. On the grounds that attributable damages may be recovered through the courts if a settlement cannot be made with the responsible company, and non-attributable oil pollution damages may be recovered through the MPCF, the proposed scheme does not deal with these areas but rather covers compensation for non-attributable damage to gear or equipment, the vessel itself, and loss of catch. Damage eligible for compensation must be caused by debris from petroleum exploration and production activities (including contact with supply or seismic vessels) when the party responsible cannot be identified.

Many informants, both in the fisheries and aquaculture and in government, expressed concerns with the limited scope of the Fisherman's Compensation Policy. Because of the generally unsatisfatory experience with seeking recourse through the courts, they would prefer to see clear policy statements from the individual companies as to how attributable damage would be handled. However, there is reason to believe that the major companies may be preparing such statements, so this may not be an ongoing issue.

It is not surprising to discover that the subject of compensation is a mystery to most participants in the fisheries. Only a few examples of unsatisfied compensation claims between the petroleum industry and the fisheries were reported in Atlantic Canada, although this does not mean that there are not any unsatisfied claims nor that claims have not been pursued because of procedural difficulties.

Indicated Study

Study 35. Compensation: examination of scope and accessibility of coverage.

TRADITIONAL USES

Issues Raised

Traditional uses of the shore zone were not identified as concerns in the Maritime Provinces or the island of Newfoundland. Informants said that native people appear to make limited subsistence use of shore zone resources, although a number are employed currently as commercial fishermen (such as at Lennox Island, PEI) and in aquaculture (such as on the Bras d'Or Lake). They could be affected in the same way as other commercial fishermen. Potential effects on other traditional community uses of the shore zone were not cited as concerns.

Labrador informants, however, are concerned that tanker traffic and offshore exploration may affect the fish and marine mammals of the north Labrador Sea. This concern includes potential oil pollution and the effect that tanker noise may have on marine mammals. The effect on the inshore fishery is identified as a basic concern which also has social and economic implications in that the Inuit prefer fishing to wage employment. Oil spill trajectories and clean-up technology are identified as question marks. There is a general concern about the effect of oil and gas on the Inuit lifestyle and community values based on their traditional use of marine resources.

Community informants expressed concern about the lack of information from the oil companies about planned activities, although Canterra was lauded for its exemplary program in 1983. Even though exploration activity on the Labrador Shelf is winding down now, there is a belief that the future potential is good and that it is important to keep the Inuit involved.

Commentary

There has been an active drilling program on the Labrador Shelf for a number of years, with discoveries of both oil and gas, although exploration activities in this area are presently winding down. There has also been a series of proposals to transport Arctic oil and gas along the Labrador coast to east coast markets. These include the Arctic Pilot Project, Beaufort Sea Oil, and Panarctic's new Bent Horn demonstration project. The Labrador Inuit have been frustrated in a number of attempts to have their concerns addressed and feel that they are left out of many studies and government programs because they live south of the 60th parallel.

The winding down of oil and gas exploration on the Labrador Shelf, and the low probability that Arctic oil or gas tankers will be in operation during the next few years, would seem to indicate that this issue need not be given a high priority. On the other hand, the Inuit would argue that they have been left in the jurisdictional gap too long and that studies are overdue. The ESRF (South) would appear to be an appropriate vehicle for funding such studies.

Indicated Study

Study 36. Effects of oil and gas on shore zone usage by the Labrador Inuit.

TOURISM AND RECREATION

Issues Raised

Concerns about tourism and recreation are limited in number. They include how to secure tourism benefits from regional publicity attributed to oil and gas; spin-off benefits from conventions, petroleum executives, and off-duty workers; and the potential for tourist-oriented information centres on offshore oil and gas, such as are often found in National Parks. The spectre of an oil spill polluting Cavendish Beach, for example, was identified as the sort of event that could have a dramatic effect on recreation and tourism. Potential oil pollution on recreational beaches is a concern throughout the Maritime Provinces. There are aesthetic concerns about oil rigs or other facilities locating too close to National Parks or to other special places; about oiled birds and mammals; about the design criteria for industrial facilities; and about the potential loss of heritage associated with the disruption of waterfronts in old coastal communities as oil and gas industrial facilities spur redevelopment of historic port areas.

Commentary

These issues were only identified by a distinct minority of people, indicating that they are not perceived as significant issues at present. Concern over petroleum impacts on National Parks, special places, and recreational beaches may increase rapidly if offshore exploration should begin to occur in close proximity to them. At present, these issues appear to have a low priority for ESRF funding.

PLANNING AND MANAGEMENT

Issues Raised

A number of informants pointed to the lack of an integrated planning and management process for the coastal zone as an issue. They identified sensitive areas and a variety of coastal resources as concerns, and the need to consider systematically these and related coastal ecosystems when making decisions that may affect on them. The oil and gas industry is considered to be a threat to these resources, and informants were concerned that comprehensive planning and management processes are not in place. The following concerns were noted: cumulative effects from multiple projects may affect coastal resources and will not be predictable from project-specific studies; there is no method for systematically identifying priorities for decisions on resource allocation; and decisions on the siting of hydrocarbon facilities may not take adequate account of other coastal resources.

Many people identified issues that could be addressed within the framework of a comprehensive siting process, because concern for the avoidance of sensitive coastal areas is high throughout the region.

Some of the informants mentioned concerns about negotiations of one sort or another between the petroleum industry and existing resource users, and they expressed a need for some type of impartial go-between. This idea was further developed by some informants as requiring some form of mediation to assist in the process of negotiation.

Commentary

The essential characteristic of proposals for coastal resource management is a comprehensive process for making decisions on the allocation of shore zone use. The need for such a process has never been acted upon in Atlantic Canada, although numerous proposals have been made. Without a comprehensive process for the allocation of usage of coastal

resources, partial processes, such as facility siting, are required. Although partial processes assist in alleviating the problem, they fail to address such issues as the cumulative changes resulting from multiple projects, and the systematic identification of priorities for research and other decisions on resource allocation.

Siting analyses for large hydrocarbon-related facilities and pipelines have been conducted for years by industry. Industry has a need to evaluate alternative sites using criteria based on project economics and site and facility requirements, whereas government (and the public) are interested in a wider range of environmental, social, and economic criteria. The general purpose of a facilities-siting process is to identify sites that are acceptable to industry, government, and the public at an early stage in project development, thereby avoiding issues and confrontations over bad decisions.

Most of the serious environmental concerns raised by shore zone development are either negotiated through committee or with governments, to obtain regulatory approval. This negotiation can lead to costly delays in project approvals. There is a need for a study to investigate the use of mediators to facilitate negotiated agreements and to limit the need for arbitrary resolution of disputes. The conditions under which mediation should be tried, and the possibilities for establishing a mediation centre, should be examined.

Indicated Studies

Study 37. Hydrocarbon facilities-siting process.

Study 38. Mediation evaluation.

INDICATED STUDIES

This section includes brief descriptions of all studies identified in the discussion of issues. The descriptions include the nature of the study and its objectives, and any additional relevant comments concerning methodology, anticipated problems, or the like. The study descriptions do not go as far as terms of reference but, in combination with the rationale described in the commentaries, all the essential information to develop terms of reference is provided.

Identification of specific studies developed out of a consideration of the issues identified, and from suggestions by informants. Studies suggested were specifically excluded if they fell outside this study's terms of reference (e.g., environmental studies); if they were project specific or oil company responsibilities (e.g., regulatory compliance); or if they were an existing governmental responsibility.

Each study is given a ranking based on the criteria described in the methodology (Table 1). Studies were rated higher or lower depending upon such criteria as the level of interest, concern, and knowledge expressed by the informants concerned with the issue involved; the breadth of applicability of the study; the immediacy of issues dealt with; the significance of the results for other studies; the usefulness of the results; the attributability of the issue to petroleum-related activities; and the practicality of the study.

No attempt was made to develop numerical rankings or to describe studies in any overall order of priority. However, each study was reviewed in terms of the criteria and then given a general ranking as to importance (high or medium) and immediacy (immediate or delayed). Studies were ranked delayed if they depended upon other work being done first, or if there was a lack of urgency in obtaining the results. Naturally, any such ranking is not hard and fast but it indicates the significance attributed to the different studies.

The rationale for the studies is provided in the various issue commentaries rather than in the study descriptions themselves. Readers having queries as to the purpose or context of individual studies are urged to refer back to the relevant headings in the discussion of the issues.

TABLE 1. Study ranking based on importance and immediacy

	HIGH	MEDIUM
IMMEDIATE	1. Community information review 2. Industry information packages 4. The review process 8. Business participation 9. Impediments to business participation 12. Labour monitoring system 14. Labour relations regime 19. Offshore job satisfaction 22. Family life 24. Demographic monitoring 25. In-migration monitoring 30. Shore zone resource inventory 31. Contingency plans 35. Compensation coverage	3. Information resource centre 5. Baseline economic information 6. Effects of major projects 17. Locational choices 28. Alcohol and drug abuse 29. Shore zone baseline data
DELAYED	10. Business development 15. Community impact handbook 16. Facilities handbook 36. Labrador Inuit - Shore zone usage	7. Offshore opportunities 11. Management development 13. Certification handbook 18. Public sector training 20. Ethnography of offshore workplace 21. Comparative work environment 23. Community profiles 26. Construction work camps 27. Incomer orientation program 32. Oil vessel conflicts with the fisheries 33. Tainting of fish 34. Potential aquaculture areas 37. Hydrocarbon facilties siting 38. Mediation evaluation

STUDIES IN INFORMATION, THE REVIEW PROCESS, AND PUBLIC PARTICIPATION

Study 1. Community Information and Consultation Programs

The study would compare and evaluate oil companies' community information and consultation programs for the purpose of establishing criteria as to what constitutes a successful information and consultation program.

Commentary. The study should evaluate a cross-section of information and consultation programs in a variety of locations. Both the exploration and development phases should be covered, as should both urban- and rural-oriented programs. Possible cross-comparison with targetted industrial programs in western Canada may be of value. The documentation of materials would be essential.

In-depth interviews should be conducted with each company involved, local people and organizations, municipal officials, and provincial and federal governments. Possibly the evaluation should be conducted confidentially so as to ensure frank discussion, although this may cause difficulties in assessing the results.

The study should try to assess what are realistic goals for such programs; which approaches seem to have met with the most success in a given environment and why;and whether any standarized method of evaluation is feasible.

Ranking. Because of the level of concern, utility, and attributability to oil and gas, this study ranks as high:immediate.

Study 2. Industry Information Packages

This study would prepare basic information packages about the petroleum industry for use by a wide variety of publics to increase awareness as to the general nature of offshore oil and gas and the exploration and development process prior to project-specific reviews.

Commentary. Information packages would be prepared containing modules on such subjects as offshore geology and the nature of the resource; the exploration process; a short dictionary of industry terminology; the international picture on offshore oil and gas exploration; marketing; and blow-outs.

The initial packages would presumably be in print, because of ease of distribution, although slide and video elements could be added later. Professional and attractive graphics and a direct, easily understandable text would be essential. Each module should be short, and designed so that combinations or additions are possible.

Ranking. Due to the high level of interest and concern, the immediacy and the utility, this study is ranked high:immediate.

Study 3. Information Resource Centre

This study would assess the feasibility of an information resource centre which could provide information about, and access to, the variety of studies and other information resources already existing in the Atlantic region.

Commentary. The study should survey existing bibliographies in the region, including existing industry, university, and governmental libraries. The petroleum industry should be consulted as to which of their informational packages (slides, videos, speakers) might be available by request and to which publics they would be most inclined to respond (for example, community groups in an area affected by company activity, vocational schools, or special interest groups). A list of contact people in industry and government should be compiled, and information co-ordination organizations, such as the Program for Atlantic Co-operative Onshore-Offshore Development (PACOD), should be consulted. Any major gaps in existing material could be identified, so that new material could be produced to fill them.

Once the scope of the available material is ascertained, the issue of location should be addressed. For such material to be useful, it should be updated effectively which requires a consistent and involved 'centre'. Possible locations for such a centre include existing federal government libraries, a consortium of university or provincial government libraries, or an industry association such as the Canadian Petroleum Association.

The issue of dissemination should also be addressed. In consultation with government and community librarians and oil company representatives, the study should decide on the most appropriate and feasible method of storing, indexing, and dispensing information. Form sheets describing studies or resources in a standardized way should be investigated to

provide such information as subject of study, author, sponsoring agency, date, and cost. Existing lending facilities should be used to the greatest degree possible, and the role of the offshore information facility should be limited to informing people as to what information is available and from whom they should request it.

The possibilities of maintaining a record of research under way should also be investigated. Although the studies themselves may involve a greater or lesser degree of confidentiality, the fact that such a study is being undertaken at all could be useful information to others in the field.

Ranking. Because few informants specifically identified this as an issue, and due to concerns about the utility of the result, this study is ranked medium:immediate.

Study 4. The Review Process

This study would have two parts. First, it would place the formal public review process in the context of the larger set of opportunities for review. Secondly, it would review the Venture SERP with a view to assessing the interaction between intitial expectations and actual process, so as to provide background information on public information needs with reference to future reviews. The purpose of this study is to assist the public in understanding the timing and nature of the overall review process, and to assess the Venture SERP as to expectations, purpose, and results.

Commentary. The first part of the study should survey as concisely and clearly as possible the existing review, approval, and monitoring process. In so doing, it should include existing inter- and intra- governmental co-ordinating structures. It should also briefly describe other co-operative or co-ordination programs which, although not formally part of the review and approval process, generally occur in response to it (e.g., community information programs, and negotations with the fishing industry). It should enable people to put the formal public review process in the context of the overall formal and informal review process. This component should be drafted in such a way that it would be suitable for a community information handbook.

The second part of the study should review the Venture SERP and assess from background documents, transcripts, submissions, panel reports, and interviews with key participants (panel members and representatives of the

public, government, and industry), what the results of the process are perceived to be. To do so, it will also be necessary to assess how the various participants viewed the purpose of the SERP.

Ranking. Due to the level of interest and concern, applicability, and attributability to oil and gas, this study is ranked high:immediate.

ECONOMIC STUDIES

Study 5. Baseline Economic Information

This study would assemble time-series data on the economy of the Atlantic region and attempt to draw conclusions as to the major forces for development and change. The study would provide a base from which to assess the effects of offshore development. It would provide both a data base, including major economic indicators over time, and an interpretation of the dynamics of the regional economies.

Commentary. This study would draw largely on existing sources. Its main contribution would be to provide data which are consistent across the region and over time. The data would be assembled at a sub-provincial level, wherever possible, and would include income, employment, unemployment, participation rates, urbanization, household and family size, occupational and employment structures, and trade patterns.

Ranking. This study rates high on all criteria except direct attributability to offshore development. For this reason it is ranked only medium:immediate.

Study 6. Effects of Major Projects in the Atlantic Region

This study would undertake a comparative assessment of the effects of various major projects that have been carried out in the Atlantic region to provide a comparative perspective for assessing effects from offshore development. It would identify the types and magnitudes of effects arising from different types and sizes of projects.

Commentary. Examples of projects to be reviewed could include Point Lepreau, Come-by-Chance, the Michelin plants, and the accumulated projects at the Strait of Canso. The main inclusion criteria for projects would be major construction and employment injections that were of disproportionate size relative to the receiving communities. Also, such projects would need to have undergone some degree

of review already, so as to ensure that the basic information was reasonably available. The issues to be assessed would include population, employment, income, subsidiary economic activity, land use, infrastructure, and social services. It is recognized that there will be gaps in the data which, in some cases, could be supplemented by interviews with knowledgeable informants.

Ranking. This study rates fairly highly on most criteria. Although its attributability to offshore oil and gas may be questioned, it would provide comparative data essential to further studies and information programs. It is ranked as medium:immediate.

Study 7. Offshore Opportunity Study

This study would build on the supply gap work already done, so as to more precisely identify commodities and services that present particularly attractive development possibilities for Canadian suppliers. The purpose would be to flag areas where concerted government action would be warranted to encourage Canadian participation.

Commentary. The design of this study would require a close familiarity with offshore requirements and Canadian supply capabilities. It would essentially involve an extension of existing and in-progress studies.

Ranking. Other than co-ordinating the information in the studies already done or underway, and identifying specific gaps in these studies that require further elucidation, the questions surrounding both the feasibility and utility of this study cause it to be ranked medium:delayed.

Study 8. Business Participation and Program Data

This study would assemble base data concerning participation by Atlantic region businesses in offshore development, and concerning government programs designed to encourage such participation. It would provide information essential to any evaluation of progress made to date in participation by local firms or of the utility of government assistance programs.

Commentary. Much of the information required for this study probably exists, although undoubtedly in highly variable format and with important gaps. Therefore, the first stage of the study should establish the limits, possibilities, and likely level of effort.

Ranking. This study ranks high on all criteria and, in particular, is a prerequisite to further work. Therefore, it ranks as high:immediate.

Study 9. Impediments to Business Participation

This study would undertake a survey of selected firms, to identify factors affecting the probability of, and major reasons for, successful participation in offshore development. It would assist in the design of future policy to enhance local participation in offshore activity.

Commentary. One proposal for structuring the study is to begin with listings of firms identified by governments as being ostensibly capable, and then to select from them a sample including those who chose to try to participate, those who did not, those who were successful, and those who were not.

A number of confidentiality and sensitivity problems could arise with this study and its design should be carefully considered in this light. Conceivably, only aggregated information and conclusions would be included in a report. This is a subject about which everyone seems to have an opinion and, although no definitive answers are possible, a better understanding of the dynamics is clearly needed.

Ranking. Any further work on inducements to participation requires this study as input. Therefore, it ranks as high: immediate.

Study 10. Assessment of Business Development

This study would undertake a survey of firms participating in offshore work and would assess the extent to which they are developing new products, processes, technologies, management approaches, and markets, and the possible factors influencing that development. The study is intended to develop more complete information in support of future policy to enhance business development with respect to offshore opportunities.

Commentary. It is important to distinguish this study from the previous one, Study 9 which is concerned with participation in any sense. This study is concerned with the narrower question of the factors, including government programs, that induce lasting, positive change in participating businesses. As with Study 9, confidentiality would be a concern.

Ranking. Logically, this study would select a part of the sample from Study 9 for in-depth work and, because of its dependence on the results from that study, ranks as high:delayed.

Study 11. Management Development

This study would seek to identify the key management problems affecting participation in offshore development, and to design approaches to training that would most effectively come to grips with the problems.

Commentary. Management training approaches have been used with limited success to improve local business practices in general. This study proceeds from two notions. First, the offshore poses peculiar demands with respect to both skills and 'styles', and peculiar opportunities for those with improved management practice. Secondly, innovative, practical approaches to training are probably needed.

Ranking. This study follows logically in sequence from the participation and development studies. Although petroleum activities increase the importance of such a study, the need for it can be attributed to offshore oil and gas in only a very limited manner. Therefore, the study is ranked as medium:delayed.

Study 12. Labour Monitoring System

This study would determine which elements should be included in a system for monitoring the characteristics of the offshore labour force, and would design a collection and dissemination system to facilitate access to data with which developments in the offshore labour force could be tracked.

Commentary. Information is now being assembled regularly on selected characteristics of the labour force in activities directly relating to offshore activities. This study would design a consistent data base for the whole Atlantic region, and would capture more in-depth information about the labour force. It should also determine the limits of cost-effectiveness for such a system, and identification of the appropriate implementing agency or agencies would be desirable.

Ranking. This study has relevance for a whole range of concerns about local content, affirmative action, migration, and competition from other sectors. Therefore, it ranks as high:immediate.

Study 13. Certification Requirements Handbook

This study would develop a handbook on certification requirements for selected offshore and onshore jobs to increase public awareness of the level of skills or training required.

Commentary. The handbook should be written in a style suitable for general distribution.

Ranking. This study is essentially informational and, because of its narrow range of applicability, ranks medium: delayed.

Study 14. Labour Relations Regime

This study would assess the offshore industrial relations framework in places such as Norway, Scotland, and the Gulf of Mexico, with a view to identifying particular opportunities or problem areas that might arise in the Canadian offshore. The result of this study should be to anticipate emerging issues in labour relations, so as to facilitate their early resolution.

Commentary. The combination of a unique work environment and overlapping international, national, and provincial jurisdictions creates a particularly confused industrial relations situation in the Canadian offshore. As well as a thorough review of the literature, this study should involve consultation with national and local unions, as well as with government and industry. It should attempt to delineate offshore labour relations issues that have arisen elsewhere, describe the various resolutions in the differing jurisdictions, and analyse how the unique Canadian constitutional system might affect solutions arrived at elsewhere.

Ranking. Because of its relevance and immediacy, this study is ranked as high:immediate.

Study 15. Community Impact Handbook

This study would involve the preparation of a community impact handbook describing the effects of different types and levels of impact, key indicators and how to monitor and assess them, and the planning and regulatory tools available. The intent would be to provide small communities, in particular, with a readily accessible reference for use in anticipating and coping with the effects of offshore project.

Commentary. This study would produce a planning 'cookbook', but one particularly oriented to the effect of large offshore- oriented projects on the Atlantic coastal communities.

Ranking. Because the level of activity in Atlantic Canada is still relatively modest, there is litle urgency. Therefore, although it rates fairly high on most other criteria, this study is seen as a high:delayed.

Study 16. Facilities Handbook

This study would involve preparation of a visually attractive, easily read handbook describing offshore facilities, their requirements, and what implications their location might have for different sizes of communities.

Commentary. This study would assemble readily available information concerning various offshore facilities, including pipeyards, pipe-coating yards, supply bases, platform yards, and module-fabricating yards. It would describe each and to which aspect of operations it relates, how many could be anticipated for various levels of operations, the spatial, land, infrastructure, and related service requirements of each, and typical direct employment and investment levels. Most importantly, the information would be assembled in a graphic, readable format with the purpose of wide dissemination to schools, libraries, municipal offices, and the like.

Ranking. Although the study would be extremely useful, it seems probable that such information is becoming gradually available. Therefore, the study is ranked high:delayed.

Study 17. Locational Choices

This study would assess the reasons for the locational choices of offshore service and supply firms and propose measures that might encourage a more equitable distribution of activity.

The purpose of this study would be to describe factors determining locational choice with a view to identifying measures that might be reasonably undertaken by governments to influence such choices.

Commentary. This study should not presume that there is necessarily scope for government action, because mitigative measures may have costs out of proportion to the benefits. However, the level of concern in non-central areas warrants a serious examination of all possibilities.

Ranking This study is ranked medium:immediate, but the degree of concern in some communities suggests that it should perhaps be undertaken as a high-priority study.

Study 18. Public Sector Training

This study would design training packages to assist public sector professionals and community leaders to become more familiar with offshore development and its consequences. Unlike Study 2, the focus would not be simply on information.

Commentary. Short courses of this sort have been available in the region in the past, but only a fraction of the potential audience has been reached. The study would design various syllabuses, including such supportive materials as case studies, simulation exercises, and reading lists. An understanding of the offshore needs to begin with the most basic elements, and proceed in steps (modules) which could be assembled as the particular needs dictate. Social workers, for example, would get a specialized module on social issues. Properly designed, each module could be comparatively independent of instructors and would, therefore, be highly mobile.

Ranking. Assuming that offshore activity expands in the next few years, this study will become highly relevant. In the meantime, it is ranked as medium:delayed.

SOCIAL STUDIES

Study 19. Survey of Offshore Job Satisfaction

This study would survey the offshore labour force to determine those characteristicts of the work environment that enhance job satisfaction and safety. Its purpose would be to measure job satisfaction in its broadest sense (including such factors as measure of work-related stress, perceptions of safety, inter-personal relations, and direct and indirect benefits) with the objective of isolating those key elements that could be enhanced, prevented, or mitigated, thereby improving worker health, safety, and productivity.

Commentary. It would be necessary to survey workers on different rigs and at different levels in the employment hierarchy. It would also be necessary to sample two 'extreme' groups: those who had quit offshore work, and those who had continued and were now working in the international petroleum labour force.

A general survey of the offshore workforce would need to be supplemented by in-depth interviews with a smaller sample of the population. A potential constraint to this study is the degree to which the many offshore operators and

contractors would be willing to co-operate. Past experience, from Newfoundland in particular, suggests that this need not be a problem. This study might also be run in conjunction with Study 20.

Ranking. Based on the degree of concern and potential utility of results, this study is ranked as high:immediate.

Study 20. An Ethnography of the Offshore Workplace

This study would be an in-depth study of the offshore workplace and society to determine the nature of, and relationships between, its elements. This study should isolate those key elements that could be enhanced, prevented, or mitigated, thereby improving worker health, safety, and productivity.

Commentary This is an alternative approach to Study 19, but one in which a much more detailed study of the offshore society is compiled from an anthropological perspective. Use of a participant/observer working offshore while compiling data might be one approach that could be used, although this poses significant problems from a manageability standpoint. Alternative methods of implementing such an approach would need to be considered.

Ranking. Although a high degree of concern was expressed and the results would be useful, potential manageability might be low. This study is ranked as medium:delayed.

Study 21. Comparative Work Environment Study

This study would compare stress levels and their outcomes between offshore activity and other work environments to determine the relative importance of work-related stress, thereby placing the offshore industry in a broader context.

Commentary. This study could be linked to Studies 19, 20, or 22. Comparable work environments would have to be carefully chosen. At first glance, the trawler fishery and isolated construction camp environments might represent the closest parallels. The methodology suggested in Studies 19, 20, and 22 should be closely parallelled in any comparative study.

Ranking. Despite the level of concern expressed, the utility of the study may be low. This study is ranked as medium:delayed.

Study 22. Family Life Study

This study would determine the nature of the effects of the offshore work regime on family life by documenting the views of families with spouses working offshore on the disadvantages and advantages of the work regime.

Commentary. This study is closely associated with the issue of the offshore work environment and could well be coordinated with Study 19.

Ranking. Due to the high degree of concern expressed and its use as a prerequisite for other studies, this study is ranked as high:immediate.

Study 23. Community Profiles Study

This study would identify, and would compile socio-economic profiles of, a number of communities in the region with a high probability of being affected significantly by oil and gas developments. The purpose of this study would be to provide baseline data about the current physical and social infrastructure of the communities in question, together with indicators about place and lifestyle satisfaction and about perceptions and preferences for the future. The objective of compiling these profiles is to attempt to isolate the effects of change induced by oil and gas by comparing these pre-petroleum baseline studies with subsequent, post-impact studies.

Commentary. There have been relatively few opportunities to undertake detailed pre- and post-impact studies, but those that have been done suggest that this may be the only meaningful way to document social change and peoples' views about it.

Notwithstanding the problems of isolating causes and effects, this approach, although time-consuming, is both manageable and potentially useful. However, it should be recognized that preventive and mitigative measures may be identified too late to help the communities under study, and that the applicability of any results to other environments and contexts may be limited.

Ranking. Although the level of concern is high and the study would be useful for other studies, it may be viewed as too project-specific and therefore outside the terms of reference of ESRF unless established as a pilot effort for testing the best social monitors. This study is therefore ranked as medium:delayed.

Study 24. Demographic Monitoring and Projection

This study would establish the methodology for an ongoing (annual) monitoring and projection system in which current and projected industry activity levels are, through labour estimates, translated into population and household projections. The outputs of such a study would be essential for planning a wide range of infrastructure and services, including roads, housing, and social services.

Commentary. This study envisions a monitoring and projection system similar to that used by the Grampian Regional Council in Scotland, but modified to reflect the inputs available (e.g., data availability) and outputs required (e.g., program requirements) in Atlantic Canada. The study would include the development of the monitoring and projection model and its initial use. The value of this study could be heightened should an agency or agencies within Atlantic Canada agree to adopt and operate the system on a continuing basis.

Ranking. Based on its immediacy, utility, and prerequisite value, this study is ranked as high:immediate.

Study 25. In-migration Monitoring

This study would design and allow to be put in place a monitoring system which would report on an ongoing basis the number of in-migrants and their demographic, employment, and other characteristics. It would distinguish the level of return-migration, as well as more purely speculative in-migration.

Commentary. No single in-migration data source is available or appropriate, hence the study would have to design and test such a monitoring system based on a variety of data sources; e.g., applications for medical insurance and social assistance caseloads. The results of such an exercise may indicate the need for mitigative measures, e.g., the discouragement of migration to areas where insufficient employment opportunities exist, or where housing and social services are already under severe pressure.

How demographic changes can be influenced may represent a further component of this study. As with the projection study, monitoring of demographic change would need to be carried out on an ongoing basis.

Ranking. Due to its immediacy and prerequisite value, this study is ranked as high:immediate.

Study 26. Construction-site Work Camps

This study deals with the alternative approaches to the accommodation of construction workers associated with major onshore oil and gas activity. It should assess such factors as how far it is possible or desirable to isolate workcamps from local communities; how permanent and large the workcamps should be; what types of facilities should be available; and the possibilities for their use after construction has ceased.

Commentary. This study would review the alternatives adopted for similar construction projects elsewhere (whether petroleum-related or not) to identify essential design features so as to maximize worker satisfaction at the job site and minimize adverse effects on the surrounding area.

Ranking. Although this study would have general applicability and utility, its attributability to offshore activity is in doubt and it is not an immediate concern. Therefore, this study is ranked as medium:delayed.

Study 27. Incomer Orientation Program

This study would develop a regionally specific orientation program for incoming managerial and supervisory staff to increase managerial effectiveness, and to reduce friction between industry and community by providing information about the environment within which incoming managers, supervisors, and other decision makers are to work.

Commentary. This study could be developed as a pilot program in one region to develop, implement and evaluate the utility of such a program. Orientation for managers should lead to a greater sensitivity about local conditions, thereby improving managerial effectiveness. An extension of the programme to spouses may also promote better integration into local society. Although orientation programs might take several forms, emphasis should be placed on an interactive program that could include seminars and discussions, rather than a reliance on the publication and distribution of an information package.

Ranking. Due to questions about its effectiveness, this study is ranked medium:delayed.

Study 28. Alcohol and Drug Abuse

This study would review the current and past information about alcohol and drug abuse in the offshore petroleum industry and selected other industries, both in Atlantic Canada and elsewhere, with three objectives: to establish the actual magnitude of the problem; to relate this to levels experienced in other industries; and where appropriate, to suggest preventive and mitigative measures.

Commentary. Although there is considerable concern about this issue, there is little substantive empirical data about the incidence of alcohol and drug abuse in the offshore petroleum industry, and whether it is more or less severe than in other industries. Inter-industry differences may be suggestive of the causes of abuse and appropriate preventive and mitigative measures. The study of abuse in the petroleum industry itself is clearly the priority here, and the comparative component could be deferred somewhat.

Ranking. Although there is some doubt as to the utility of the results, the level and immediacy of concern warrants attention. This study is ranked as medium:immediate.

STUDIES IN SHORE ZONE USE

Study 29. Improving the Accessibility and Use of Baseline Data

This study would assist in the development of an interface among data bases relating to the shore zone, to increase the efficiency and timeliness of data available for shore zone resource management.

Commentary. Interfaces between computerized data bases containing environmental, resource, and resource-use information on the shore zone, including the offshore, would be developed as an essential prerequisite to sensitivity analysis. Data bases to be interfaced would be identified jointly by governmental resource managers and petroleum industry environmental advisors. In addition, methods of data analysis and selected methods of hard copy and electronic display, in a form most suitable for potential users, should be recommended.

This study could take the form of formal liaison between the Marine Resource Information System (MARIS) proposal, the petroleum industry and COGLA, with financial support from ESRF. The work is ongoing in several agencies, but ESRF participation could accelerate the process.

Ranking. This study rates high on most criteria, but low in attributability to oil and gas. The study is therefore ranked medium:immediate.

Study 30. Shore Zone Resource Inventory

This study would design a prototype resource inventory and apply it to two pilot areas, to provide an easily understood, accurate portrayal of the shore zone, including the marine environment, suitable for use in either facilities siting or contingency planning.

Commentary. The study would cover the Atlantic coast of Nova Scotia affected by the Sable Island exploration area and the Avalon Peninsula, Newfoundland, as the two highest priority areas. It would provide interpreted baseline data at both regional and detailed scales. Information should be portrayed in such a manner as to be useful in an oil spill emergency or in facilities-siting planning.Subject matter would include environmental conditions, natural resources, and uses made of the shore zone. Potential for tourism or other commercial uses would also be considered.

It is intended that this would be only the first phase of a shore zone resource inventory that would ultimately cover the shore zone of all those parts of Atlantic Canada potentially affected by hydrocarbon development. An evaluation of the usefulness of this study would be undertaken before subsequent phases.

Ranking. This study rates high on all criteria, particularly immediacy, utility of results, and significance for other studies. Although the need for the study is only partially attributable to oil and gas activities, this is offset by the usefulness of the information to industry. The study is ranked high:immediate.

Study 31. Contingency Plans: Evaluation and Improvements

This study would evaluate the usefulness of the present style of contingency plans; examine the possibilities for area specific contingency plans and access to real time data; examine critically the efficacy of protective measures proposed for specific environments.

Commentary. The recent Uniacke blow-out provides an ideal opportunity for evaluation of contingency plans. This study must be carried out in close consultation with the oil companies' environmental specialists, as well as regulatory officials.

Ranking. This study rates very high on all criteria, particularly immediacy, level of concern, and attributability to oil and gas. The study is ranked high:immediate.

Study 32. Oil Vessel Conflicts with the Fisheries

This study would examine the potential for navigational conflicts between the fisheries and petroleum-related vessels, by evaluating present and potential conflicts between oil and gas vessel traffic and the fisheries on the Scotian Shelf.

Commentary. The study is divided into four stages. The first stage is the development of several different scenarios for Scotian Shelf oil and gas developments, and related projections of the size, speed, and volume of vessel traffic for each. The second stage is a detailed study of fishing operations on the Scotian Shelf by season, including the location, size of vessel, and type of operation of fishing vessels. The third stage is a risk analysis of navigational hazards between fishery vessels, oil vessels, and other coastal traffic. The final stage is an overall evaluation of present and potential conflicts between vessels of the two industries, and an assessment of the need for mitigative measures such as information programs, vessel traffic lanes, or some form of vessel traffic management system.

The final description of this study should not be attempted until the results of the ESRF study on fisheries/petroleum industry interaction have been assessed.

Ranking. This study rates fairly high in terms of a number of criteria, but low in terms of immediacy. The study is ranked medium:delayed.

Study 33. Hydrocarbon Tainting of Fish and Shellfish

This study would examine the threat of tainting in order to thoroughly document the threat of tainting, under what conditions it is likely to occur, and to identify possible regulatory responses. The study should also examine the market implications of <u>perceived</u> tainting threats.

Commentary. The study should consist of a published and "grey" literature search to identify current knowledge of tainting; secondly, a series of taste tests for various sub-lethal concentrations of different hydrocarbons on high-priority species to establish tainting standards; and thirdly, if tainting is identified as a real threat, research into inclusion in compensation schemes.

If tainting is not identified as a real threat, the study should look at ways to mitigate public concerns which may have commercial consequences for the fisheries.

Ranking. This study rates high in terms of level of interest, but medium for most criteria. However, because it appears that the issue is under consideration by other agencies, the study is ranked medium:delayed.

Study 34. Identification of Potential Areas for Aquaculture

This study would identify and map areas potentially important for aquaculture in areas affected by exploration for hydrocarbons.

Commentary. The first phase would be the identification of important areas for aquaculture along the Nova Scotia coastline affected by Sable Island exploration. Existing knowledge, much of which is not based on sound, scientific studies, should be systematically evaluated. The result should be a preliminary map of aquaculture potential (rather crude from a biological point of view) for the following species: mussels; salmon; trout; European oysters; scallops; and Irish moss.

As a second phase, similar information should be compiled on the same species for the entire Atlantic (southern) coasts of Nova Scotia, New Brunswick, and Newfoundland. The third phase should identify similar information on the following species for the southern Gulf of St. Lawrence coast: mussels; native oysters; and lobsters.

Ranking. This study rates medium for most criteria, high for utility of results, and low for immediacy and attributability to oil and gas. The study is ranked medium:delayed.

Study 35. Compensation: Scope and Accessibility of Coverage

This is a two-stage study which would not only inform fishermen and others of present compensation mechanisms but also make a full examination of compensation access and coverage.

Commentary. Four phases of work could be undertaken separately. In the first phase, information would be provided in an easily understandable format on procedures under each of the following three compensation approaches: through the courts, based on the Fisheries Act; through the courts, using the MPCF; and through the proposed CPA/OOD scheme.

In the second phase an identical process would be devised for use by all companies covering attributable damage of all types. This process must be devised in conjunction with all of the offshore operators and pipeline companies and their contractors.

In the third phase any impediments would be identified to extending the CPA/OOD non-attributable, non-petroleum pollution scheme to include pipeline construction and operating companies and all other contractors working offshore.

In the fourth phase comprehensive study of compensation related to all aspects of the offshore should include: first, a study of the MPCF to determine if and how changes could be made to improve it; and secondly, the possibility of extending compensation schemes to cover such topics as loss of access to fishing grounds; market losses due to tainting of fish or shellfish; special problems related to aquaculture of fish and shellfish; loss of income to tourist and recreation operators as a result of offshore-related accidents.

Ranking. This study rates very high for level of interest, applicability to oil and gas, applicability, and utility of results. However, some segments are already under discussion between the two industries and government, and the final terms of reference should take this into account. The study is ranked high:immediate.

Study 36. Effects on Shore Zone Usage by the Labrador Inuit

This study would evaluate effects of future hydrocarbon developments, including Arctic tanker traffic along the Labrador coast, on the commercial and traditional uses of marine resources by the Labrador Inuit, and on their traditional lifestyle.

Commentary. A comprehensive study of potential effects on the Labrador Inuit would require detailed examination of a number of discrete elements, including an analysis of winds, currents, and oil-spill trajectories, and a risk analysis and a review of oil- spill clean-up technology applicable to the Labrador coast. A separate review and evaluation would be required of the probable effect of tanker noise on marine mammals. Another element would be an identification of sensitive shore zone areas and special habitats throughout the landfast ice zone for birds, fish, and mammals, along with documentation of commercial and traditional uses of these resources by the Inuit. Finally, an assessment would be required of the potential effect of the petroleum industry on the marine resources, and resultant effects on the country food diet and traditional lifestyle of the Labrador Inuit.

Ranking. This is a difficult study to rate. The concerns expressed generally warrant a high priority, but the immediacy depends upon future exploration decisions. The study is ranked high:delayed.

Study 37. Hydrocarbon Facilities Siting Process

This study would examine the possibilities for adoption and use of a hydrocarbon facilities-siting process in Atlantic Canada.

Commentary. The study is divided into three stages. The first stage involves consultation with siting experts, a determination of the state of the art in facilities-siting and routing analysis and the use of siting criteria, and an evaluation of cases where siting processes have been used within a Canadian context. The second stage is an assessment of the potential utility of a siting process to industry and to the public in the Atlantic provinces, as well as any constraints imposed by federal-provincial jurisdictional considerations. The third stage examines where siting outputs could be used within existing planning and regulatory frameworks.

Ranking. This study rates medium in terms of most criteria, and low for level of interest expressed. However, the potential utility of results may be high, depending upon acceptance of the process. The study is ranked medium:delayed.

Study 38. Mediation Evaluation

This study would evaluate potential benefits from the use of mediation techniques for issues and disputes resulting from offshore development.

Commentary. The study would begin by evaluating and classifying the types of situations in which conflicts arise between the petroleum industry and other parties involved in shore zone use. It would then examine and evaluate alternative methods, including mediation, for resolving disputes in each type of situation. A key output would be the identification of situations where existing systems do not resolve disputes promptly or efficiently, and where mediation might be useful.

Mediation may have the potential to result in considerable savings in time and money for the petroleum industry by resolving contentious issues expeditiously. However, the output from other information and participation studies will at least partially relieve the problem, so that the need for it should be re-evaluated at some future data.

Ranking. The study is ranked medium:delayed.

APPENDIX 1

Request for Proposal from the ESRF UPDATE, Vol. I(1), 16 September 1983:

EAST COAST SOCIAL ISSUES SCOPING STUDY

Objective

A study is required to identify pertinent social and economic concerns associated with offshore oil and gas exploration and production activities. This scoping study will provide the starting point for future studies concerning east coast social issues.

Statement of Work

The scoping study must involve extensive consultation with all publics to ensure that all real and perceived issues and concerns are identified and considered for future study. Consultation may include individuals, families, community groups (such as town councils, boards of trade, school boards, church groups, etc.) disadvantaged groups (such as senior citizens) and the business sector.

A matrix approach might be the most appropriate means by which to focus in on the key issues and the levels at which they should be investigated.

The scoping study should address primarily these issues: (1) sociological effects of offshore exploration and development; (2) economic participation by the public in petroleum-related activities; and (3) recreational, commercial, subsistence and historical use of the shore zone. Under (1), projects should be identified which will address issues such as quality of life, [social pathology, social indicators, etc. Under (2), projects should be identified which address issues such as supplier development; research and development related to industrial benefits; technology transfer; employment and training; public support for the above; and the information flow among the oil industry, present and potential suppliers, and government.

The information needs of the various publics must be identified and assessed and recommendations made as to appropriate and practical information programs by government and industry.

At this time, the scoping study should focus on the ESRF eastcoast regions. Proposed projects may have regional to national application.

Output

The final report, while containing all the background information, should highlight the relative importance of the proposed projects with respect to the time, scale and location oF offshore activity.

APPENDIX 2

Introductory letter sent to prospective informants:

&date&, 1984

&name&
&title/o&
&business/o&
&address/o&
&city/o&
&zip&

Dear &name&:

Further to our recent phone conversation, I am writing to introduce you to the East Coast Social Issues Scoping Study, which is being funded through the Environmental Studies Revolving Fund (ESRF). You will find enclosed a short brochure describing the Fund.

Briefly, the study was required "to identify pertinent social and economic concerns associated with offshore oil and gas exploration and production activities. This scoping study will provide the starting point for future studies concerning east coast social issues." The range of issues was generally broken down into (1) social effects of offshore activity; (2) economic participation in petroleum-related activities, and the major economic impacts of such activities; and (3) recreational, commercial, subsistence and historical use of the shore zone.

The study is being conducted by a group of consultants led by Cleland, Dunsmuir Consulting of Halifax, and including Community Resources Cooperative of St. John's, Hal Mills of Halifax, and Michael Simmons from the MRMS Halifax office.

The final report will identify specific issues which require further study, and propose appropriate research and information programmes to deal with them. This is a scoping study to be completed in twelve weeks and so it makes no attempt to actually resolve any of the issues, but seeks rather to identify future study needs and establish some priorities.

The initial tasks are to identify real and perceived issues and to assess their importance. As the opinions of key informants like yourself will be most important to the outcome of the study, we are pleased that you are able to find the time to share your opinions and comments with members of our study team.

I would also like to confirm our meeting at your office on &time&. Should that become inconvenient for any reason, perhaps you could call me at the number above and suggest an alternative time.

Enclosed with this letter you will find a brief listing of some of the main categories of issues that have been already identified. This is a very preliminary listing, and is included only to assist you in focussing on the areas which you would most like to discuss. We would like you to identify issues of concern as specifically as possible, many of which may cross the boundaries between the various categories previously identified. While your primary experience may lie in one particular area, you should feel free to address any area which concerns you. On the other hand, please do not feel that you have to cover all categories.

Thank you for your cooperation, and I look forward to meeting with you.

Yours truly,

Mollie Dunsmuir

MD/os