LOCAL KNOWLEDGE AND THE ENVIRONMENTAL REVIEW PROCESS:
Lessons from the Alberta-Pacific EIA Review Hearings

by

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We accept this thesis as conforming
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ABSTRACT

Initiatives for public involvement in environmental impact assessments for large resource-use projects are now commonplace. Since the mid-seventies, governments have had strategies in place to encourage the public to be directly involved in resource management decisions. Various techniques are used to solicit public input; often public hearings are held to review the potential impacts of large projects. However, the purpose of involving the public in such a manner is not clear. Much information is contributed by the public during a public hearing, yet what is done with this information is largely an unknown. Therefore, the purpose of the work done for this thesis, was to contribute to the understanding of the role of local knowledge in the EIA process.

The case selected for this study was the Alberta-Pacific (AlPac) EIA Review hearings, which were held to review the proposal for a bleached kraft pulp mill in northern Alberta. The written briefs of presentations made at the AlPac public hearings were examined in order to determine what kinds of local knowledge were contributed by local area farmers during the hearing process. Reports that were issued following the hearings were analyzed to assess whether any of the knowledge provided by the local farmers was reflected in these documents. Interviews were held with the proponent and members of the Review Board and Scientific Review Panel to gain a sense of the value of local knowledge to these individuals and to attempt to determine whether it played a significant role in the environmental review process for this development.

A quantitative analysis of the material presented at the AlPac hearings showed that government and proponent submissions were substantial in both quantity and volume. Local farmers' presentations, while comparatively few, contributed a unique body of knowledge that was seen as valuable in the assessment of potential impacts of the proposed pulp mill. The local knowledge of the farmers was experiential, technical, and personal. In many instances, farmers provided information that challenged
From the interviews, it became evident that the definition of 'local', and thus 'local knowledge', is vague. It clearly meant different things to different people, and depended on what issue was being discussed. The loose use of the word 'local' is a significant concern because it can lead to an undervaluing of those issues which are truly 'local'. Those who participated in the interviews stated that they valued local knowledge, but most expressed the need to verify local knowledge with more conventional, scientific knowledge. The personal impact of local knowledge on the different participants was highly variable. Some thought it was very important, others less so. Local knowledge was reflected in the Board's report and seemed to play a significant role in the assessment of potential impacts of the proposed mill. However, the circumstances surrounding this case, and the sequence of events following the public hearings suggest that local knowledge did not impact the final decision to approve the pulp mill.

These findings have significant implications for planners and others who are involved in designing public involvement programs. If the role of local knowledge in the EIA process is to be validated and enhanced, the makeup of Review Boards needs to include individuals who are inclined to consider local knowledge as an important component of an EIA.

This study indicates the importance of considering local knowledge in the design of environmental decision-making processes. Further studies are needed to better understand the concept of local knowledge, and how to classify it and integrate it into the EIA process.
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who continually inspire me
CHAPTER 1
INTRODUCTION

During the late 1960's, growing public interest in environmental issues led to increased public participation in the environmental decision-making process (Rowson 1993). As a result, since the mid-seventies, governments have had to develop strategies to enable the public to be directly involved in resource management decisions (Parenteau 1988). Development projects subject to federal or provincial environmental impact assessments (EIA) have undergone public scrutiny through various fora, and often, public hearings are held to review the potential impacts of large projects. However, public hearings are costly, both financially and in terms of human energy. As Dorcey and Rick (1987) have stated, public hearings, whether judicial or quasi-judicial, are adversarial in nature, and can leave communities divided along pro-environment and pro-employment lines. Still, public participation initiatives, including public hearings, are now considered a necessary component of EIA's of major resource use projects. However, the purpose of involving the public is not clear. Much information is contributed by the public during a public hearing, yet what is done with this information is largely an unknown. A gap in the literature exists with regards to the role of local knowledge in such review processes. The kind of knowledge that is contributed by the public and the usefulness and value of that knowledge to those in a decision-making capacity, and their advisors, are largely still not documented.

The knowledge of the local people, or 'local knowledge', as I will be referring to it in this thesis, has been gaining the attention of the world community. The literature is extensive when we look at anthropology and the local knowledge of ancient cultures, at participatory research initiatives with Third World farmers, and at the growing field of traditional ecological knowledge of Indigenous Peoples of North America and elsewhere. Specifically, the knowledge of Indigenous Peoples has received much attention. For example, the United Nations Conference on Environment and Development, held in Brazil in 1992, paid particular attention to the knowledge of Indigenous Peoples. Throughout the document
resulting from this conference, Agenda 21, specific mention was made of the need to validate and integrate indigenous knowledge into resource management approaches. In Canada, significant developments are occurring with respect to the integration of indigenous knowledge systems and western, scientific approaches commonly employed in the EIA (Johnson 1992a).

For those who are interested in the unique knowledge base of farmers, however, and the impact of their knowledge on the EIA, information is not as easily found. There is a need to look into this issue because large resource use projects continue to be proposed, and some are being proposed for rural areas which were once reserved for the sole purpose of agriculture. An examination of public participation initiatives needs to be conducted to determine what kinds of knowledge the farming public provides during the EIA process and whether and how their knowledge is used by the decision-makers and their advisors.

Purpose and Objectives of the Thesis

The purpose of the research conducted for this thesis was to examine the role of local knowledge in the EIA process. The specific aim of the work conducted was to determine what impact the knowledge provided by local farmers during the Alberta-Pacific (AlPac) EIA had on the proposed project. The results of this study are specific to the AlPac case and are not generalizable to all situations where EIA's are reviewed with public hearings. However, the examination of this case helps to broaden our understanding of the role of local knowledge in the EIA and public hearing process, and provides insights that are applicable to other situations with similar circumstances.

The objectives of this thesis are: (i) to identify and classify the knowledge contributed by local farmers during public hearings held for the EIA of a major resource development project; and (ii) to determine what impact, if any, this knowledge had on the planning and operation phases of the proposed project. In addition, the values and perceptions of local knowledge held by those in advisory and decision-making capacities was explored.
Approach Used

The approach used in this thesis research is the single case-study. I have examined a case in Alberta in order to see what kinds of information the local farming public submitted during the public hearing process, and whether their input was considered when the final decisions about the project were made.

Proceedings of the public hearings on the Alberta-Pacific (AlPac) pulp mill in northern Alberta were analyzed and the submissions of the local farmers were categorized according to the kinds of knowledge they expressed. The reports which were issued subsequent to the hearings were considered by the Provincial Cabinet in making a final decision about whether the pulp mill should be built as proposed by AlPac. These documents were analyzed to determine how much of the local knowledge presented at the public hearings was reflected.

Interviews were also conducted with members of the Alberta-Pacific EIA Review Board\(^1\) and the Alberta-Pacific Scientific Review Panel\(^2\), as well as the proponent, to document some of their perceptions about local knowledge and the role it played in formulating and revising their plans for reviewing, or in the case of the proponent, planning for the project. The opinions of Board and Panel members and the proponent regarding the role that local knowledge should play in such reviews, were also documented.

The research conducted for this thesis contributes to the literature already available on local knowledge and the EIA process. The unique aspect of the work conducted lies in that it examines the impact of the knowledge provided by local area farmers during the EIA public hearings, and documents the perceptions and opinions of local knowledge held by members of the Review Board and the Scientific Review Panel.

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\(^1\) Subsequently referred to as the Review Board, or, 'the Board'.

\(^2\) Subsequently referred to as the Scientific Review Panel, or, 'the Panel'.

3
Organization of Thesis

A literature review is presented in Chapter 2 of this thesis, in which I set the stage for discussing the research that was conducted. I outline the development of thought that led to the formulation of the research questions and the decision to use a specific research approach. In this chapter, I describe some possible reasons why people choose to participate in public hearings of environmental review processes, and discuss some impediments that exist to public participation. Recognizing that people who do participate must feel they have some knowledge to contribute, I explore different systems of knowledge, and develop a working definition for local knowledge. Finally, I review the literature that specifically addresses local knowledge and the AlPac EIA Review Board Public Hearings.

Chapter 3 provides a description of the AlPac case. A brief history of events is provided which explains the EIA process at the time in Alberta, the role of the proponent, a brief profile of the Athabasca region and the immediate impact area for the AlPac pulp mill and a summary of the events which occurred after the public hearings. In Chapter 4, I detail the methodology to be used for the case-study. I give the rationale for using both quantitative and qualitative techniques for the research and provide justification from the literature.

Chapter 5 is dedicated to the results obtained from the analysis of the written briefs, and the identification and classification of the local knowledge presented by the farming public. Chapter 6 provides an analysis of the follow-up reports and deals specifically with the results and analysis of the interviews conducted. Finally, in Chapter 7, I provide conclusions and discuss the implications of the findings.
CHAPTER 2
LITERATURE REVIEW

This thesis deals with the local knowledge of farmers, and its role in the environmental impact assessment process. In this chapter, the reader might expect to find a review of an extensive body of literature on this topic. However, after conducting literature searches in the fields of agriculture, anthropology, sociology, and adult education, it was found that the literature on this specific topic is very limited. Therefore, it was necessary to draw from literature on several related topics. First, it was decided that the mechanism by which the knowledge of local farmers can be obtained is through public participation, so the literature available on that topic was surveyed. Next, the literature on EIA's was considered since the EIA is often used as a tool for the planning and decision-making stages of industrial projects. It is most likely during the EIA that public participation will be sought. The literature available on participatory research was also looked at because it is the specific intent of participatory research initiatives to involve local people in the planning and research of projects that will affect them or their communities significantly. However, much of this literature is from the perspective of Third World communities and had to be applied indirectly to the Canadian environmental development scenario. Finally, the literature on local knowledge in the agricultural field and in the cultural context of Indigenous Peoples\(^3\) was surveyed. The former deals mainly with the impact of the knowledge of farmers as it affects farming and management practices, and the latter deals specifically with the contribution of local people to the EIA process, but these local people are primarily from indigenous cultures, and are not necessarily farmers. While none of these areas deal directly with the topic to be studied, I hoped that by surveying relevant related literature I would be able to identify the gaps that exist with regard to the local knowledge contributed by farmers during the EIA process, and research these further.

Some literature exists on the subject of local knowledge as it relates to the specific case to be

\(^3\) This is widely known as Traditional Ecological Knowledge, or Traditional Environmental Knowledge, and will be referred to in this thesis as TEK.
studied in this thesis. The work conducted for the present study adds to this body of knowledge and contributes to an improved understanding of the role that local farmers do, and should, play in the EIA process.

Public Participation

For the purposes of this thesis, it is important to make a distinction between public participation in general and the more specific term 'local knowledge'. Public participation is now widely accepted as an important component of the EIA process. It includes initiatives to involve all who are interested in the outcome of a project, from special interest groups with a global focus, to individuals in the general public who may live in the immediate vicinity of the proposed development. Local knowledge, as I will be using it in this thesis, is a subset of public participation and refers primarily to the knowledge of the members of the immediately-impacted community.

Since the 1970's, various levels of government have instituted formal mechanisms to access public input into the environmental decision-making process (Rowson 1993). Tester (1992) has summarized the evolution of public participation initiatives that resulted from the growing demands of environmental activists to be involved in the decision-making and policy-setting processes. Now that the public participation component of an EIA is, essentially, a given for major resource use projects, I became interested in researching the usefulness of the contribution of one particular group of the public, the local area farmers.

Rather than surveying the literature on public participation from the perspective of the effectiveness of the different techniques used, I was more interested in looking into what might motivate local people to get involved in public participation initiatives, before addressing the larger question of what happens to the information they contribute. Therefore, it became important to review the available literature that examines the reasons why people participate in EIA's and hearing processes, and that which
explores some of the barriers that exist which might prevent people from participating.

Why Do People Participate?

Public participation initiatives have been part of the federal environmental assessment process for several decades (Parenteau 1988). Projects falling under provincial jurisdiction have also been subject to examination by the public during EIA's, and these sometimes include public hearings. In order to participate in such hearings, members of the public invest much of their time and energy and, sometimes, finances. Time and effort goes into the research and preparation of a submission and travel time and costs are involved in getting to the hearing community at the designated time. Often participants are scheduled to speak during the day and must take time off work without compensation. Finally, they make a presentation in what is, for most people, a foreign and intimidating atmosphere. Why do people feel the need to participate in such processes? A review of the literature suggests several possible reasons why people would want to have a forum in which they can publicly express their views about a project that is being reviewed. These are discussed below.

Participation Leads to Human Liberation

The feeling that one can participate meaningfully in resource use decisions is a liberating process for many people. By gathering information and collectively analyzing it, a group or individual undergoes an educative process (Hall 1981); this knowledge-creation allows people the opportunity to engage in inquiry about issues that are of concern to them or their families. Participation encourages creativity, expression and development of the human self (Gibson 1975). Such educative and self-reflective processes benefit individuals, as they may become more high-spirited and tolerant (Warren 1992) when they feel they have some control over their lives. This is desirable when one wishes to contribute to the development of a participatory society. Participation can also lead to a sense of empowerment, and encourage people to build more ethical and just communities (Maguire 1987).
Participation can lead to emancipation or a 'human flourishing' (Friedman 1992; Freire 1993), and encourages links between theory and action. The feeling that one is in control of one's life can lead to a feeling of liberation. This liberation is part of the essence of what it means to be fully human. Support for this idea can be found in Freire's Pedagogy of the Oppressed (1993, 29) where he states: "Freedom is not an ideal located outside of man [sic]; nor is it an idea which becomes myth. It is rather the indispensable condition for the quest of human completion".

Participation is a 'Right' in a Democratic Society

In a representative democracy such as ours, people can express their opinions through their elected representatives. However, for many issues which are critically important to the public, and many environmental decisions fall into this realm, people want an additional forum in which they can make their opinions known. Many view public participation in the environmental decision-making process as a 'right' in our democratic society. Our evolving system of governance, and the high profile accorded to the environment, make it highly unlikely that the public will be satisfied with a decision that is imposed and made in an authoritarian manner; that is, without consultation. This is widely recognized now, and most governments take steps to ensure that opportunities for participation are built into the review process for proposed projects. Public participation, thus, allows for a democratization of the decision-making process, and "assures the viability of participative social organization" (Gibson 1975, 23).

Friedman (1992) states that through participation, the imbalances of social, economic and political power can be rectified. In his book, Empowerment: The Politics of Alternative Development, he discusses his concept for an alternative form of development which would focus on people and their environment rather than on increased production and profits. Brown (1985) refers to a similar concept and calls it 'people-centred development'. Friedman emphasizes the importance of politics in protecting people's interests, especially those of historically-disadvantaged people, a term he uses to refer also to future generations. Friedman's model is concerned with human rights, citizen rights (which include those
of children, women, and future generations) and a human flourishing which results from the growth of an individual as a direct result of participating in a decision that directly affects one’s life. Effective participation can help build a truly inclusive democracy which "includes correlatives of civil liberties, accountability, and wide access to full, accurate and appropriate information" (Friedman 1992, 41).

Participation Results in Better Decisions

Justification for meaningful participation in resource use decisions is clear if one believes that it is a fundamental human right for people to participate in decisions that affect them or their children. As to what level of participation is satisfactory is a question yet unresolved, but the literature suggests that in many cases, public participation results in better decisions being made.

When planning for environmental development takes into account the needs of the people it will likely affect, the resulting decisions will be more relevant to their needs. When the local public participates, it conveys the knowledge it has of the local environment, gained from first-hand experience, as well as its beliefs and perceptions (Chambers 1983). Theirs is a knowledge that people living away from the area will naturally not possess. Bodeman (1978) illustrates this concept with an analogy drawn from Marx’s *Enquête Ouvrière*. He quotes: "Only the workers can describe with full knowledge the evils which they endure; only they, and not the providential saviours can energetically apply remedies to the social ills which they suffer." Marx was referring here to the political oppression of workers by a capitalist society; however, the transformation that can result from a participative process has relevance for the current thinking on the purpose of public participation initiatives. By raising its consciousness, a group makes it possible to change its social condition (Freire 1993).

Public participation can be a two-way process, educating both the public and the decision-makers. More and more, the meaning of public participation is moving away from a community’s simple acceptance of being told what is best for it (Bodeman 1978), to working cooperatively with decision-makers to identify and convey its needs. This cooperative approach demonstrates to decision-makers that
involving the local communities enriches the knowledge base and can result in better decisions being made.

Impediments to Participation

Although generally, the public wants more opportunities for involvement in resource use decisions, there can be significant impediments to participating and many people choose not to get involved. Some may be sceptical about the impact of their input; others may be ambivalent about the project being reviewed or confused about the process. Still others may be afraid to speak for fear of political or economic repercussions. The literature suggests that impediments to participation may be internal (originating with the individual), or external (resulting from political or societal priorities).

Public review processes often involve long and complicated forms of participation. For members of the public who choose to participate, there are usually public meetings to attend and verbal or written presentations to make. The result of the public process can take the form of a summary document, for instance, but the impact of the input on the final decision is usually unclear. The investment of time on the part of the public is large. This can be a disincentive, especially when the impact on the outcome is uncertain. The preparation of presentations, whether verbal or written, takes a long time for the ordinary person and often requires resources that they do not have. In the wake of such adversity, people will often say they don't have time to participate, or that even if they did, it wouldn't make any difference. This induced passivity is a factor to consider in the design of any public participation program (Friedman 1992).

Members of the public may also think that they have nothing valuable to contribute to a process that is already being considered by scientists and other experts. They may decide not to participate for fear that they will appear ignorant. One possible reason for this is, as Maguire (1987) states, that the knowledge that local people possess has not been valued by classical western science (Maguire 1987). This has contributed to silencing local people by making them believe they have nothing useful to say. When they do participate, they usually lack the terminology that confers power (Maguire 1987) and are often ignored by the decision-makers. For example, they may not be familiar with scientific or technical
jargon, and their observations may therefore be dismissed as incidental or anecdotal.

The economic realities of individuals and of communities may also be considered an impediment to participating in public review processes. Much of the literature that deals with economic status as an impediment to participation focuses on the Third World, where farmers and peasants are often not the owners of the land they work, and are usually oppressed by the governing regime. However, even in Canadian society where overt oppression is not generally considered to be a major obstacle to speaking freely, economic status can still be an impediment to participation if the proposed development is linked to jobs for local people. For example, people may be much more reluctant to participate and speak openly against a particular development if there is a promise of employment and a better life for them or their children.

Dealing with barriers to participation, whether these are economic, political, or even personal, is the focus of much of the literature on participatory research. Historically, the creation of knowledge has been nearly a monopolized industry (Hall 1979 and Tandon 1981 as referenced by Maguire 1987). Tandon (1988) stated that the control of knowledge by the elite has tended to support the status quo, and that technical knowledge can be used to expand power and control over people and the environment (Friedman 1992). In fact, some have gone so far as to say that the role of research has traditionally been to support decisions made by central authorities, and that these are not necessarily made in the interest of the majority (Hall 1981). The emergence of participatory research as a field of study challenged this, thereby giving a voice to local people and providing control of what research was conducted, for what reasons, and for whose benefit. Scientific knowledge has been the basis upon which resource use decisions are made, yet farmers or peasants know much about living systems and working the land. Their interest is generally to keep the land healthy to perpetuate a lifestyle and income for their offspring. Gardner and Roseland (1989) refer to a CUSO statement on sustainable development which supports this idea:

[Sustainable development] recognizes that communities must define and develop their own

solutions to environmental and development problems and that those who are closest to the environment know best how to preserve and protect it. In the long term, it will increase the capacity of local communities to adapt and respond to changing environmental, social, and economic conditions.

While this is a contentious issue and one that is often challenged, it does suggest that local people do have knowledge to convey during the planning and decision-making process that is relevant and potentially very significant. Unfortunately, ordinary people are often left out of the process because their knowledge has not been widely accepted as legitimate. This sense that only experts possess valuable knowledge can be a disincentive for local people to involve themselves in public participation initiatives.

Both the environmental movement and the participatory research initiatives which began in the 1970's have contributed to the increasing attention on people's knowledge as a legitimate component of public participation initiatives. However, many terms exist in the literature which refer to this 'alternative' knowledge, and it became necessary to review the literature on local knowledge as it pertained to several different areas. A summary of this review is presented in the following section.

**Alternative Knowledge Systems**

Most studies conducted to establish potential impacts of various projects on the environment focus on scientific and technological information and often do not consider the knowledge of the local people. Cushon (1992, 3) has documented the need to consider other types of knowledge, especially when addressing the complexity of environmental issues. He states: "Scientific knowledge has carried enormous weight in determining how best to manage our affairs with respect to nature. While recognizing the importance of science it is equally important to recognize the validity of other kinds of knowledge in the debate". This reference to 'other kinds of knowledge' is ambiguous. Alternative knowledge systems are referred to widely in the literature under many labels, including local knowledge, traditional knowledge, traditional indigenous knowledge, and people's knowledge to name just a few. These terms
are sometimes used interchangeably to refer to alternative forms of knowledge creation that either seek to replace or complement, Western, conventional, scientific methods.

Including alternative knowledge systems in the planning and decision-making processes of resource use and management decisions is an issue that has gained world-wide attention. Our Common Future and Agenda 21 are two international documents in which the need to validate environmental knowledge held by local people is expressed (WCED 1987; Johnson 1992; UNCED 1992). The former is heralded as a significant pivotal document, responsible for highlighting the current environmental crisis and the need for a coordinated, international approach to sustainable development. The latter is more recent and was the document produced after another meeting that was held to discuss an international approach to protecting the environment. Throughout this second document, Agenda 21, specific reference is made to the need to integrate indigenous knowledge, values, and views into the management of resources in order to achieve sustainable development. There was an emphasis placed on Indigenous Peoples throughout the conference and the resulting document for two main reasons. First, Indigenous Peoples constitute a significant percentage of the global population; secondly, many believe that their relationship to the land defines living in a sustainable manner. Clarkson, Morrissette and Regallet (1992) believe that other societies can learn from Indigenous Peoples about how to live on and adapt to fragile environments. They state: "Sustainability for traditional Indigenous peoples means ensuring the survival of the people, the land and the resources for seven generations" (Clarkson, Morrissette and Regallet 1992). These authors document that Indigenous Peoples are the source of knowledge about how to live on the land in an ecologically and socially sustainable way. They explain that the knowledge of Indigenous Peoples is based on a holistic vision of life and is in compliance with natural law, and draws from a respect for the earth and all of creation. It is firmly rooted in, and committed to the protection and the preservation of the environment for future generations.

Indigenous knowledge about the environment encompasses soil and plant classification, climate, and animal behaviour (Burger 1990). Indigenous knowledge has gained acceptance in the scientific
community, especially in the area of medicine. Approximately 75 percent of plant-derived prescription
drugs used throughout the world today were discovered following leads from indigenous medicine (Burger
1990). Modern medicine is beginning to accept the fact that indigenous knowledge of herbs and other
medicinal plants may hold the cures for many diseases that have eluded western science. More recently,
there has been increased attention devoted to indigenous knowledge in other fields of study. Traditional
ecological knowledge (TEK) is one example where much research is being done to bring indigenous
knowledge to the forefront of ecological issues (Johnson 1992a).

Traditional Ecological Knowledge

Much of the work done on TEK in Canada has been carried out in the Arctic. It has been
documented, for example, that the knowledge of the Cree is empirical (Berkes 1988), as is much of the
knowledge of the peoples of the North; it is based on the careful observation and use of natural resources
(Warren 1991). The 'traditional' component sometimes refers to behaviour-based information (Freeman
1985), which is only now gaining acceptance as valuable knowledge about the environment. Hobson
(1992) explains that there is a tendency to reject traditional knowledge because it can seem to be anecdotal
and 'unscientific'. Generally, traditional methods of enquiry are holistic (Freeman 1992), and the survival
of this knowledge through generations is a testimony to its validity and adaptability (Feit 1988). The
current emphasis on the traditional aspect of this knowledge is part of the search for alternatives to current
systems of knowing (Berkes 1988). Freeman (1985) states that the native system "relates the individual to
family and communal values and ensures attachment of past, present, and future".

Nakashima (1990) states that much of the scientific understanding of northern ecosystems is
'scant'. It is generally accepted that science provides only partial knowledge of natural systems and that
the holistic approach of traditional knowledge has much to contribute. McDonald (1988) described some
problems that emerge when resource scientists attempt to control ecological uncertainty and conduct their
studies. The tendency, he explains, is to concentrate on ecological issues and ignore socio-economic
realities, which can result in limited understanding of biological and socio-economic responses to management interventions. Studies which take the local community into account are much more likely to be successful. Rees (1986) accords the success of a joint University-Dene study to the fact that the study team had a fundamental belief that potentially-affected local residents are uniquely qualified to document and interpret impacts of such development on their personal lives, as well as on their community.

Surveying the literature on traditional knowledge leads to the conclusion that while neither scientific nor alternative knowledge systems are complete on their own, the combination of both systems encourages a more enhanced approach to knowledge creation (Chambers 1983). For example, the literature suggests that TEK should be taken seriously (Freeman 1992), but it does not advocate that it is, or indeed should be, the only system applied. While it is described as holistic, and some authors state that "[t]he traditional philosophies and practices of Indigenous peoples offer an alternative that is sustainable" (Clarkson, Morrissette and Regallet 1992, 65), the general trend expressed in the literature is that it needs to be combined with conventional western scientific methods (Colorado 1988; Nakashima 1990; Bielawski 1992; Johnson 1992). Colorado (1988, 49) refers to the need to develop a bicultural model of research that is accepted and respected by both cultures; the two must be integrated, she claims, in order for each to be enhanced. She carefully chooses the word "integration" because it "...refers to a blending of research efforts, not the domination or extension of ideological control by one culture's science". Bielawski (1992) also speaks of "integration" and recognizes that while people now accept the need to use both systems of knowledge, especially in the Arctic, no one knows how best to accomplish this task yet. Johnson (1992a) has emphasized the need to use participatory research methods as a possible avenue to using and respecting both indigenous, and western, scientific methods.

Traditional Knowledge and Agriculture

Traditional knowledge is also relevant in the study of agricultural systems. Extensive literature exists regarding the knowledge of different cultures in relation to agricultural practices (for example, Feit
1988; McCorkle 1989; Warren 1991; Johnson 1992). Warren (1991) cites many cases, including a rice irrigation project in Mali, a soil regeneration project in Rwanda, and a soil erosion and moisture control project in India, where 'success' was possible only when workers respected and used the knowledge of the local people, and worked through the indigenous concepts and social systems of the community.

McCorkle (1989) provides examples of cases where the local people know much about the local physical and human environment, and emphasized that acceptance of new technologies and management systems is more likely if local people are involved in the planning stages. In some cases, it has become evident that the local people know as much, if not more, than the scientists who come to help them. The example of a farming systems project in Tunisia illustrates this well (Esslinger and McCorkle, 1986 as cited by McCorkle 1989). Scientists conducted numerous tests to determine the salinity of the soil, and reported to the local farmers that the soil was indeed salty. The local farmers already knew this because they were accustomed to 'testing' the soil by tasting it, and also because they could often see the salt crusts along the furrows in the fields. McCorkle also describes development projects that have failed because no one gathered information of local social knowledge.

Warren (1991) states that many farming systems are based on intimate knowledge of soils, vegetation, climate and pests, and that the local people have valuable information to contribute. While there is general acceptance that traditional knowledge exists among farmers, there is recognition that their knowledge may be incomplete (Chambers 1983; McCorkle 1989; Warren 1991). There are advantages to working with the local people and having access to their knowledge (McCorkle 1989) but, as Chambers (1983) states, rural people's knowledge can also be overvalued, and may not always be valid or useful. He emphasizes that both local and scientific knowledge systems can be incomplete if used in isolation of the other, and can even be wrong at times. The important thing is to know which one is appropriate when, and that, used in combination, the knowledge base is likely to be enriched.
Traditional Knowledge and the EIA

Traditional knowledge, as it relates to EIA's, commonly refers to indigenous knowledge systems. Much has been written about the participation of Indigenous Peoples of Canada in the EIA process, and the incorporation of their knowledge into decision-making systems. Few authors apply this concept to people who, although not indigenous, have adopted a land-based lifestyle. Johnson (1992a, 4) makes specific reference to the knowledge of farmers and outport fishers and the similarity of the knowledge they possess to traditional environmental knowledge. She defines traditional environmental knowledge as:

...a body of knowledge built up by a group of people through generations of living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use....With its roots firmly in the past, traditional environmental knowledge is both cumulative and dynamic, building upon the experience of earlier generations and adapting to the new technological and socioeconomic changes of the present.

She explains that the term 'indigenous' is often preferred over 'traditional' because it removes the ambiguity about the word tradition and clearly emphasizes Indigenous Peoples. She adds, however, that "...similar knowledge is found among non-indigenous groups such as outport fishermen and farmers", and claims that these groups "have also acquired their knowledge and skills through hands-on experience living in close contact with their environment". It is this statement, that the work for this thesis is built upon. If indeed, farmers possess a knowledge that is unique to their lifestyle and culture, it is of interest to know whether this knowledge is put forward in EIA's during a hearing, and if so, whether this knowledge is ever used by decision-makers and their advisors. An examination of the Alberta-Pacific pulp mill case leads to some conclusions on this matter.

Much information is documented with regard to traditional ecological knowledge and the need for its incorporation into or integration with current methods used in either the EIA, or other processes used in the environmental decision-making process (see for example, Freeman 1985; Berkes 1988; Colorado 1988; McDonald 1988; Warren 1991; Freeman 1992; Hobson 1992; Johnson 1992). However, the various bodies of literature surveyed are lacking with respect to the local knowledge of farmers and the potential of people in the farming sector to contribute their knowledge to environmental planning and decision-making
processes, such as the EIA. This gap in the literature is evident and is, therefore, the focus of this thesis.

Defining Local Knowledge

Scientific knowledge has long been hailed as valid because it is based on observations that are predictable, testable, and repeatable (Maguire 1987). A review of the literature on methods in the natural and social sciences is provided in Chapter 4 of this thesis. At this point, it is important to clarify the differences between traditional knowledge and local knowledge, and develop a working definition for local knowledge as I will be using it in this thesis.

As was explained in the preceding sections, numerous studies have identified local knowledge as an important component of the knowledge-creation process. Some authors claim that local knowledge is necessary, whether it be for the liberation of rural communities (Chambers 1983), or as being crucial for success in agricultural research, development, and extension (McCorkle 1989), or for providing a means of connecting to one’s spiritual roots (Johnson 1992b). Local knowledge is referred to by Hobson (1992) as traditional knowledge, and is defined as "the accumulated knowledge and understanding of the place of human beings in relation to the world in both an ecological and spiritual sense". This same concept has also been referred to by others (e.g. McCorkle 1989) as indigenous knowledge. McCorkle (1989) refers to local knowledge as having to do with "theories, beliefs, practices, and technologies that all peoples in all times and places have elaborated without direct inputs from the modern, formal, scientific establishment". Chambers (1983) prefers the term "rural people’s knowledge"; local knowledge, he claims, can be misinterpreted to mean knowledge of the local environment instead of the knowledge of the people which exists as part of a system of concepts and beliefs. Rural people’s knowledge, he states, is a more inclusive term, referring to knowledge that people have, whether it is written down or not, and includes beliefs and perceptions, and the means by which this knowledge is stored and transmitted. Vadhanasindhu (1995) expanded Chambers’ definition to include knowledge of one’s perceptions and values.

For the purposes of this thesis, I chose to use Vadhanasindhu’s definition of local knowledge, and
further restricted the use of the word 'local' to apply specifically to the farmers of the immediate geographic region of the proposed pulp mill project. Also, I was specifically interested in seeing what is done with the information provided by these local people during the public hearings held during the EIA review. So, while local knowledge can be an all-encompassing term to refer to the knowledge contributed by the public, and includes traditional or indigenous knowledge, I have chosen to look specifically at the knowledge that the local area farmers conveyed during the AlPac EIA hearings. The term 'local' refers to a small geographic area adjacent to the mill site, which in the case being studied, is inhabited primarily by farmers. I wished to focus specifically on the knowledge contributed by farmers since not much has been written about the usefulness and value of their knowledge in the EIA process.

Local Knowledge and the Alberta-Pacific Pulp Mill EIA Hearings

There have been previous studies of local knowledge and the case chosen for this thesis. Richardson, Sherman and Gismondi have written extensively about local participation in the AlPac EIA public hearings (see for example, Gismondi and Richardson 1991; Gismondi, Sherman and Richardson 1992; Sherman and Gismondi 1992; Richardson, Sherman and Gismondi 1993). All three reside in the region, work at Athabasca University, and were participants in the AlPac hearings as well, thus offering a unique perspective to the reader. Others have written about this public review process (e.g. Edwards 1990; Novek and Kampen 1992; Pratt and Urquhart 1994) and various accounts of the impact of these hearings on the final decision are documented. Pratt and Urquhart (1994) provide their perspective on the value of 'science' in the outcome of the hearings, but the most detailed account of local knowledge is offered, not surprisingly, by the local authors.

Sherman and Gismondi (1992) present an account of local knowledge conveyed at the hearings as a basis for developing a set of community environmental indicators to monitor the state of the environment. The hearings, they stated, provided a sample of local knowledge which was based on
experience, memories and expertise of the local people. Presentations by locals described how they viewed the potential environmental impacts of the mill, and identified those issues that were of most concern to their families and their community. This constituted a body of knowledge not usually included in the literature on environmental indicators.

Richardson, Sherman and Gismondi (1992, 13) demonstrate that the local people provided knowledge that challenged the knowledge of the experts, thereby showing that local knowledge complements traditional 'science', and in these hearings, "...operated as a feedback and evaluative check on official/expert knowledge". In their book, Winning Back the Words, the authors once again explain and provide examples of how local people challenged the expert witnesses and provided additional information based on their particular circumstances, that had not been addressed by the experts. Their concept of the value of local knowledge was that local people provided a holistic account of how the pulp mill might affect their community and their livelihoods, rather than considering these factors individually, as was the case with much of the expert testimony provided.

What Kinds of Local Knowledge?

The literature mentioned above describes some of the knowledge provided by Native people in the region, local area farmers and residents, and environmental interest groups, some of which were local. The authors describe various examples of the knowledge provided by local farmers, including some scientific knowledge, as well as knowledge of their own values. For instance, they describe how road closures and plans for rail lines disrupted farming operations, and how increased traffic, smell and noise would affect the quality of life of local farmers (Sherman and Gismondi 1992). They also detailed issues of concern to the local farmers such as the removal of agricultural land from production, increased atmospheric emissions, increased traffic, and economic benefits (Richardson, Sherman and Gismondi 1993, 113). In general, they demonstrated, using excerpts from the presentations at the hearings, that the farmers themselves "painted a complex picture of a farming community" based on their experience and
observations, that 'science' alone could not capture.

What Were Some Conclusions and What Are the Needs?

Sherman and Gismondi (1992) conclude that recognizing local knowledge provided within the EIA process will assist planners, as well as increase the general awareness of the importance of participation in planning and decision-making. Merely recognizing that the knowledge exists, however, does not give an indication of the usefulness of this knowledge to planners and decision-makers. It is important to attempt to determine whether and how this knowledge is used in plans for development by both the government and the proponent of a project. These authors also make some conclusions about the importance of local knowledge to the proponent and the Review Board in the AlPac case. They describe how AlPac treated issues of great concern to the local farmers, such as road closures and rail lines, as an 'inconvenience'. Richardson, Sherman and Gismondi (1993) used a quote from the Chair of the Review Board in which they interpreted that it implied public knowledge would carry less weight than expert knowledge. This quote is repeated here to show that it was open to interpretation, and that, while these authors drew this particular conclusion, it merited verification:

[T]here is a significant amount of technical information which the Board has yet to receive...It's imperative that we have such information. We want to hear from the public, but we must have that technical information as well.

(Gerry DeSorcy, Review Board chair, Athabasca:3291 as quoted in Winning Back the Words, p.107)

To truly find out the value of local knowledge to the person quoted above, it would be illuminating to ask him personally. While the authors arrived at some important conclusions about the values and perceptions of local knowledge held by the proponent and the Review Board, it would be helpful to interview these key participants to indeed find out what value local knowledge had to them during this process. This gap was addressed in the study conducted for this thesis.
CHAPTER 3
DESCRIPTION OF THE ALBERTA-PACIFIC CASE

The case chosen for this study is the EIA Review Board Public Hearings which were held to review the Alberta-Pacific pulp mill proposed for northern Alberta. These hearings were held in late 1989 in various communities in the region, and lasted for six weeks. In order to provide sufficient background for the reader, I will describe the geography and economy of the Athabasca region and the political circumstances that led to public hearings being called as part of the review of this project. In this chapter, I also provide a brief description of the proposed mill and outline the EIA review process at the time in Alberta. A brief explanation of the sequence of events prior to and following the EIA Review Board hearings will summarize the unique circumstances of this case and explain the large amount of controversy that this project generated.

The Athabasca-Lac La Biche Region

The Athabasca-Lac La Biche region is situated in the north-eastern quadrant of the Province of Alberta. Much of this area is zoned for agricultural use, with some oil and gas development to the east, in the Cold-Lake area, and the boreal forest to the north. The oil sands near Ft. McMurray, initially developed in the early 1970's, remain in operation today. The region is characterized by many mixed farming communities, and several Native reserves and Metis settlements. It has historically been considered to have high unemployment rates, and there have been several political initiatives, including the relocation of Athabasca University to the region, to help stimulate economic growth.

The community of Prosperity constitutes a very small part of the Athabasca-Lac La Biche region, and the riverside mill, when proposed, would be one of several on the Peace-Athabasca river system. The

5 The legislation in Alberta has since been revised, and the new Environmental Protection and Enhancement Act was enacted on September 1, 1993.
proposed mill site was approximately 47 kilometres (km) downstream from the town of Athabasca, 36 km from the Village of Boyle, and 67 km from the Town of Lac la Biche. Figure 1 shows the proposed mill site in relation to other communities in the area. Approximately thirty families farmed in the immediately-adjacent area (Alberta Pacific Forest Industries Inc. 1989). The closest urban community is Grassland, 20 km to the southeast, which had a school with over three-hundred students, recreation facilities and commercial development. Spruce Valley Mills, a nearby sawmill, employed thirty full-time and fifteen part-time labourers⁶ (Alberta Pacific Forest Industries Inc. 1989).

Many residents in the area were engaged full time in mixed farming operations. Several groups of families farmed together and those who worked off the farm generally stayed in nearby communities. This farming community regarded highly the quality of their local environment. Their appreciation for the natural resources in the area led to the designation of an area of sand dunes nearby on the south bank of the Athabasca River as the Pine Sands Natural Area. The Poacher's Landing Recreation Club has a lease on the eastern portion of the Natural Area which includes a boat launch, a playground, and a picnic and camping area (Alberta Pacific Forest Industries Inc. 1989). Many families chose to vacation in the area during the summer months and many community events were held throughout the seasons. In general, the community defined itself, not by strict physical boundaries but by the common bond they shared by living "in the area". The announcement of a forestry mega-project, to be situated in the middle of an established agricultural community was welcomed by some and resented by others, as was evidenced during the presentations at the public hearings. It became the one issue that threatened the cohesion of this established farming community. Many of the families have been relocated, and some have moved outside the region altogether.

⁶ Spruce Valley Mills burned down in June, 1989 and was never reconstructed.
Figure 1  Location of the Alberta-Pacific Pulp Mill
Source: Alberta-Pacific Environmental Impact Assessment Review Board 1990
Northern Alberta Economy

In the 1980's, the Province of Alberta was looking for ways to recover from the downturn in the agriculture and energy sectors (Edwards 1990). Unemployment was higher than previously experienced, and the population of rural areas in northern Alberta was decreasing. Economic realities had led to a concentration of jobs in urban areas, encouraging young people and others to migrate to the cities for work. Faced with this scenario, the government acted on a diversification program originally designed by the previous Conservative government7 (Pratt and Urquhart 1994) to attract industry to develop in rural areas. This was intended to promote growth of the rural economy and to change the migration patterns of labour to urban areas. One area of growth that was identified was the industrialization of the forest resource (Edwards 1990). This had not previously been feasible since the pulp industry used mainly softwoods in its production of pulp and paper and these trees are found mainly in mixed stands in Alberta and were, therefore, uneconomical to harvest (Edwards 1990). New technologies, however, were making it possible to exploit the hardwood resource for pulp and paper. Since hardwood trees are found in abundance in Alberta, the Province launched a program to interest international developers in the northern region of Alberta. The time was right economically, as world market prices for pulp and high quality paper were increasing (Edwards 1990).

Interest in the government's invitation to exploit the resource was immediate and resulted in several new pulp mill projects being announced in Alberta. Within two years, seven projects had been announced8. While Daishowa gained much public attention (mainly due to issues relating to Lubicon land claims), it was not until the announcement of the Alberta-Pacific proposal for a single-line, bleached kraft pulp mill in the Athabasca area that public groups had become effectively organized to oppose the project

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7 Led by Peter Lougheed.

and the government's new forest development policy. The AlPac proposal was surrounded by much controversy and became the impetus for much public outcry and demands for changes to government policy.

**The Alberta-Pacific Pulp Mill Proposal**

On December 13, 1988, after many rumours and suspicions that a pulp mill would be proposed in the area, Premier Don Getty, the Minister of Forestry, Lands, and Wildlife, and the MLA for Athabasca-Lac La Biche together announced that the forest exploration rights had been awarded to a joint venture of Crestbrook Forest Products from B.C., Mitsubishi Corp. and Honshu Paper Co. Ltd. (Nikiforuk and Struzik 1989; Pratt and Urquhart 1994). The new company, later named Alberta-Pacific Forest Industries, had been awarded approval-in-principle to build their mill at a site south of the Athabasca River, near the community of Prosperity (Figure 1). This site was chosen in order that the nearby towns of Athabasca, Lac La Biche and Boyle would all be able to benefit economically from the development in the region (Alberta Pacific Forest Industries Inc. 1989).

The proposed mill was expected to cost 1.3 billion dollars to construct. The Government would be providing a 75 million dollar grant and a 400 million dollar loan to the proponent. The mill would be a single-line operation, with the capacity to process 1,500 air dried tonnes per day (ADT/d) of hardwood pulp or 1,250 ADT/d of softwood pulp (Alberta-Pacific Environmental Impact Assessment Review Board 1990; Edwards 1990; Richardson, Sherman and Gismondi 1993). The wood supply would be coming from a Forest Management Agreement (FMA) area in the north-eastern part of the province, comprising approximately 74,000 square kilometres (Richardson, Sherman and Gismondi 1993).

This announcement was big news for this economically-depressed region and was being referred to by some as a "Christmas present" from the government. However, for some residents of the community of Prosperity, who were mostly farmers, this announcement had more serious implications. It was not...
clear what this announcement meant for their community, whether they would have to move, or how their farming operations would be affected. A local citizen asked some of these questions at the press conference, and the Premier responded by saying he "had no time for complainers" (Nikiforuk and Struzik 1989; Pratt and Urquhart 1994). The silence that followed this exchange was 'pivotal and stunning', as Getty and his advisors conferred on what to do next. With his response, the Premier indicated that he was unprepared for the questions of the activists of the area, many of whom were active from the anti-nuclear campaign and the New Democratic association or were keen critics from academia including natural scientists and sociologists (Personal communication, J. Sherman August 20, 1996).

Given that public opposition to the previously-announced projects had been relatively quiet, the government seemed surprised by the public outcry that resulted from this latest announcement, and there were no concrete answers immediately available to any of the questions raised by the public. The announcement, after all, was for the approval-in-principle of what was thought to be the answer to the region's economic problems. At that point, the government was unable to provide much in the way of answers because the proponent had yet to conduct the EIA. The politicians stated that the company would have to conduct an EIA with a full public participation program which would address the concerns of the public before the project would be given final approval.

A Christmas break followed this announcement, and any questions that the local residents had, were put aside to be dealt with in January, when the company began its public participation program (Opryshko 1989a). The waiting contributed to the frustration and anxiety the local people were facing and helped set the stage for future conflicts between the proponent and the local citizens.

Organizing For and Against the Mill

The rate with which the government was allocating a significant proportion of the province's forest resource to the pulp industry was cause for much public alarm. Particularly in the north, concerned residents began to band together, mobilize resources and form networks to lobby the government for more
effective public involvement strategies in the environmental decision-making process. A group of Athabasca area residents formed the group Friends of the Athabasca (FOTA) in August of 1988 in response to the expansion of the forest industry already taking place in Northern Alberta. By the time AlPac was announced, FOTA activists were ready to challenge the government and demand changes to the public review process. They had been building up their contacts in the north and solidifying their numbers locally and subsequently used their contacts with federal scientists and civil servants, international environmental groups and socialists and trade unionists to mount a campaign to call for a full public review of the AlPac proposal (Personal communication, J. Sherman, August 20, 1996). Some of the key activists in this newly-formed group were employees at Athabasca University. They had skills that helped propel FOTA forward and they made use of the University's resources to the benefit of the group.

FOTA's demands were for full and meaningful public involvement in the AlPac EIA process and their primary focus became to campaign against the bleached kraft pulping process and the resulting emissions of chlorinated organic compounds into the river system (Pratt and Urquhart 1994). FOTA organizers often took the opportunity to emphasize that their group did not oppose development of the forest resource, or even pulp mills for the Athabasca region.

Several of the Prosperity area farmers, some of whom were already active in their community association, with the farmer's union, and the NDP, had established links with FOTA and had also been mobilizing to press the government for increased involvement in the AlPac decision (Personal communication, M. Gismondi, August 20, 1996). Following the announcement, this group gathered momentum and eventually formed the Prosperity Environmental Association (PEA) to highlight the needs of the area residents. The links between FOTA and PEA were evident and these two local groups became increasingly important in defining opposition to the AlPac project as proposed. Members the PEA, while remaining linked to FOTA, came forward in a very organized and public manner to emphasize their unique situation as farmers who would be the closest neighbours to the AlPac mill.

Not all area farmers opposed the mill. Some, whose farms had already been optioned by land
agents for the company, supported the proposed development, as did others who were motivated by the prospect of jobs, a better tax base, better roads, and a better lifestyle for their families (Pratt and Urquhart 1994). As the controversy over the AlPac mill grew, so did the desire of mill supporters of the entire region to come forward and also state their case. Eventually, they formed their own group, the Friends of the Mill. They were a vocal, though loosely-organized (Pratt and Urquhart 1994), group who attempted to convince the rest of the province that they were indeed, the majority. They presented at the hearings, held rallies, and lobbied the government just as emphatically as those who opposed the mill. They too, became determined to publicly express their commitment to the environment as well as to economic growth. However, Friends of the Mill were denied intervenor funds by the government, and thus, were not encouraged to share their local knowledge during the hearings to the same extent as those who had serious concerns about the mill.

Not surprisingly, the tension between these two factions increased as the months wore on. Divisions in the community became apparent, as is often the case with such developments which pit jobs against the environment. The split was evident in the everyday life of farmers who previously had shared equipment or helped each other during harvest or calving season. I recall personal stories from my work with farmers on both sides of the issue where they told me that families had stopped attending church services simply to avoid meeting friends and neighbours who had opposing views on the pulp mill. The issue was full of highly-charged emotion for almost everyone involved.

During the hearings, many of the personal stories were presented. Although local people often expressed reservations at labelling themselves clearly as 'pro-mill' or 'anti-mill', most stated whether they had concerns about the pulp mill development as proposed. Local authorities in Athabasca, Boyle, Grassland, Plamondon, and Lac La Biche were generally in favour of the project (Alberta-Pacific Environmental Impact Assessment Review Board 1990; Richardson, Sherman and Gismondi 1993). Communities downstream such as Fort McMurray and Fort Chipewyan were not expecting to benefit economically by the mill and had concerns regarding the implications for water quality for their residents.
Most Aboriginal people in the region opposed the mill because they were not assured their people would benefit by the mill, and because they had not been consulted in the plans for development; they had, in essence, been largely ignored in the process preceding the public hearings (Alberta-Pacific Environmental Impact Assessment Review Board 1990).

The Environmental Impact Assessment Process

The purpose of an EIA as outlined by the Alberta Government at the time of the AlPac proposal was "to provide comprehensive information to facilitate the early identification and resolution of potentially significant adverse environmental effects of proposed resource development before environmental damage occurs" (Alberta Environment 1977). The governing Act in 1989 for proponents wishing to develop a project was the Land Surface Conservation and Reclamation Act. This Act stated that, at the Minister of Environment's discretion, any person proposing a project that would potentially result in a surface disturbance would be required to conduct an EIA (Alberta Environment 1977). It also stated that the Minister could require that the report show any alternative means by which the proposed operation or activity could be carried out. The guidelines brochure provided by the government to potential developers briefly outlined the review process, and expectations of the government with respect to the content of an EIA.

Requirement for Public Participation

The guidelines brochure stated that as part of the EIA, proponents were required to conduct a public participation program. The scope of the program was expected to be negotiated with the public and with government officials. The purpose of a public involvement program was described as "a forum to provide for two-way information flow between the proponent and the potentially-affected publics to together assess potential impacts and decide whether the proposal is within the limits of public acceptance"
The specific views of the public were to be incorporated as an integral part of the final EIA to be submitted to the Minister. The proponent was further "encouraged to seek out the support of the public for their projects before presentation to government" (Alberta Environment 1977, 1).

The review of the EIA was to be conducted by the public (through a process conducted by the proponent) and by civil servants. The entire process was coordinated by the EIA Review Branch of the Department of Environment. Any deficiencies found in the document were outlined to the proponent in a Deficiency Letter, and the response was further reviewed by the same review agencies. Only when these were satisfied that all concerns had been satisfactorily addressed, would the EIA be termed complete and a letter of recommendation be issued to the Minister. Licensing and permitting procedures would then begin.

While the process was in place that would allow for technical and environmental concerns held by Department officials to be addressed, it is unclear as to what happened to concerns held by the public. These were to be sent directly to the Company and dealt with between the Company and the members of the public. Unless the concerns were written to the Company and copied to the coordinator of the EIA review, there would be no official transcript of the concern by which to compare the proponent's account of public concerns. There was also no system in place to help the coordinator decide when public concerns had been satisfactorily addressed by the proponent. This remained a subjective judgement by the EIA coordinator.

Licensing Procedure

Upon completion of the EIA, the proponent was then able to apply for a permit to construct, and licence to operate under the Clean Air Act, Clean Water Act, and the Water Resources Act (Alberta Environment 1990). The details of each application were negotiated between Department of Environment officials and the proponent; the permits and licences were then held as public documents.
A Permit to Construct, specifying the design of the facilities relating to environmental protection, was required before the proponent would begin construction of the mill (Alberta Environment 1990). Construction was defined as the laying down of concrete for the foundation, and much of the site preparation work such as surveying, was able to be done before the permit was issued. The Licence to Operate was required before the facility would commence operations (Alberta Environment 1990) and was issued for a specific term, usually five years. The Licence detailed standards for air and effluent emissions, the requirements for the types of sampling and analysis to be done, as well as the information to be provided in the monthly and annual reports to the Department (Alberta Environment 1990). Once the five-year term expired, licensees would need to apply for re-issuance and the terms would be reevaluated to reflect any concerns that may have arisen during the previous licensing period.

The process described above had been used since its introduction in the 1970's. Projects in the energy sector were reviewed by the Energy and Resources Conservation Board (ERCB), but reviews of major resource projects in the non-energy sector in the province were a relatively recent development, and no Board existed to review the process. The level of controversy that the AlPac project generated, however, was so high, that it became obvious that the established process needed to be revised. Public pressure led the government to announce that public hearings would be held to review the AlPac proposal, and a Review Board was struck to hear submissions from the public and make recommendations to the Minister of Environment.

The Alberta-Pacific EIA Review Board

Public opposition of the magnitude experienced during the initial stages of the AlPac EIA was unprecedented, and an adequate review process was not in place. Requests for information and inclusion in the process came from Aboriginal groups, environmentalists, academics, labour and church organizations, as well as the local citizens living in the immediate vicinity of the proposed mill. Much of
what happened following the inter-departmental review of the EIA was an ad-hoc reaction to demands made by various factions of the public (David Schindler, telephone interview, 21 December 1995). Edwards (1990) showed that the governing legislation in Alberta provided no process to govern public hearings, and no guiding principles as to when hearings were required and the purpose they should serve.

Mixed in with the uncertainty of direction of the provincial process was the fact that several of the issues to be resolved fell under federal jurisdiction. For example, much of the proposed FMA was on Native land, the river in question was a trans-boundary water body that emptied, eventually, into the Arctic Ocean, and the fisheries of the Athabasca River, were all under the governance of federal legislation. While the federal government had a review process in place for projects which fell under clear federal jurisdiction, there was some uncertainty as to whether its process applied to the AlPac proposal, and the province demonstrated no interest in applying the federal process (Pratt and Urquhart 1994). The result, then, was that a new process, negotiated between the provincial and the federal governments, was required for the AlPac proposal (Edwards 1990). In February, 1989, the then-Minister of the Environment, Ian Reid, announced that a Review Board would be established to review the AlPac proposal.

Composition and Selection of Members

In his announcement, the Minister stated that members to the Review Board were to be selected through consultation with local municipalities and were to include at least three members from the local communities. All members of the Board were to be well-respected individuals in their communities and were to not have expressed publicly their opinions on the AlPac proposal. Edwards (1990) describes in detail the sequence of events that lead to negotiations between the provincial and federal governments and resulted in eight members being selected for the Board. Three local members were indeed selected: Ron Epp (a pilot from the County of Athabasca), Mike Franchuk (a farmer from Wandering River), and Ted West (the Principal at a school in Athabasca). The Aboriginal interests were represented by Chief Jim
Boucher (from the Ft. McKay Indian Band), and Cindy Gilday (the nominee from the Northwest Territories). The federal government selected two individuals, both well-known experts in their fields: Bill Ross from the University of Calgary, an EIA specialist, and David Schindler, an aquatic biologist and Killam professor at the University of Alberta. Both governments agreed on Gerry DeSorcy, the Chair of the ERCB, to serve as Chair of the newly-appointed AlPac EIA Review Board.

Mandate

The mandate of the Review Board was established by both the federal and provincial governments. The Board was to conduct a review of the environmental impacts of the pulp mill proposed by Alberta Pacific. Matters in both the provincial and federal jurisdictions were to be reviewed, but only as they pertained to the Department of Environment. For example, issues which were under the regulation of the Department of Forestry, such as the effects of timber harvesting, were not to be considered by the Board except as this pertained to Indian Reserve Lands (Alberta-Pacific Environmental Impact Assessment Review Board 1990). The terms of reference for the Review Board can be found in Appendix A.

Schedule of Hearings

The initial Ministerial Order stated that the hearings would be held in five communities - Athabasca, Prosperity, Lac La Biche, Fort McMurray, and Fort Smith, and also provided the Board with flexibility to add more hearing sites. One month prior to the commencement of the hearings, the Board held information meetings at each of these five communities to introduce the Review Board, and to provide information on the terms of reference. After these initial meetings, the Board decided to respond to public requests and added several locations to the ones already established: Fort Chipewyan, Fort Resolution, Wabasca-Desmarais, Beaver Lake and Janvier. Later, in response to mounting public pressure, the Minister announced that Edmonton would be added as a location. Still later, it was decided that an additional location (Grassland) would be added to discuss technical and scientific issues. This brought the
total number of locations to twelve. Hearings commenced on October 30, 1989 in Fort McMurray and wrapped up six weeks later in Prosperity. Written submissions were accepted by the Review Board until the fifteenth of January, 1990 and the final report was released to the public two months later in March of 1990.

Summary of Events Following the Public Hearings

In its report, the Board recommended that the AlPac project not proceed until further studies were conducted "to determine if the Alberta-Pacific proposed mill could proceed without serious hazard to life in the river and for downstream users" (Alberta-Pacific Environmental Impact Assessment Review Board 1990). The Minister of Environment announced that the government accepted the Board's recommendations, and the Premier reassured the audience that environmentally-unsound projects would not be allowed to proceed (Pratt and Urquhart 1994) in the Province of Alberta. However, he also stated that "the report did not mean the project was dead" (Edwards 1990), and later in the month, his position changed.

What had been deemed a 'very unique and important' review, was suddenly referred to as 'unbalanced and biased' because it simply summarized the majority of the submissions made before the Board, which were largely opposed to the project (Edwards 1990; Pratt and Urquhart 1994). The Province then hired Jaakko Pöyry OY, a Finnish consulting firm to provide an independent assessment of the scientific data and the resulting recommendations in the Review Board's report (Edwards 1990).

Jaakko Pöyry's review largely substantiated the Review Board's findings, agreeing with the need for more information on the river system, although it did not specify that this uncertainty needed to be dealt with before the project proceeded (Pratt and Urquhart 1994). This costly second opinion was almost irrelevant because soon after this firm commenced its review, AlPac submitted a revised proposal entitled Mitigative Response to Concerns Regarding Chlorinated Organic Compounds, in which it proposed some
wood pulping and process modifications that would eliminate the use of chlorine gas, thereby addressing the main concern stated in the Review Boards's report (Edwards 1990; Pratt and Urquhart 1994). After reviewing this revised proposal, Alberta Environment released it to the public (Edwards 1990) just as the Minister of Environment announced a three-member panel to advise the government on the technical feasibility of the mitigative response (Edwards 1990; Pratt and Urquhart 1994). This Scientific Review Panel held three days of technical hearings in Athabasca in September of 1990, after which it advised the government that it felt the renewed proposal and the associated design modifications would be feasible on a large scale. The government used these findings as substantiation to approve the project, which it did in December, 1990 (Pratt and Urquhart 1994). Since a federal-provincial and territorial joint study had also been announced for a basin-wide study on the cumulative impacts of new and existing pulp mills and other developments on the river systems, the government claimed that it had followed the recommendation of the original Review Board, although it decided that the study would proceed concurrently with the construction of the mill (Pratt and Urquhart 1994).

The mill has since been built, and has been in operation since 1993.

Impact on Government Procedures

"AlPac changed Alberta's politics" (Pratt and Urquhart 1994, 158). There is no doubt that the AlPac EIA review process was the culmination of public opposition to government policy on forestry development that had been brewing for some time. It was the review of a particular project, but a strong message was also sent to the government that the public would no longer be willing to accept the status quo with respect to the way environmental decisions were made. The hearings were dramatic and confrontational, and the entire process altered the political debate in Alberta between developers and environmentalists (Pratt and Urquhart 1994).

The timing of the call for these hearings was highly significant for the environmental movement in the province. Soon after the Board issued its report, the government announced that the legislation with
respect to environmental assessment would be publicly reviewed. While the government waffled on whether or not to accept the Board's recommendations on the AlPac mill, it had heard the message of Alberta environmentalists that the entire process needed to be reassessed. The AlPac review process did not clearly set a precedent for future environmental reviews in Alberta, but it became the case which eventually "forced a reluctant provincial government to change the regulatory framework for natural resource projects in order to avert further controversies" (Pratt and Urquhart 1994, 158).
CHAPTER 4
METHODOLOGY

Methods in Social Science Research

Research in the social sciences presents some difficulties which are not evident in the natural sciences. Many challenges arise when human systems need to be observed and evaluated. Unlike scientists who conduct research in laboratories, or observe non-human systems in the natural world, social scientists must deal with the complexity of human relationships and the concept of emotion. This adds an unpredictable and sensitive element which often makes the results of such research difficult to replicate. Since repeatability and predictability are two critical bases for natural science research, social science research findings have been questioned by those who believe in applying the same rules of research to both the social sciences and the natural sciences. Qualitative approaches often need to be applied to explain certain aspects of human systems. These are sometimes used in combination with quantitative techniques to enhance the meaning of the results.

Much debate surrounds the issue of what constitutes 'science', how this should be interpreted in the study of the humanities, and what role bias plays in such research. In the following section, I present some of these arguments from the literature, before describing the methods used for this study, and the rationale for choosing them.

Quantitative versus Qualitative Methods

Anthropology, sociology, psychology, and adult education all offer approaches to the science of studying human subjects. Positivist social scientists support the classical approach, stressing objectivity and neutrality, following the methods applied to the natural sciences; that is, constructing an hypothesis,
collecting and analyzing data, and finally, interpreting them (Hall 1975; Hall 1995). Advocates of naturalism shun this approach and prefer to study the social world in its natural state, without interference by the researcher (Hammersley and Atkinson 1983).

The questions of what is 'science' and what level of objectivity is necessary, or even, desirable, in the pursuit of social studies have been addressed by many researchers and philosophers. Proctor (1991, 10) explored neutrality as the hallmark of objectivity and traced the history of scientific thought and its development from Plato's Greece, to Bacon's England, to Weber's Germany to explain how it has become so-understood. He concluded that "...knowledge is no less objective (true or reliable) for being in the service of interests".

Hall (1995) describes much of the social science research that is done which is characterized by one of the various well-established experimental designs (such as comparison of case studies, anthropological or survey methods) as inadequate because it focusses on analysis, and thus, the problem formulation and knowledge creation lies with the persons initiating the research rather than with the community being studied. He provides a critique of the survey approach, along with Pilsworth and Ruddock (1975), because he sees it as an attempt to conform social science problems to the rigours of scientific testing. In essence, both rebuke the claim that only what is repeatable or replicable is 'valid'. Hall (1975, 24) stated that the myth of objectivity in social science research had been so well exposed that further justification for qualitative approaches was unnecessary. Instead, he built upon Paulo Freire's ideology described in Pedagogy of the Oppressed, and called for an alternative approach to adult education research which "...provides a more accurate reflection of social reality, assures more complete involvement of the community, is more closely linked to established principles of adult education and is more scientific". Thus was born participatory research. Many since Freire and Hall have adapted the principles of participatory research to fit different disciplines in the social sciences and to validate it as an alternative form of knowledge creation (Brown 1981; Brown and Tandon 1983; Maguire 1987; Gaventa 1988; Tandon 1988).
Hammersley and Atkinson (1983) outline two, often conflicting paradigms of the study of social science. They refer to these as positivism (championing quantitative approaches), and naturalism (claiming that ethnography is the only legitimate approach to social inquiry), and state that neither approach is satisfactory since both separate social science and the object being studied. Instead, these authors describe a preferred approach to studying social phenomena, one they refer to as a "reflexive" process. In this approach, researchers study a process, but since they cannot step outside it completely, they reflect on their participation, and the impact of their participation. Hammersley and Atkinson state that this reflection provides a valuable component in the study of social systems, and is sometimes overlooked in the more classical approaches to social science research.

The various bodies of social science literature provide us with justification for several different approaches to the social sciences, ranging from the rigorous methods more commonly applied in the natural sciences, to entirely qualitative techniques. From the literature surveyed, Hammersley and Atkinson (1983) provide the best rationale for using elements of both in any pursuit of discovery, including the social sciences. They are advocates of combining both positivist and naturalist approaches in the same study; making observations of the natural world, working them into a theoretical framework, and systematically testing them, even though this can never be absolutely conclusive. Maguire (1987) concurs with this approach because, while she rejects the underlying assumptions of positivist research, she advocates an alternative which still "recognizes technical, interpretive, and critical knowledge as legitimate forms of knowing about social reality".

For this study, I chose to use an amalgamation of some of the approaches discussed above. I used quantitative methods to provide a general overview of the situation to be studied and then delved more deeply, using a qualitative approach, into the specific knowledge base of one segment of society. Throughout this process, I reflected on my role in making these observations and the particular point of view that I contributed to the research.
Bias and the Scientific Method

Along with the challenges posed in fields of social science research methods, is the question of what relationship exists between the research to be conducted and the values held by the researcher. This topic is well-discussed in the adult education (Hall 1995), and participatory research literature. Bodeman (1978) outlines some of the problems most commonly faced by researchers who are involved with a group of people. He cites approaches which discourage natural involvement of the researcher for a variety of reasons. Much of the literature on participatory approaches, however, dispute this view, stating that the research to be done should provide a link from theory to praxis (Hall 1981), and that the researcher should be an agent of the change to be evoked. Since participatory research requires the researcher to be ideologically committed to social transformation (Brown and Tandon 1983), complete objectivity is practically impossible. Bodeman (1978) explains that participant-observers may share their biases in several ways: They can participate fully, freely, and self-critically; they can describe the facts in the context of their biographical position; and they can actively intervene by presenting options to a community which has been deprived of options and thus been divided and paralyzed. They can do this by returning findings to the community and by sharing them with others in a comparable predicament.

Even in natural science research, the researcher may introduce bias by selecting the types of research to be done and in the interpretation of results. It is acceptable then, to recognize one's bias and the roots of that bias, state it outright, and analyze the results critically while being cognizant of one's opinions or point of view throughout the study.

Researcher's Perspective

For this study, I chose to use two well-known techniques in social science research. The document analysis was conducted strictly on the submissions of the farmers in the immediate impact area to the proposed pulp mill. The focus on the farming communities was partly for scoping purposes, but I also assumed from the start, that farmers would have valuable information to contribute. As the study
progressed, it became necessary to attempt to determine whether others, especially those who served on
the Review Board, and the proponent, thought so as well. For this reason, I chose to use the telephone
interview. All of the interviews were unstructured, and although, I tried to ask the same questions of all
participants, I may have introduced some bias by the way I asked the different questions and in the order
that I asked them. However, my main goal was to solicit personal stories and opinions, and I was aware
of not leading the respondent in a certain direction. This was the most appropriate manner for conducting
these interviews because I was not only interested in the content of their answers, but also in assessing the
relative importance they attached to each of the issues we discussed.

The particular case study I chose for analysis also leads to some interesting reflections on my role
as a researcher. Prior to initiating work for this thesis, I was employed as a Community Affairs
Coordinator at Alberta Environment in Edmonton. My area of responsibility included the north-eastern
region of the province, which allowed me to be involved as a government community worker with the
communities associated with the AlPac proposal. The EIA process and the subsequent public review
carried on for several years, and as can be expected, relationships were forged and opinions developed.
While circumstances drew me closer to those members of the community who requested information from
me, and these were largely in opposition to the proposed project, I had not reached an opinion of whether
or not the mill should be built. My concern was that the public be given a forum to express its concerns.

In parts of the thesis, I provide information based on my experience with this project. Some of it
is from memory, and some is from notes I had made to myself during those years. Throughout the
process, I was impressed by how much knowledge was conveyed about so many subject areas. I have
always believed that public participation is an important component of the environmental decision-making
process. However, many of the observations I made while the communities struggled with so many of the
issues made me wonder what purpose public involvement serves. My decision to pursue this case for
graduate work arose from a need to see whether processes such as these, which take much in the way of
public resources (time, money, and energy), have any impact on the final decision. I wanted to pursue the
issue of local people's contribution of knowledge in relation to a case study I found interesting, and therefore, I chose the AlPac case. I believe the way I have set up the study minimizes the personal biases I may have developed as a result of my involvement with some of the communities and groups who presented at the hearings. It is the subject of local knowledge and its impact on the final decision that I explored for this work, and not whether the mill should or should not have been approved. It is because I believe that public participation is important, that I set out to see what indeed it does (or should) accomplish.

Methods To Be Used In This Thesis

The approach used in this thesis was designed to answer the following questions: First, what did local people say during the EIA Review Board Hearings that reflected the knowledge they possess; second, what did the Review Board hear them say, and third, what did the Review Board do with the information they obtained. I was also interested in the perceptions of local knowledge held by the various parties involved in the EIA process.

Two main methods were used in this study, document analysis and personal interviews.

Document Analysis

Given that I was interested in analyzing the content of a process that was completed several years before, the most appropriate method to use was that of document analysis. Both the written briefs submitted to the Board and the proceedings of the hearings at each location were important sources of information on the knowledge of the local people. The sheer volume of information available made it necessary to set priorities and define limits for the research to be done for this study. The proceedings constituted fifty-two volumes, totalling over 7000 pages. In addition, many presentations were submitted in writing only and were not part of these volumes. Limiting the analysis to the knowledge of the local
area farmers cut down the volume substantially. However, the amount of information was still too great to enable a complete analysis to be conducted within a reasonable time frame.

The long distance nature of the chosen case-study also posed some significant challenges. First, none of the necessary information was available at libraries in Vancouver. It became necessary to borrow relevant information directly from the Environmental Protection Library in Edmonton. Communication difficulties and a necessary reliance on the postal system added to the time required to conduct the analysis. Second, the research for this study was not funded and the financial constraints made it impractical to travel to Alberta to conduct the research there.

After consideration of all the constraints, I made the decision to analyze only the written briefs submitted to the Board. I recognize that this leaves out potentially-significant knowledge contributed during question and answer periods following the presentations, and during the discussions between the various parties involved at any given hearing. However, my personal recollection of the process is that most of the local area farmers who presented to the Board also submitted their presentations in writing. The analysis I conducted may not result in a complete account of the local knowledge of the area farmers, but I believe it encompasses the majority of the significant issues they presented and thus provides insight into the kinds of local knowledge that was contributed by local area farmers during this public hearing process. While the nature of local knowledge, public participation, and cultural traditions is largely oral, much of it is written down for the purpose of the public hearing. In his study of public participation, Parenteau (1988, vii) also focused on the written briefs, and stated that they "...are detailed and complete texts. Furthermore, they were written without constraints, free of the interruptions and digressions which the presence of other speakers produces at public hearings". While it would have been preferable in the present study to include details of the oral discussions, analysis of the written briefs provides an adequate record of most of the knowledge contributed by local area farmers.

The written briefs were analyzed and grouped according to location, the form of presentation (whether written only or oral), and whether they were submitted by a group or an individual. They were
also categorized by sector. The categories used were: proponent, farmer, aboriginal, government (territorial, federal, provincial, and municipal), business groups, political parties, interest groups (including, for example, environmentalists, fishers, trappers, union and labour, and recreation groups), and other. Each category was analyzed for number of presentations and for the number of pages per presentation. This was important, not only to give an indication of the task before the Review Board, but to speculate as to why certain groups made more, or lengthier, presentations.

**Examination of Written Submissions**

Examination of the written submissions focussed specifically on the presentations made by the farming community immediately adjacent to the mill. I hypothesized at the outset, that the farmers of this area possessed knowledge that would be particularly relevant to the review of the project. I also assumed that, as farmers who worked the land over many years, they would have some knowledge to contribute to the process that was unique to them. Their contributions, I hypothesized, would be significantly different from the scientist's knowledge or from that of the experts provided by the proponent or the government.

I analyzed submissions from the hearings at Prosperity, Grassland, and Athabasca, assuming that local farmers would make presentations when the Review Board travelled to their community. For the purposes of categorizing the knowledge contributed by the farming community during the hearing process, I considered Boothroyd (nd) and Richardson, Sherman and Gismondi (1993) and adapted these to the definition of local knowledge discussed in Chapter 2. I used three main categories for types of knowledge:

1. *experiential knowledge* - this included knowledge of the history of the area, one's family history, as well as the history of the development of the community. It also included knowledge of farming practices, such as inter-family farming and sharing of equipment, and one's own yield data, and horticultural information, such as knowledge of gardening practices and yields in the area;

2. *scientific and technical* - this refers to evidence in the presentation that presenters either had
prior scientific or technical knowledge that related to pulp mills and the pulping processes, soil classification, or global environmental issues, or had researched these topics and gathered the information themselves. Included in here is knowledge of the EIA process and evidence that presenters had read the document and/or conducted further research on their own; and

3. personal - this was the most broad category, and included knowledge of one's values, as revealed in the opinions about the pulp mill, aesthetics, family life, farming culture, and the safety and health of the environment; and knowledge of issues of concern to the presenter, such as agriculture, human health, and socio-economic and environmental issues.

Follow-Up Reports

Examining the reports that followed the hearings constituted an important part of the study, since it was through analyzing these that one could draw some conclusions about the usefulness of the knowledge contributed by the local farmers. The two documents that were reviewed were the Review Board's final report, and the Company's mitigated proposal. Reviewing the former gave an indication of the relative importance accorded local knowledge in the review process; examining the latter helped determine whether any of the knowledge provided by the local farming community was taken into account when the proposal was revised.

Interviews

This section consisted of following up on local knowledge via personal interviews. Members of the Review Board, Scientific Review Panel and a spokesperson for the Company were interviewed to gain a sense of the value of the local knowledge to these individuals and to attempt to determine whether it played a significant role in the environmental review process for this development. Interviews were requested with all eight members of the Review Board, the three members of the Scientific Panel, and with a representative of AlPac. One member of the Board had moved and I was unable to obtain a forwarding
address. Of the seven remaining possible interviewees, four responded to my initial request or follow-up phone call. Two of the three Panel members agreed to be interviewed, as did the vice president (pulp) of AlPac.

The University of British Columbia Ethics Review process was followed, and approval to conduct the interviews was given on September 25, 1995. Informal, unstructured interviews were held by telephone with each participant in December of 1995. Participants were notified by letter and provided with a consent form for signature. Interviews were audio-taped and transcripts were provided to the participants for editing before they were analyzed as data for this study. While individuals were assured of anonymity in the initial contact letters, each has subsequently authorized his identification in this thesis.

A set of guiding questions for the interviews were provided to participants to assist them in preparing for the interview. The sample questions can be found in Appendix B. The interviews were analyzed for content using Hammersley and Atkinson (1983).
CHAPTER 5
RESULTS AND ANALYSIS - THE HEARINGS

The Overview

In this chapter, I provide the results of the analysis I conducted on the submissions written by, and on behalf of, the local area farmers. Local people provided information to the Review Board in two ways - they made presentations themselves, and they hired consultants to make presentations of both a biophysical and socio-economic nature, on their behalf. In the former, they conveyed their knowledge to the members of the Review Board. This was knowledge based on their experience, their values, and their vision for the kind of community they wanted for themselves. It also became evident that they had done much research on their own and were, therefore, also able to provide some scientific and technical information. The presentations made by the consultants were largely technical, but were included in the analysis because they indicate issues of importance to the local citizens. Before presenting these results in detail, it is helpful to provide some background to the hearings by describing who formed the 'public', where the hearings took place, and the issues that emerged as concerns for the people in the different areas.

The 'Public' of Public Hearings

First, since these were, indeed, public hearings, it becomes necessary to define what is meant by 'public'. Are the politicians and government bureaucrats who made presentations to the Board, and were also reviewing the EIA as part of their job, considered 'public'? Are interest groups such as Greenpeace, who have essentially become professionals, and present at environmental hearings around the world, viewed in the same way as the local area citizens who may have never spoken in front of a large audience before? Are the presentations made by employees of AlPac considered to be public presentations?
Naturally, all are people, and therefore, are members of the general public. But who are public hearings specifically designed for? If these were the only kinds of public whose contributions were sought, it might prove to be more effective to have another mechanism to facilitate communication and negotiations; perhaps one that would not be as costly, or as confrontational as a public hearing. Rather, it seems that public hearings become necessary in order to obtain input from other factions of the public. Specifically, one can assume that the purpose of public hearings is primarily to provide a forum for the average citizen who would have no access to the process other than through his or her elected representative. This includes people who have concerns about the project, or feel they have some knowledge to contribute, but choose not to align themselves with an interest group, for whatever reason. It also includes the local area citizen whose concerns are more immediate, but not necessarily more important, than those who are more removed geographically from the development. Public hearings are possibly the only avenue open to local citizens, other than lobbying the government directly, to contribute information to those in an advisory or decision-making capacity. It is interesting to explore this dimension of the AlPac hearings to see who actually participated, where they came from, and what their concerns were.

A 'Snapshot' of the Public Hearings

In my work at Alberta Environment I often found that many developers initially resisted the idea of holding public hearings or even public meetings. They feared that opening a process up to the public in such a manner would provide a 'soap box' for those who oppose a project, and might fuel controversy that would otherwise not be expressed. But, as can be seen in Figure 2, government and proponent submissions together dominated the AlPac hearings. In fact, when the number of pages of submissions is taken into account, as shown in Figure 3, the proponent, by far, dominated these hearings. These figures serve to illustrate who, from the public, made presentations, and how much information they put forward during the hearings for review by the Board. While public hearings may be thought to be a forum primarily for anti-development groups to air their grievances, this study shows that the proponent and
governments made significant contributions as well, at least in quantitative terms.

Who Was the Public?

The submissions were coded according to sector of the presenter. I used nine different codes: proponent, political parties, Aboriginal, government, business, farmer, interest groups, Review Board, and other. In some cases, the category of the presenter was clear from the information they presented. In other cases, presenters identified themselves with one sector or another. For example, many of the presenters introduced themselves as farmers from the region, or as an employee from a government department. In the submissions where information of this kind was not stated outright, or was not clear, I
used the category of 'Other'.

The largest proportion of submissions was accorded to the category of 'Other'. These included submissions by anyone, anywhere in the Province (or elsewhere) who had an opinion on the project and chose to write in to the Review Board. Some presented their information at the hearings, others did not, but mailed in their submissions for consideration by the Review Board. The distinction was made in the analysis between those who mailed in a submission, and those who chose to participate in person. If we consider the members of the public who made presentations at the hearings, Figure 3 shows that the three groups who made the largest number of presentations were, in descending order, the different levels of government, interest groups, and the proponent. However, much communication already occurs among these groups outside of the hearing process. For instance, negotiations commonly take place between governments and the proponent before the government announces the approval-in-principle, and

Figure 3    Number of Pages of Written Submissions, Grouped by Category of Presenter
subsequent negotiations deal with the scope of the content of the EIA. Many of the larger interest groups often have direct access to communication with the politicians, and as such, would not require the public hearing forum to make their concerns known. However, many of the smaller interest groups seldom have direct access to government, and use the public hearing process to make themselves heard. It is during the public hearings that much of the mitigative process occurs. For example, undertakings and alterations to final company plans are agreed to by the company and are relayed to politicians through the recommendations of the Board even though they originated with the public. If these issues were brought directly to the Premier or to Cabinet by individuals or by smaller interest groups, they may be rejected out of hand. Put forward in public hearings, they have a chance to be accepted as legitimate by the decision-makers.

In the AlPac case, submissions made by Aboriginal groups, farmers, and business interests, occupied a relatively small percentage of the total number of presentations. These tended to be the more local people, so the fact that their numbers were relatively small could be just a reflection of the regional population in comparison to the provincial population.

It is also interesting to note the volume of information submitted to the Review Board, as is illustrated in Figure 3. We could assume that, the more material a group submitted as part of its presentation, the more time the Review Board would have to spend reviewing a particular group’s concerns, and this could influence their views on the matter. The illustration shows that the proponent submitted the largest amount of written material, much of it containing highly technical information. Submissions from local people tended to be shorter in length, and did not contain the same level of technical information.

Submissions from the public were made either by groups or by individuals, and these two categories were almost evenly split. Of the seven-hundred and fifty presentations, four-hundred and twenty-five were made by groups, three-hundred and twenty-four were made by individuals and one, which was submitted in written form only, was unidentified. Groups were considered to be more than one
person. In cases where husband and wife made a joint presentation, they were considered to be a group. Many of the submissions made by groups were made by one individual on behalf of the larger group. It was not clear in all cases whether the individual actually had the authority to speak for the group, or whether they just preferred to identify themselves as members of the particular group.

Figure 4 Number of Presentations, Grouped by Level of Government

Government and interest group submissions were further broken down into levels of government and types of interest group. This breakdown is illustrated in Figures 4 and 5. Different governments provided different types of information to the process. Many of the federal government presentations were made by technical experts in the field of fisheries and water quality. The provincial government also contributed technical information, but some of its presentations related to the political process of decision-making and the review process in general. Municipal governments were concerned about business opportunities and economic development and some of the downstream users such as the City of Fort
McMurray were deeply concerned about water quality. The government of the Northwest Territories, naturally, was very concerned about water quality and quality of life issues.

![Figure 5](image)

**Figure 5** Number of Presentations, Grouped by Category of Interest Group

Interest groups also differed in the type of information they contributed to the process. As shown in Figure 5, environmentalists made the highest number of submissions to the Review Board. However, the category of environmentalist was the very broad, including anyone who mentioned environmental issues as their main concern, and it would have been beneficial to have broken down the term further.

Friends of the Athabasca (FOTA) was an environmental group from the region, which was formed in August of 1988 in response to the forestry expansion taking place throughout the province. The Prosperity Environmental Association (PEA) was a local group, initiated specifically as a result of the AlPac proposal. Many of the members of these two groups also chose to present as individuals or as a family. The fact that they chose to align themselves with an environmental group as well suggests that they
expected it would carry more weight with the Board.

The reasons one could choose to align oneself with a particular group or another are many. In this case, it is possible that banding together people with the same goals increased the impact of the presentations. It was also easier to fit the guidelines the government had set for applying for intervenor funds. These funds were most often used to acquire the expertise of technical experts to present on behalf of the local environmental group. In one case, PEA hired a consultant to conduct a review of the proponent's site selection methodology. The advantages of banding together under the title of environmental interest group is obvious, but it also indicates where the value of the information to be contributed is thought to be by society in general. This will be discussed in more detail in the Conclusions section of this thesis.

Hearing Locations and Relevant Issues

The Review Board decided to hold hearings in twelve locations. The number of presentations at each location is shown in Figure 6. The highest number of submissions were mailed in to the Review Board office from all over the province as well as the rest of the country. But the majority of submissions presented at the hearings were presented at Prosperity, which was the community nearest to the proposed project site, and the one which had the most days assigned to it for hearings. Athabasca and Grassland, which are both in the region, were also highly-frequented locations. For those presenters who were from outside the area, the choice of location could have been a strategic decision, since anyone could present at any location and apply for reimbursement of travel funds. Intervenors may have thought that certain locations would be more relevant to the Review Board. Nevertheless, the evidence suggests that people chose to present at the hearing location closest to where they lived. This became apparent from reading the submissions; presenters usually identified themselves and stated where they were from and whether they had to travel to present at the hearings.
Members of the general public chose the communities of Prosperity and Athabasca, as well as Edmonton, to make their presentations. Edmonton served as the hub for most 'non-local' people's presentations. Fort McMurray was the site of the first hearing, and as such, had a high number of presentations from outside the area as well. Fort Smith in the Northwest Territories was the centre for presentations from north of the Alberta border. Besides Aboriginal issues dealt with at this site, presentations also related to Wood Buffalo National Park. The hearings at Lac La Biche, Fort Resolution, Fort Chipewyan, Wabasca-Desmarais, Janvier and Beaver Lake had mainly local presentations, and, except for Lac la Biche, dealt mainly with Aboriginal issues.
Written Submissions

In this section, I present the results of the analysis I conducted of the written submissions provided to the Review Board by residents of the Immediately Affected Area\(^9\) and the Affected Region\(^{10}\). I restricted the analysis to focus specifically on the submissions of the local area farmers. The submissions that were analyzed fall into two major categories:

(1) Presentations made by the local farmers themselves, and

(2) Presentations made by consultants on behalf of local farmers.

Consultants who were hired to make presentations on behalf of the local farmers were of two types: scientists and technical experts, such as geologists, engineers, mathematicians and computer modelling people; and, social scientists. The former group could possibly have made their analysis in isolation of the local people, although they had to have been hired to delve into an issue that was of significant concern to local citizens. The latter group was charged with providing a scientific analysis of social, as well as biophysical issues.

It is important to identify and classify the types of information provided by the public, both as they presented it themselves, and as was presented via a consultant. It is in the former that I expected to find the richness of local knowledge not attainable through other mechanisms, but the latter also provided an indication of issues that were of concern to the local people.

Presentations Made by the Local Farmers

Local farmers contributed to the hearings by making presentations and by being involved in the question and answer period that followed presentations. Thirty-seven of the submissions to the Review

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\(^9\) This term is defined by the Review Board as the area immediately surrounding the proposed mill site and up to ten kilometres away.

\(^{10}\) Defined by the Review Board as the area extending to include the communities of Athabasca to the west, Boyle to the south, Lac La Biche to the east, and Calling Lake and Wandering River to the north.

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Board came from local area farmers. Some families made more than one presentation and some made individual as well as group presentations. In the analysis which follows, references to local farmers' submissions are cited with the submitter's name included in parentheses; the full citation can be found in the References Cited section at the end of the thesis. It is important to note here that several families share the same last name, and some are quoted often. This is largely a function of the makeup of the community and that there were relatively few submissions to analyze.

The submissions of the local farmers were categorized according to the type of knowledge conveyed in the presentation. Three broad categories were used: experiential, scientific and technical, and personal knowledge. Much overlap between the categories occurs. For example, historical information and details of family farming practices were closely tied to knowledge of personal values and eventually, an opinion on whether the mill should be built. These overlaps illustrate the complex nature of studying people and their values and opinions. Nevertheless, a breakdown into broad categories allows for ease of analysis and provides a starting point for discussion.

Experiential Knowledge

The experiential knowledge conveyed in the presentations was diverse. Historical information was provided by many presenters; they explained that family farming had been very important in the development of the community. Most presenters introduced themselves by stating how long they had been farming in the area and described the type of farming in which they were engaged. Some families had farmed in the area for less than twenty years, but most spoke of second and third generation farming on the same land. Several families told of their ancestors homesteading the land in the late twenties and early thirties. For one family, both the husband and wife inherited land; they farmed one farm, and one of their sons farmed the other. Although the farms were separate, they shared labour and equipment. They had hopes of retiring and helping their son farm for as long as their health permitted. But as they told the Review Board, "[n]ow those plans are gone" (Zackkewich, A. and Zackkewich, S. 1989). In some cases,
splitting the family farming operations, which would result from road closures necessary for building the pulp mill, would end over half a century of tradition. For those who highlighted the family tradition on the land, the passing on of land to their children seemed very important. Relative newcomers to the area also told the Review Board how they had decided to make the area their home and intended to pass on the land to their children as well. For all of these people, the tradition was very strong, and they valued it and wanted to keep it that way.

Some of the local farmers fully supported the mill. Their reasons were varied, but many referred to the economy of the region. Although leaving their home to make room for the pulp mill brought them sorrow, the fact that, given the current economy, their children had to leave home to find jobs was also difficult (Stewart 1989). Given this alternative, they would rather have the pulp mill and the associated spin-off benefits.

The farmers in this area were mostly engaged in mixed farming operations, raising cattle, and growing a variety of grains, canola, hay, and forage seed, as well as vegetable gardens for home use. A typical rotation for grain crops consisted of two or three crops of wheat, then canola, oats or barley, then clover, grass or alfalfa, and then back to grain (Prosperity Environmental Association 1989). For those whose families had been farming for several generations, one statement in the EIA seemed to provoke much emotion. This was the statement that the mill would be built on Class 4 soil, which is interpreted as having severe limitations for agriculture. One farmer stated emphatically that this was "...inferring [this is] an underprivileged area with marginal farming operations. Those who have used proper land management techniques or adopted farming practices compatible with soil conditions and managed financial resources in a sound and business-like manner have done well" (Zachkewich, J. and Zachkewich, L. 1989). Another stated that in 54 years of farming, the community had never experienced severe crop failure, and was definitely not "a poverty-stricken" area (Zilinski and Zilinski 1989). Still another provided evidence of higher-than-average yields for wheat, barley, and canola (Cholach and Cholach 1989). Without a doubt, this was the one point that members of the community challenged most
dramatically, providing local knowledge as evidence to dispute scientific data presented by the proponent.

The argument of the local farmers showed that data derived from scientific, but generalized surveys are not always accurate for a specific locality. Consultation with local farmers would have provided the proponent with better, more localized knowledge, indicating that while the soil of the local area is not the easiest to farm, it has allowed those who have learned to adapt to derive their livelihood from it.

Scientific/Technical Knowledge

The knowledge of the local soils in the situation that was explained above, is an example of pertinent information that is accessible only through consultation with the local people. This kind of knowledge is gained through experience, and was thus classified as 'experiential' in this study, but it is also scientific knowledge, indicating that local people's knowledge can also enrich the scientific knowledge base of an impact assessment process.

The information in the presentations of the local people showed that many of the local people had knowledge of other scientific and technical issues. In their presentations, local farmers spoke of reading and critiquing the EIA. Some challenged the information that was provided; others criticized the process. Still others provided evidence that they had conducted research on their own, presenting information on pulping processes, water quality, and global environmental concerns.

Over and again, local farmers demonstrated that they had not only carefully read the EIA and attended many related public meetings, but they had read relevant related reports as well, and many felt confident enough to challenge the proponent on specific scientific and technical issues. From their own reviews of the EIA, as well as from further research they conducted, other issues of concern were identified by the local people. Most related to water quality and the associated pulping processes, effects of air emissions on farming operations and global environmental concerns such as the sustainability (or lack thereof) of such mega-projects.
One presenter explained, with firsthand experience, what it was like to live in a pulp mill town. He and his family had lived in Grande Prairie where the pulp mill is 11 miles downwind from the city and had experienced various degrees of foul smell depending on the weather patterns and the degree of pollution emitted at the time. He spoke of the water of the Wapiti River; how it was emerald green upstream of the mill and dirty, smelly and brown downstream of the mill (Zachkewich, E. and Zachkewich, E. 1989). He knew of the problems at the mill at Skookumchuk, which was operated by the parent company as the proposed mill, and that the reasons for the problems were unknown and were being studied. Another farmer had toured the Skookumchuk mill and observed that there were no farmers near it (Zilinski and Zilinski 1989) and wondered why this was the case. Still another submitted various documents to the Review Board, all relating to scientific issues; some were on climate changes in Alberta, others were on major forestry projects in the Province, and others provided information on recycled-paper distributors (Opryshko 1989b). One farmer whose land was going to be directly affected, stated at the open house meetings sponsored by the company, that the proponent had assured the local people that there would be minimal impact to the residents surrounding the mill. He challenged this claim by reminding the Review Board that four hundred loads of logs per day were going to be transported on the road adjacent to his property, and that the effluent line was to go through his land, thereby directly affecting his family (Zachkewich, J. and Zachkewich, L. 1989). He did not consider these issues to be 'minimal impact'.

These examples provide evidence that local people had much to contribute to the EIA process for the AlPac proposal. Their knowledge may not have been clearly scientific or technical, but their experience provided them with sufficient knowledge to challenge much of the scientific and technical information provided by the 'experts' in this process.

Local people also conveyed knowledge about the EIA process. They expressed their opinions about whether the process was adequate, or faulty and needed to be revised before the pulp mill was approved. One farmer stated that after reading the EIA, he had decided that AlPac demonstrated good faith (Bizon, R. 1989). Another said "...after making an effort to become more knowledgeable, I believe
the scientific know how and technology exists to safely provide for the construction of the mill" (Bizon, M. 1989). Still another felt that her questions had been satisfactorily answered and concluded "I have examined every side of the matter carefully, and have decided I would like to be part of it" (Sheremata 1989).

Others were not holding the process with such praise. One farmer summarized his concerns to the Review Board when he said that appearing in front of the board made him feel very degraded; that after working so hard he had to stand in front of a group of strangers and "beg them to save our family heritage, farm and livelihood" (Zachkewich, A. and Zachkewich, S. 1989). For those who had problems with the process, the issues were many: The fact that the EIA was called at the discretion of the Minister and there was no defined process to follow, that the scoping guidelines were not available until two months after they were requested; that forestry issues and matters of federal jurisdiction were excluded; that there were no baseline studies for the area on agriculture and human health; that the document was project-specific, did not address cumulative effects, and emphasized the benefits of the project; that intervenor funds were made available only after a long battle with the government and the proponent; that the site selection criteria were not made public, and that there was lack of sufficient time allotted to the public to adequately review documents and prepare briefs for the hearings (Opryshko 1989c; Zachkewich and Zachkewich 1989). In another brief, the presenter stated that the funds provided were inadequate to hire consultants to review the EIA, retain legal advice, and to offset personal expenses. He also felt that the funds should have been provided by the proponent, not the government, and that the allocation of funds should have been confirmed well in advance of the hearings (Opryshko 1989c). Further confusion arose about which documents constituted the EIA, as documents were constantly being updated, added to, and clarified during the hearings. Some of the presenters felt that they were contributing so much new information through the hearing process that they were actually 'doing' the EIA for the proponent (Opryshko 1989c). Throughout the hearings, the message was clear that the public felt there was a need for a clearly-outlined process to be in place, which would give them a significant voice in plans for development for their area.
Local people tended to focus on local concerns but showed concern for the global environment as well. Some presented knowledge of the local biophysical environment, while several presenters alluded to sustainability and global environmental issues. It became evident that this project was turning into a "jobs-versus-environment" predicament. One presenter clearly demonstrated this when he stated "[j]obs and profits at the expense of the environment is not acceptable" (Zilinski and Zilinski 1989). Another stated "[i]s the profit worth all this pain, this disagreement, this displacement and this division?" (Zachkewich, E. 1989). Concerns over the sustainability of the environment were evident in several submissions. One presenter stated "[w]e cannot act as if we are the last generation" (Aleksiuk 1989).

The validity and reliability of scientific information provided in the EIA was questioned repeatedly by the local people. Many had heard conflicting information coming from scientists on both sides of the issue. For example, AlPac tended to minimize the potential impacts on human health. But, briefs made by the Alberta Medical Association cautioned about possible effects on human health. With all the conflicting information, one presenter stated "...the Board must decide what is right for us...who is right and for what reasons" (Zachkewich, E. and Zachkewich, E. 1989). He went on further to say "The mill may not be as bad as some people say, but then again it might not be as good as some others say either".

These comments provided an illustration of the enormous task faced by the Review Board. While scientific information may be seen by some as absolute, local people challenged this by providing examples where scientists gave conflicting scientific evidence, or for some of the more local examples provided, cases where the information was clearly misinterpreted by the scientists. It became clear then, that such decisions could not be based on science alone. Technical facts and evidence provided only pieces of a much larger situation; all the pieces needed to be considered by the Review Board in coming up with its recommendations to the government. If science (and scientists) alone could not provide all the answers, the Board would need to consider other kinds of information in its deliberations. The personal knowledge provided by local citizens could have been one area where they turned to find the much needed additional information.
Personal Knowledge

Much personal knowledge was presented during the hearings by the local farming public. Many presenters spoke of their knowledge of the review process and the effect it had on their lives, of the issues of concern to their families, and finally, of their personal opinion as to whether the mill should be built.

For most of the farmers of the area, presenting briefs to a Board such as this one, was a foreign process. One presenter explained how it had been a very demanding and costly process to him and his family. He had personally participated in one-hundred and fifty meetings with concerned residents, the proponent, several federal and provincial politicians and civil servants, legal representatives, and the media; he had spent much of his time on letter-writing, telephoning and preparing briefs for the hearings; and he had been forced to participate in initiatives scheduled at the worst time of year for farmers. All this had an effect on his personal life, being a cause of frustration and depression, and eventually, a strain on his marriage (Zachkewich, E. and Zachkewich, E. 1989). Another presenter stated how he and his family enjoyed, and wanted to remain living where they were, and how more recently, they had become scared, moody and angry (Aleksiuk 1989). Yet another presenter explained how he felt that his life had been in limbo over the past year and how this had caused him uncertainty and stress. These issues were very personal, but one by one, local farmers came forward to tell the Review Board, in a very public manner, how this project was already affecting their lives.

There were several areas of concern highlighted by presenters from the local area. Most notably, effects on agriculture and human health, and the lack of information on how pulp mill emissions affect these, were significant to many of the local people. Many stated that they valued a clean environment, and a safe, quiet family life and community, and expressed fear that this proposal for a pulp mill in their community threatened what they valued. Many were concerned that the base line knowledge of how pulp mills potentially affect agriculture was very scant. This was largely because very few pulp mills in the world are located in intensive agricultural areas. The lack of scientific knowledge surrounding the kraft process and the unknown long-term effects of the roughly seven hundred chemicals still to be identified
was also of great concern (Zachkewich, E. and Zachkewich, E. 1989). Other agricultural concerns related to possible contamination of water supplies, and the long-term effects of sulphur dioxide emissions on the soil and crops. One presenter stated that there would always be a fear that the vegetables from their garden would be contaminated, or that the cows would be eating contaminated grass, until it could be proven otherwise (Zilinski and Zilinski 1989).

Many of the farmers also had issues of concern that related to human health. They expressed uncertainty about the potential effects of air and noise pollution, of the soil degradation and the subsequent loss of food value, and of the increased dust levels the pulp mill might cause, and whether these would result in an increase in respiratory illnesses. They mentioned too, the increased stress caused by the uncertainty of the situation and were concerned how the stress would affect their health.

Throughout the briefs presented by the local farmers, it became clear that most valued the kind of lifestyle they had become accustomed to, with clean air and clean water, and a quiet peaceful community. In his presentation, Emil Zachkewich (1989) stated that the "attraction [to this place was] peaceful serenity, natural scenic beauty and partial isolation" and that the area stood to lose its natural appeal. Another presenter said that "....clean air and clean water is most important for me and my children....the day of questioning whether the water, or air we are breathing is harming in any way is the day our lifestyle will be gone" (Zachkewich, J. and Zachkewich, L. 1989). This same presenter continued "....We didn't option our land because we don't want to move....you cannot put a dollar value on happiness. But unfortunately, we cannot stay by this development and raise our family". The desire to keep things 'as is' and the faith that the Board would make the 'right decision' was illustrated in one of the briefs when the speaker said "I want my grandchildren to eat fish from the rivers and drink the water from our streams" (Aleksiuk 1989). These briefs highlighted the things that many in this community valued highly. Although these values are immeasurable, they are a reflection of what the community stood to lose with such a project being sited in their community.

There was no question that purchasing the land from some residents and building a pulp mill in the
middle of an established agricultural community would alter the fabric of that community as it was once known. The fact that some of the residents publicly expressed their opinion on whether the mill should be built on the proposed site or not, brought about a division in the community. Those who publicly supported the mill cited a need to diversify the economy (Sheremata 1989; Stewart 1989), a need to utilize natural resources for human benefit, provided this could be done wisely and safely (Bizon, R. 1989; Shymoniak 1989), and a trust in scientific knowledge and standards (Bizon, M. 1989). One presenter summarized it this way: "...if we allow hysteria to rule over factual scientific and technical knowledge, then we are sending a message loud and clear to the world's investment community" (Bizon, M. 1989).

Those who opposed the mill in the proposed location, cited the erosion of environmental and community values as the main reasons for their concern. The fact that this proposal, and the ensuing process, had divided the residents of this community, was a concern for many local presenters. One woman summarized these feelings succinctly when she said "[w]hen the decision is made, hopefully the community will be able to resolve [their] differences and mend relationships" (Zachkewich, J. and Zachkewich, L. 1989).

Presentations Made by Consultants

Several local people applied to the government for funds, and were subsequently awarded some monies, to hire consultants to either review the EIA on their behalf, or to provide information that was deemed to be missing from the proponent's document. Although there was wide criticism over the process the government used to grant these funds, making money available to hire consultants was regarded as a necessity for this review process, because it would 'even the playing field'. That is, both the local citizens and the proponent would be able to bring their own 'experts' who would then debate the merits and the drawbacks of the project.
Biophysical Information

Local people commissioned consultants to look into several subject areas in detail, and review the biophysical information provided by the proponent. Specific subject areas that were analyzed included the geology and hydrogeology of the area, the potential for deepwell injection of toxic waste (Kvill 1989b), an evaluation of air quality issues (Caton 1989), and an assessment of the area's soil sensitivity to acidification (Heath and Emerson 1989). Some of the information presented by these consultants was in conflict with that provided by the consultants hired by the proponent. Some presenters had hoped to use scientific information to justify their opinion either for or against the project. For example, in one submission commissioned on the surficial geology of the AlPac mill site, the author wrote "I contend that good science should provide the context within which political decisions are made...." (Kvill 1989a). This same author concluded that the hydrogeological component that AlPac provided was "seriously flawed" and that in the surficial geology section of the EIA, "...interpretations were made and conclusions reached which are not supported by the evidence presented." With all the conflicting information being presented, even from within the scientific community, it became clear that this decision could not rest only on scientific information of biophysical issues.

Socio-Economic Information

Consultants were also retained to review the EIA from a socio-economic perspective. Much of this information was obtained from the local people but presented by the consultant. Social scientists provided their assessment of the EIA using social science principles, and concluded that there were numerous flaws. One submission reviewed the site selection methodology used by AlPac and compared it to previous methods used successfully by industry. The study found that "[t]he weighting assigned by Alberta-Pacific to directions apparently received from the Government of Alberta to stimulate the local economy of the Athabasca-Lac La Biche region appears to have significantly influenced the selection of the study region boundaries." The study further stated that non-technical concerns such as odour and aesthetic
impacts seemed to be considered in relation to urban impacts, which skewed the results of the site selection study towards a rural location (Dominion Ecological Consulting Ltd. 1989). This submission summarized local agricultural concerns which included the cumulative effects of displacing agricultural land in the province, fragmenting family farm operations, air and water concerns and the resulting potential impacts on human health and agricultural productivity, and increased noise and traffic levels. These authors concluded that if local concerns had been properly addressed, there would have been a higher probability that the proposal would have been better understood and accepted by the local public. A second study conducted by a consultant examined the socio-economic component of the EIA and concluded that many questions had been left unanswered, ergo, the document had been "long on promises but short on commitments" (Salomaa 1989).

Much of the information provided by the consultants, especially that which pertained to socio-economic concerns, came from the local people. It is unclear at this stage whether these presentations had a greater impact on the Review Board than the presentations made by the local farmers. This issue was explored in the interviews with the Board members, and will be discussed in the next chapter.

The preceding sections clearly show that local farmers possess knowledge that would be valuable to EIA practitioners and to decision-makers. In the AlPac EIA public hearings, this knowledge was presented both by the farmers themselves and by consultants. What remains to be seen is what was done with this information, and whether it was considered valuable by the Review Board and by the proponent. To explore this component of the study, the reports issued as a follow-up to the hearings were analyzed, and several key people were interviewed.
CHAPTER 6

RESULTS AND ANALYSIS - THE FOLLOW-UP

This chapter deals with the issue of what was done with what was said during the EIA Review Board Hearings. Specifically, it looks at what happened to the knowledge provided by the local area farmers, whether their issues were heard by the Review Board and the proponent, and whether this was reflected in the reports that followed the completion of the hearings. I reviewed the Company’s mitigated proposal and the Review Board’s final report to assess whether the local knowledge of the farmers was incorporated into these documents. Additional information on the value and usefulness of local knowledge in the EIA process was provided through interviews with members of the Review Board and the Scientific Review Panel, as well as the proponent. The results of the analysis of the follow-up documents and the interviews are presented in this chapter.

The Mitigated Proposal

Several months following the hearings, AlPac submitted a mitigated proposal to the provincial Department of Environment for review, entitled Mitigative Response to Concerns Regarding Chlorinated Organic Compounds. While most of the processes proposed for the mill remained unchanged in the revised proposal, AlPac proposed revisions to the original fibreline and the associated chemical systems which would result in a reduction in the discharge of chlorinated organic compounds into the river (Alberta-Pacific Scientific Review Panel 1990). This revised proposal outlined AlPac’s commitment to not using chlorine gas for bleaching purposes; the equipment used for chlorine bleaching would be removed from the site and the bleach plant would run with 100% chlorine dioxide substitution at all times (Gerry Fenner, telephone interview, 11 December, 1995). Two related changes were involved in the revised bleaching process: Hydrogen peroxide was introduced in the oxygen-reinforced extraction stage and the
temperature and pressure were increased; and an additional chlorine dioxide brightening stage was added (Alberta-Pacific Scientific Review Panel 1990).

The evidence suggests that it was public pressure that led AlPac to alter the bleaching process in the mill (Richardson, Sherman and Gismondi 1993). The title of the revised document implies a response to public concern; however, this is not explicitly stated. We can assume this was the case because in the months immediately preceding the hearings, the Company did not attempt to make these changes. Only after the hearings, and the subsequent recommendation of the Board that the mill not proceed, did the company alter its proposal. It is not readily apparent by analyzing this document whether the mitigated proposal was a response to public concern or to scientific expert's concern, therefore, it became necessary to interview the proponent to discuss this issue.

**The Review Board's Report**

The Review Board’s report, entitled *The Proposed Alberta-Pacific Pulp Mill: Report of the EIA Review Board* was released to the public on March 2, 1990 in Athabasca. The final recommendation of the Board was that the mill not be approved until further scientific studies were conducted on the river systems to determine if the mill could proceed "without serious hazard to life in the river and for downstream users". The Board stated that the major reason for this recommendation was the limited data available on the potential cumulative effects of the chlorinated organic compounds in the effluent which would be discharged into the Athabasca River. It went on to recommend that specific studies should be conducted on the river systems, and that these studies should be managed by "an intergovernmental committee with representation from all stakeholders". The Board also stated that other environmental impacts could be satisfactorily mitigated if proper conditions were applied, and recommended that a further review of the proposed site should be made "to determine if there is a superior one in a less populated area".

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Careful examination of the wording in this summary would lead the reader to believe that the information that most influenced the Board in making its recommendations was the scientific and technical information presented at the hearings. It was the potential effects on the biophysical environment and the resulting impacts on species health and human lifestyle that seemed to carry the most weight in the decision of the Board. The concern with dioxins and furans related to fish health and the subsequent impacts on the humans who ate the fish. These chemicals also potentially affected the loading capacity of the river, and thus, the health of the environment. Whether the decision of the Board reflects a higher importance being assigned to the non-human over the human environment, or whether it is related to society's value of scientific over local knowledge is worth further exploration.

In its report, the Board seemed to highlight scientific and technical concerns as the main reasons for its recommendation that the pulp mill not be allowed to proceed as proposed. The effects of the mill effluent on the Athabasca River, and topics such as chlorinated compounds, dissolved oxygen, fish tainting, toxicity, bioaccumulation, persistence of toxic compounds and other scientific terms and processes were thoroughly detailed and explained. Other matters relating to navigable waters, global warming, effects on the National Park, endangered species, etc. are also thoroughly discussed. The potential effects of the mill and of timber harvesting on Aboriginal Peoples are also highlighted and examined. Much of the concern expressed by the Board related to the biophysical environment, its health, and the potential impacts on the downstream communities.

The Review Board's report also addresses many social issues and the potential effects of the pulp mill on the communities surrounding the mill site. It deals with the effectiveness of the responses to citizen's concerns by AlPac and the various governments, and discusses the effectiveness of the EIA process. An entire chapter is devoted to local concerns, and social and economic issues. In that chapter, a range of topics of importance to the local community are discussed, including such issues as site selection, aesthetics, and the Pine Sands Natural Area, among others. It does seem, however, that a lower priority was accorded to the social concerns of the local people than the scientific and technical concerns of the
general public. This is demonstrated in two ways. First, by the order in which the issues are discussed, and by the kind of language used. Issues of a scientific nature are always mentioned first in the report, and the strong language the Board uses is reserved for science-related concerns. For example, the reason for their recommendation is the scientific uncertainty of the potential effects of the mill's effluent on the environment. Social issues were more casually mentioned as an additional concern, and not 'the' reason for recommending the mill not be built at that particular time.

The Board recognized several non-technical issues that were of concern to the general public. There was special attention provided to the local community's concerns. With respect to these, the Board concluded that:

...the site selection process utilized by Alberta-Pacific did not sufficiently consider the extra environmental and social problems which would occur because of locating the mill in an existing agricultural community. Although the development costs of a more remote site would be greater, the Review Board believes a more detailed assessment of the proposed site, versus an appropriate alternative, should be conducted before approval is given (Alberta-Pacific Environmental Impact Assessment Review Board 1990, 87.

It seems that the Board was sensitive to the issues of the local community, but its recommendation was for further studies; it stopped short of saying that these studies too, should be completed before the mill was built on the proposed site. Although the Board implied in various sections of its report that an alternative site would be preferable, it did not state outright that this type of development was not appropriate for an agricultural community.

The analysis of the Review Board’s report suggests that although the knowledge of local farmers was considered by the Board, it was apparently of secondary importance. This tentative conclusion was explored further by interviewing individual members of the Review Board.

Analysis of Interviews

Four of the eight members of the Review Board agreed to be interviewed. In addition, interviews were held with a representative of AlPac and two members of the Scientific Review Panel. All of the
interviews were conducted by telephone between December 8 and 21, 1995 and were audio taped. Transcripts were sent back to participants for editing and approval.

Going into the interviews, I had two specific goals - to have a degree of comfort with the interviewees so that a natural-flowing conversation could ensue, and to have answers to specific questions regarding their opinions on the value and impact of local knowledge as a part of the public hearing process.

I began each interview by describing my project and the goal and objectives I had set out, but then left the direction of the responses open to the interviewee. While I asked specific questions throughout the interview (see Appendix B), I hoped to minimize interruptions in the flow of conversation with questions that did not seem related to what had just been said. I hoped that through the exchange of speech, we could build a richness in the conversation that would not be attainable through a direct question and answer exchange. Although I needed answers to specific questions, I also hoped to elicit personal stories and experiences from each of the respondents. I think that to a great extent this was accomplished in each of the interviews, and I will elaborate on this in my reflections of the interviews in the sections below.

Three main issues surrounding local knowledge emerged from holding the seven interviews. These centred around the definition of local knowledge, the validation of local knowledge, and the role that it does and should play in an environmental review. Each member of the Review Board, as well as the proponent, responded with an unequivocal 'yes' when asked whether he felt that local knowledge was taken into consideration during the review process. Further questioning led to the discovery that not only did each have a different definition of local knowledge, but also a very different perspective on the value of the information provided by the local public. They also held strong opinions on the ways which local knowledge should be incorporated into the review process. Major findings can be divided along the roles played by each interviewee. For this purpose, I will analyze the interviews in three separate sections, beginning with those of the Review Board, then the Proponent, and finally, the Scientific Review Panel.
Interviews with the Review Board

Of the four Board members who agreed to be interviewed, two were from the academic community and considered experts in their fields: Bill Ross, from the University of Calgary, is a professor in the Faculty of Environmental Design, and has been a member of several FEARO panels. His major areas of interest include the EIA and public hearings processes (Alberta-Pacific Environmental Impact Assessment Review Board 1990). David Schindler is an environmental scientist and Killam Professor in the Department of Zoology at the University of Alberta (Alberta-Pacific Environmental Impact Assessment Review Board 1990). His area of expertise is water science in general, and he has headed several committees on ecology and the biosphere (Alberta-Pacific Environmental Impact Assessment Review Board 1990). Both members were federal appointees to the AlPac EIA Review Board. Gerry DeSorcy acted as Chair of the Board. His experience stemmed mainly from the fact that, for many years, and at the time of the AlPac review, he was also the Chair of the Energy Resources Conservation Board (Alberta-Pacific Environmental Impact Assessment Review Board 1990). His was a joint appointment by both provincial and federal governments. Ron Epp was one of the three local community members appointed by the Provincial government. He is a pilot who has lived in the County of Athabasca and nearby Lac La Biche for over twenty years (Alberta-Pacific Environmental Impact Assessment Review Board 1990).

The varied background of these individuals emerged as a significant factor in the development of their opinions toward local knowledge. Interviewing all eight Board members would have been preferable, as it would have been possible to better understand the range of values that existed among all of the individuals. It is especially unfortunate that the two Aboriginal members were not interviewed, since one could assume that they would probably be more inclined to place a high value on traditional, or local, forms of knowledge. The two remaining members who were not interviewed were residents of the region and their values and opinions too, would likely have been significantly different than those of the academics and professionals who were interviewed. They may have been more sympathetic to local issues...
and concerns, although this was not necessarily the case.

It is important to note that even with the variety of backgrounds of the members, the Board reached consensus on the major issues and all of the members signed the report. However, the views and opinions of the four individuals who were interviewed were extremely varied and sometimes, even contradictory. Therefore, in the analysis of the interviews, it became important to explore separately each member's views toward local knowledge, its definition, value, and role it should play in such review processes.

Definition of Local Knowledge

The term local knowledge was used in this study to refer to the knowledge of the local people. During the interviews with the members of the Review Board, it became evident that the word 'local' was defined differently by each member. The clearest and most precise definition of local was provided by the Chair of the Board. He stated:

I define local basically as those who live in the immediate region who would be affected by the plant, by its appearance, by its emissions, or by the major traffic related to that plant, or those who in a similar manner would be affected by operations incidental to that plant....So, for me, locals have a connotation of 'direct'....the Native Bands in the areas where the forest harvesting was to occur also fit into that category.

This was the closest definition to the one I used for the purposes of this study, although I had a further restriction to focus on the knowledge provided specifically by farmers and, therefore, did not include the 'local' people in the larger area of the forest management agreement (FMA). In subsequent discussions, DeSorcy easily maintained the focus on the immediate impact area farmers as the 'local' residents. In the following statement, he refers to his background with the ERCB to justify his definition:

...twenty-odd years ago, the Board where I used to work, the Conservation Board, went to the Government and said 'change our legislation and provide for cost or at least some financial support to local intervenors'. And if you look at the legislation, you'll see that it's clearly only local intervenors. And it's because we saw a great distinction between the people you're talking about, the local intervenors, and others, who have a right to be there, have a right to their say, but can't make the same contribution that the locals can, and aren't affected in the same way.
To the one environmental scientist on the Board, 'local' had a different connotation. To him, this referred to all the downstream communities who derive their livelihood from the river system and from the river basin. Schindler made several statements that indicated his primary focus was the river, and to this end, the local knowledge he found most useful was that which pertained to the river system:

There were a couple of important things that we got from local knowledge. Probably the most important one was knowledge of what fish were in the river and, to some degree, where they were in the river, which was still pretty unsatisfactory. But there was no professional knowledge; that's all we got, was local knowledge.

With this statement, he attributed significance to local knowledge and its role in possibly filling the gaps left by scientific knowledge, but it was not clear, however, what he meant here by 'local'. It is possible that he could have been referring to the local area farmers who also fished the river, but further in the discussion, he mentioned a scrap book provided by a 'local' resident that showed the species of fish that he had caught in certain places on the river. This testimony was provided by the mayor of Lac La Biche, who was not residing in the immediate-impact area. So, while this presenter was able to provide non-scientific knowledge that was of significance to Schindler, and was a local resource user, he was not a 'local', as defined by this study.

During the interview with Epp, he did not define who the local people were outright, but he referred to residents of the Athabasca region as being locals. This is evidenced in the following statement:

And for us that were locally here, we were quite frustrated having people coming from Calgary and who knows where else, Rocky Mountain House, coming here and trying to say why the mill should or shouldn't be here. You know, we're big enough, we can take care of ourselves.

He was clearly not a resident of the immediate impact area, so when he said 'us that were locally here', it is assumed that he is referring to the Athabasca region.

During most of the discussion with Ross, he was clear about local referring to the immediate-impact area farmers. But as in other interviews, sometimes the distinction was clear, many times it was not. This ambiguity was evident throughout most of the interviews, and attempts at clarification were not always successful; most respondents seemed to, at least some of the time, use 'local' to refer to the general
public. It is not surprising, then, that with these diverse definitions of the word local that, during the interviews, subsequent discussions of local knowledge were extremely varied.

All of the Board members interviewed acknowledged that local farmers were able to convey knowledge about their personal situations as well as state their opinions about the project. Some of the interviewees also made reference to the importance of the knowledge local people can provide about the biophysical environment. DeSorcy, for example, found this kind of knowledge to be useful because, as he stated, "local people can describe the impacts they expect based on their knowledge of the local terrain". Later he added: "[t]hey're there year after year; they see how the fogs behave, they see where they sit. They know where the winds come from....or what they feel in that regard". Ross recalled the case where locals challenged expert opinion that the land they were farming was classified as 'marginal'. They did this by providing yield data from their own records which proved the contrary. In the following statement, he demonstrates an acknowledgement that local people can indeed provide pertinent technical information:

…the Bill Ross inference is that the local farmers who know their land are right, and the people who did the work on the EIA were generalizing, and in this particular detail, are wrong. It was not a substantially important issue, although it did lead us in part, to the conclusion that the site should be revisited. And that's an example where I believe today, in 1995, six years later, that the local farmers had the right local information and that the specialists who did the EIA document were wrong. Not a big deal, but that's a classic example of where the local people know the local situation very well.

When the same question was asked of Schindler, he recalled that there were many 'concerns' expressed by the local farmers, but he could not remember whether they provided any technical information. He stated "I don't recall any specific concerns or information about agriculture, certainly no technical information".

Throughout the interviews, terms such as 'scientific', 'technical', 'expert', and 'professional' were used interchangeably. Generally these terms were used to refer to issues of a technical nature, such as chlorinated organic compounds, dissolved oxygen, and species toxicity. In some cases, it also referred to socio-economic studies. Most often, it referred to the knowledge expressed in presentations by those who are professionals in the subject field.

In some instances in all interviews, the term local knowledge became synonymous with non-
professional knowledge, or that information provided by non-experts; sometimes it became confused with
the knowledge provided by environmental interest groups, other times it was associated with the
presentations of any individual or group in the province who opposed the mill. This required redirection
of almost each question to the immediate-area farmers. There is reason to believe this difficulty arose as
a result not only of the varying definitions used by the respondents, but for a number of other factors as
well. For example, the number of local area farmers was minute when compared to the number of
concerned citizens who made presentations to the Board in all twelve communities. Especially because
these interviews were held six years after the hearings took place, what probably remains as highlights in
people's minds are the presentations of the general public, rather than the concerns of a few area farmers.
Although area farmers were concerned about general environmental issues too, their primary focus was
the siting issue and how that would affect their lifestyle. The technical issues, however, received the
attention of many groups, and of the public in general, and generated more controversy. This probably
contributed to making them more memorable.

All Board members interviewed stated that the primary matters for the Board to consider were the
organochlorine compounds in the effluent, and other related scientific concerns. Schindler explained
during his interview that for him, the siting issue was secondary, or a side issue. From the various
interviews, it seems that the organochlorine issue emerged as the primary issue because many of the public
presentations identified the issue as a concern. If that was the case, there was no way that the siting of the
mill could have become the major issue, because it was a primary concern to relatively few people.

The examples mentioned above clearly illustrate that the terms 'local' and 'local knowledge' are
ambiguous. Each member of the Board who was interviewed had different definitions for these terms, and
subsequently assigned different levels of significance to local knowledge. For example, for those whom
'local' meant the immediately-adjacent community, local knowledge was very important. For others who
used the word 'local' to refer to large interest groups or province-wide environmental groups, local
knowledge did not seem to be very important. The loose use of the word 'local' is a significant issue
because the truly local issues may become undervalued in the final analysis of the assessment of impacts. This could result in not enough attention being paid to local knowledge, and local issues, when the matters are being reviewed by the decision-makers.

Value of Local Knowledge

After exploring the different definitions for local knowledge, it became important to examine the value that each of the respondents attributed to this knowledge during the review process. Once again, opinions varied widely; some members found local knowledge to be virtually insignificant, others thought it very valuable\textsuperscript{11}. The latter cited such reasons as: Local knowledge tends to provide additional information to that which is gathered by scientific 'experts'; it provides an emphasis for some concerns that are raised by the general public; and it can have a more profound impact on the Board members because of the immediacy of the concerns. This last reason was a function of how the individual Board members interpreted their mandate as set by the terms of reference for the review.

Ross found the value in local farmers' presentations to be that they described potential impacts of the mill; local people can, and did, describe the impacts on their social life, on the land, and the concerns they had about the project, using first-hand knowledge. DeSorcy concurred with this, adding that locals were able to provide their factual history from a unique vantage point - that of direct involvement. Both of these respondents ascribed value to this local knowledge, but each felt that it had to be somehow substantiated or verified. Ross' perspective is best captured in the following exchange:

EC: Do you see any problems with including local knowledge?
BR: I'm tempted to answer with two letters - NO. But the reality is that what one needs to do is to have the same regard for local knowledge that one has for other knowledge. So that when information comes to me, as a Board member, about topic x, I like to verify that information. I like to convince myself that the information is fundamentally correct....that's exactly the same as I treat the scientific and technical experts who told us in the EIA document....And so, I treat all inputs the same. I want confirmation. And when I get confirmation from a wide variety of sources that are credible on the matter,

\textsuperscript{11} Some interviewees made a distinction between the terms 'useful' and 'valuable'. For the purposes of this thesis, there was no differentiation between these two terms, and both were used interchangeably throughout the analysis.
then I'm happy that I obtained good information, and I can make a decision based on that. And so, do I see problems with local knowledge? Yes. But I see the same problem with non-local knowledge, or scientific and technical knowledge.

Ross quite clearly accords local knowledge the same value as scientific knowledge. He seeks confirmation for both types of information in much the same manner. DeSorcy valued local knowledge as a 'first step' to stating the facts. He strongly supported a second part to local presentations, in which local knowledge would be backed up with technical information.

Epp referred to the local presentations as informative, that is, when farmers discussed their own situations and farming operations. Later in the interview, however, he stated that these presentations did not provide him with much knowledge that he wasn't aware of before, especially since he was involved in farming as well. He described the personal knowledge in the presentations as "not useful, but interesting". While he was not ready to say this information was valuable, he made a point of saying he did not want to minimize the presentations of the local farmers; he thought there should be some opportunity to express information of this kind.

For Schindler, the non-scientific information of the local farmers, while not providing specific useful information, did have a valuable contribution as is illustrated in the following statement:

I think it was a useful sort of underpinning of the whole thing. Basically, if people value their history and want to maintain something of that rather than change the whole tone of the region, the river system, etc. and in the case of Native people, their lifestyle, I think I, and I think it's fair to say and other members of the Panel, respected that. We certainly got a very strong impression that this was the case.

It was unanimous among the Board members interviewed that the value of local presentations was primarily to identify issues of concern. As Ross stated "...raising it as a concern forced us to deal with the matter through technical expertise and to resolve it as we did". The Board ended up soliciting much of the expert testimony that was heard at the hearings. Schindler explained that the reason it was solicited was the extreme public concern, and stated emphatically that "...to that degree, the public concern drove the expert testimony that we got". DeSorcy concurred with these statements, noting that the local farmers' concern...
presentations were useful because they identified concerns of people from a unique viewpoint.

Another reason that local presentations were valuable to this Board was that they provided information on subject areas that were different than those raised by the general public. For example, many people throughout the entire hearings area raised the chlorinated organic compounds as an issue of concern. Some of the local people did as well, but they also provided information on other issues, and their own situations. For example, Ross recalled that the preservation of the Pine Sands Natural Area was an issue that was highly valued by the local people. He stated:

...the natural area. That was one issue that by and large I think we would have dismissed as being, not trivial, but not terribly important. Except that the local people really made it clear that it was important to them and that it was really quite highly valued. The good news is that in the preparation of the EIS it was also identified, and there was some treatment of it by the proponent. But the high value of the local area was something that certainly came out from the local people.

Local knowledge was also valuable because it emphasized particular issues of concern raised by the general public. This emphasis led to a certain legitimacy being accorded to those issues. For instance, the site chosen for the mill was identified as a significant issue by many public presenters. Schindler recalled that the Board also identified reasons why the site was not a very efficient choice. For example, he said, the logs had to be transported from the south and western corner of the FMA, and it was a "pretty poor site in terms of oxygen concentrations in the river". If these reasons were not sufficient to turn the siting issue into a major concern, local people provided their own information which highlighted the significance of the choice of site.

When referring to the siting issue, Schindler added "... none of those [reasons] were based on public concerns. They were all based on professional presentations". Ross, on the other hand, stated that essentially all of the information the Board received on this issue came from local people. The fact that these two interviewees contradicted each other illustrates the different perspectives that different members bring to a Board such as this one. It would seem from their responses that local information was more highly valued by Ross. Schindler, however, periodically made assertions that he had a high regard for public presentations, although he did not single out the local area farmers. Toward the end of his
interview, he made a point of adding the following statement:

...I don't want what I'm saying to downplay the public importance. If there had not been big public concern, they would've just gone ahead and built that mill without any difficulty at all....Again, I don't think that their decision needs to rise and fall on science. In a lot of these issues, science doesn't take us very far. But, I think we should know how far it will take us and decide on the basis of information available whether they want to suppress their concerns and endorse something like this mill or any other development, or whether despite the best information there is, there's still concern.

It is unclear how far science could have been applied to the decision to be made in this case. Different members of the Board valued scientific and local knowledge differently, but the primary value of local knowledge to all Board members interviewed was that it carried with it a connotation of 'direct'. When local people made their presentations, they were not philosophizing about issues of remote importance, but rather, they were describing issues of immediate, and direct concern. Presentations made by consultants on behalf of the local people did not seem to have the same impact on the Board as those made by the locals themselves. It was generally agreed that, for social information, it was much more effective to hear from the affected people directly. They can describe the potential effects on their lifestyle with an immediacy that no one else can convey to the same degree. Still, some people chose to hire professionals to make presentations on their behalf. Ross discussed this issue and provided the following statement which captures the essence of why some people might choose to hire a consultant:

I think there are a variety of reasons. Intimidation. The false belief that a consultant with scientific expertise and credibility has more credibility with the Board. I want to stress that's a false belief. It's wrong. But there's no doubt in my mind that people believe it. They say it frequently. And they're wrong. I don't know what one can do to straighten that out because it would make for much more helpful hearings to hear directly from people who can tell us what their concerns are.

Schindler addressed this issue during his interview as well. He also stated that the consultants' presentations were not as useful as the ones made by the locals themselves; however, he thought this was because, in general, he felt that they had not been done very well. He didn't specifically mention that the 'direct' nature of the local presentations was a significant factor for him.

Generally, then, the presentations about local issues that were made by the local people themselves had a more significant impact on the Board. One exception to this was when the presentations became
largely repetitive. This repetition had a negative impact on several members. For example, when DeSorcy was asked whether hearing about a particular issue over and over again increased the impact of the issue for him personally, he responded by saying "...if anything, it has the opposite...it's just not good strategy". Schindler concurred. He felt that repetition, up to a point, helps to emphasize concern, but "after that, I found it down right irritating". Local knowledge, then, while being potentially helpful to the Board, tends to become less effective when it is repetitive. Neither of these respondents referred to the impact of the repetitive nature of the information provided by the proponent. This would have been interesting to pursue. For example, did they find that AlPac's position also became less persuasive because of repetition. Or, because it was likely scientific and technical information, did they find the repetition interesting. These questions should be pursued in further interviews and would be enlightening in terms of understanding the values and perceptions of the Board members about local versus technical knowledge.

It became clear during the interviews that the value each member assigned to local knowledge was related to his interpretation of the terms of reference for the Board. For example, Ross stated at the outset that, for a variety of reasons, the chlorinated organic compounds issue emerged as the primary issue. But later he added:

On the other hand, we were not merely charged with answering that question, although answering that question was an important one....In answering the question of what are the effects of the mill on the local community, and was the site intelligently chosen, we paid attention to a different set of submissions. Those were largely not by international scientific experts, but by local people.

Schindler perceived the terms of reference differently, which became clear when he stated "I would say that we were all pretty focussed on water, simply because our terms of reference were......were that". He went on to explain that he did think that these terms of reference were too narrow, and would have liked to have seen them expanded to include forestry practices in the basin. This did not, however, include the 'local' that was the focus during the interview. In this particular case, there was a sense that local knowledge was valuable, in general terms, but that this particular review was different, and did not lend
itself well to the use of local knowledge. He clarified this later in the interview when he stated:

....I think this case is fairly unusual as hearing panels go in that it focussed so quickly, or so much...there was so much public concern for this dioxin and organochlorine issue. And yet, by its very nature, it's outside the realm where the public is likely to have much expert knowledge.

With this statement, he acknowledged that first, there can be a place for local knowledge in these types of reviews, and second, that for this particular case, possibly because he was the only ecologist on the panel, his focus was very clearly the water-related issues. This could have been either a conscious decision - because there were others on the Board who would look at the other issues, or a subconscious decision because that is where his own priorities lie.

In sum, local knowledge, however it was defined, had varying degrees of value for the different members of the Board. Each interviewee also expressed his opinions about what role he felt local knowledge should play in such reviews.

Role of Local Knowledge.

Things that are important to local people, that are valued by them, have an entirely legitimate role, and that different perspective is contributed as well. That is one of the very important reasons for the process being a public process....And one of the fringe benefits is that the public gets to see the process and have more credibility in it.

This statement by Ross reflects the opinions of the other interviewees as well. While all those who were interviewed thought local knowledge could and should be part of an environmental review, some also had suggestions for improving the process to better reflect the issues of the local people.

DeSorcy was most detailed when explaining what changes he thought should be made in the review process to include local knowledge in a way that would be useful to a review board. The process he outlined was closer to the ERCB review process he had previously been involved with. He thought local presentations ought to be made in two parts. First, local citizens should identify their concerns, some of which may or may not be technical in nature. Second, they need to arrange to have technical parties evaluate these concerns and provide technical support for them, thereby reinforcing their concerns. Also, in order to
minimize repetition, he thought local people should organize themselves in meeting or workshop-type sessions to identify all their concerns and put together a local panel to present these concerns at the hearing.

Schindler also provided suggestions for how the process could be made more effective. He felt that there should be an early round of hearings to reveal what expert knowledge there exists on the issues, and then have a break in the hearings so that this information could be digested by all interested parties. Afterwards, a second round of hearings would be held in which local people could then focus more specifically on issues that were still of concern to them.

Several of the respondents mentioned that it seemed the review process had been set up in such a way as to hear primarily from those who were against the project, and this could be one area where changes are made. However, although the absence of 'pro-mill' presentations was noted by some of the interviewees, it also did not seem to be a significant concern. When I asked Schindler if he felt that hearing from the people who were "pro-mill" would have provided the Board with additional, useful information, he responded with "I doubt it....I think we would've ended up with sort of the same background appreciation for where the public in the basin stood". There seemed to be general agreement among the interviewees that whether presenters were 'for' or 'against' the project was not the focus of the review. DeSorcy emphasized this when he stated "[T]hese panels, in my judgement, are not, and should not be put together to make a political assessment."

It was interesting to explore the role that each Board member played during the hearings, and to see how it related to their opinions of the role local knowledge should play in such reviews. Each of the two acknowledged 'experts' had a slightly different approach to the review and a subsequent impact on the Board. Ross described what he felt were his responsibilities as a board member:

When I listen to presentations, I use the following to guide me - is the information being presented useful in shaping my image of the project? I believe it is fundamentally important to respect the presenters, for many of whom it is a difficult personal matter to stand up and to be in a public hearing of this sort. I listen carefully; I have to respect what they are doing......The next thing is that it is a responsibility, in my view, of the Board member, to learn the message that person is trying to deliver.
He added that for some of the issues, scientific presentations were more important; and for other issues, the local people's presentations were more useful. For him, it was a matter of dealing with the information required to address the whole, on an issue-by-issue basis. He made a point of equalizing scientific and non-scientific information by saying that what was important was the intellectual content of the presentation, and emphasized that many of the local presentations fell into this category. In fact, he stated:

Now I want to be very clear. That does not mean that the scientific presentations were better for me than the personal, emotional presentations. I think that the intellectual substance of some of the emotional, personal presentations were higher than the intellectual substance of some of the scientific presentations. Simply because there was real information about how projects affected or would affect people.

In the case of Schindler, he recognized that by being the only ecologist on the Board, he had an additional role to play. He explained how, at times, he found himself interpreting much of the material in the presentations to the other Board members. This became the case because, as he mentioned, in many instances, due to time constraints, the Board would cut off the expert presentations, and then request additional information in written brief form. There were times when the rest of the Board asked him questions and he provided the answers, rather than having the experts giving the information to the Board directly. He conveyed some discomfort with this when he said

"I suspect I gave the same answer, but to some degree, I felt like I could have put a personal spin on things...." This is a reflection that this process was perhaps not the best forum to harness both expert and local testimony. Schindler referred to other processes, which for a variety of reasons, are conducted differently, and stated:

I like the procedure much better that we usually followed where....not only the panel, but we also had an opportunity for others from the audience to ask [questions of] people giving oral testimony. So we could have gotten a long way, I think, to satisfying public concerns, if both we and the local population had been allowed to question expert witnesses.

When speaking with DeSorcy, he recalled that Schindler and Ross, being the experienced academics on the Board, did a lot of additional research, seeking references, etc. based on points made by
others, and in so doing, they required much additional data from the proponent. In this case, there was an added role for the academics, or 'experts' to play in the review process. This particular experience suggests that it may be beneficial to consider having some members of such review Boards who are experts in the subject fields.

Three of the members on this Board were residents of the surrounding community. When I asked Ron Epp about his role on the Board, he stated that he often felt overwhelmed with the amount of information he needed to sort through, but that, eventually, he was able to interpret and prioritize the information by applying the 'common sense' approach. With all the conflicting information that was presented, he reminded himself that "...well, moderation in all things is going to work". This particular interviewee's reflections on the amount of conflicting information presented during the hearings provides some insight on the role that both technical and local knowledge, can play in such hearings.

During this interview, Epp implied that at least initially, he probably expected science to provide the answers that the Board as a whole was looking for. What he found was that the entire issue is very complex and that science did not provide absolute answers. He admitted to feeling intimidated, at the beginning, by all the people with advanced degrees because, as he stated, "I'm not as educated as they are". But as time went on, he realized that no one had all the answers. In fact, he said that what he found most exposing about the whole process "was the fact that the scientists with the same information in front of them come up with exactly two diametrically opposed opinions". He acknowledged the frustration and confusion that he and some of the other members of the Board who weren't scientists felt during this process, especially because it seemed that the 'experts' could not agree on anything. So while Epp did not address the role of local knowledge in particular, he came to some resolution about the incomplete role of science in such reviews.

Each Board member who was interviewed reflected both on his role on the Board, and on the role of local knowledge in the environmental review hearings. The variety of opinions elicited on both issues has some important implications for process design and the make-up of such Boards. These will be
an interview with AlPac was considered to be important to this case study. Although employees of AlPac were not responsible for making the ultimate decision on whether the pulp mill would be built, they were in a position to make changes to their proposal based on the public input obtained during the hearings. When they submitted the mitigated proposal, it contained some changes that reflected public concern, but it was unclear as to whether local knowledge had impacted the decision to revise the proposal. An interview was sought with a representative of AlPac who might illuminate the process the Company went through when revising the proposal. Gerry Fenner was selected because he is the current vice president of pulp, and because he had been a key figure during the AlPac EIA and hearing process. The same key issues emerged in this interview as in the ones with the Review Board, and therefore, the following discussion centres on the definition, value, and role of local knowledge in the environmental review process.

Definition of Local Knowledge

During the interview with the Fenner, the problem of how to define local knowledge was once again evident. He explained that "[t]he mill site was one local; but to us, the whole forest management area was another local; our area of influence goes right up past Ft. McMurray". To focus on the mill site 'local' required some directing during the conversation but these efforts were largely successful. As a direct participant in the hearings and the entire review process in 1989, Fenner was quite familiar with the local farming community and the major issues that the farmers faced. He was able to cite examples of information provided by local people quite easily. Some of the issues he remembered included concerns regarding the construction of the mill, such as drinking and other construction worker-related issues, road access, concerns about traffic and bus routes, access to the Pine Sands area, and concerns about
environmental health. When talking about local knowledge, however, the emphasis seemed to be on the concerns the people had which required mitigation. Local concerns were thus equated with local knowledge for the duration of the interview, as this was, in essence, largely how this interviewee defined local knowledge. Subsequent discussions centred on the value of these concerns, and how the Company attempted to mitigate them.

Value of Local Knowledge

Throughout the interview, Fenner expressed a high regard for local knowledge and said it was extremely valuable component of the EIA process. It was unclear in the interview just how the knowledge provided by local people was actually used by the Company. When questioned about this, Fenner said that the usefulness of local information to the proponent depended on what the issue was. As much as possible, the local people's concerns were listened to, and specific action plans were devised to ensure that mitigative measures were implemented. He stated that the information provided by the locals on site-specific concerns was valuable, and added "I don't think we could've got that from anyone else other than local people", and "...we tried to address all of those issues as much as we could".

Fenner explained several mitigative efforts carried out by the Company. For example, AlPac bought more land than they had initially planned in order to create a much bigger buffer zone around the mill. This, in spite of the fact that, as he stated, "we knew it wasn't necessary". It would have been interesting to pursue why he felt that this was not necessary, however, most of the remaining discussion centred on the siting of the mill, and the problems this generated.

During the interview, Fenner acknowledged that the site of the mill imposed a no-win situation for those families who would be directly affected by displacement. He illustrated this in the following statement:

....there were lifestyle concerns, and I'll classify them as very local people, which is displacement. We actually had to move 6 or 7 families. We bought their farms and we moved them. Now that was a displacement problem, and was a concern. Now some of them, I've talked to some of them and they're happier in their relocation than they were
here, because we paid them more money than their farms were worth. So when they reestablished, they reestablished themselves in a better condition, in a better farm, and so they were happier. But there were two or three others that I think are still not happy with the move. You know, and that's legitimate. How do you displace somebody from the place...in one case, one family for instance, I think they were born here. There's that kind of displacement. There's no solution to that. But generally speaking, the others right next door to us are not unhappy. They've improved their condition.

In actual fact, the number of families displaced was eleven. This was verified by comparing the County maps before and after AlPac's purchases of land. Fenner's error suggests several possibilities: The number of families displaced was never counted by the Company officials; the actual number was not of high significance when compared to all the other issues the Company had to deal with; or because of the time that has passed, it was not a figure that he could remember accurately. Nevertheless, the displacement of eleven families from a community of only roughly thirty families, is a significant change to the make-up of a community.

While Fenner acknowledged that displacement was a problem, he also stated that "beyond the local impacted area, then there's been very little impact". He added that now there is very little interest in the community in even attending information meetings organized by the Company. However, during our conversation, we did not discuss what comprises the company's current public involvement program, or what the possibilities for the apparent apathy could be.

Role of Local Knowledge

For the remainder of the interview, Fenner explained that the process that AlPac followed had been largely dictated by the government. He acknowledged that the entire project and the review process became adversarial and confrontational, and stated that AlPac would have liked to have proceeded in a different manner. But, as he said, "our hands were totally tied". He then added: "We were quite willing to listen without polarizing people to the point where it was so extreme". Much of the adversity generated over this project had been building over several years with previous announcements from the government over forestry development in general. To this end, Fenner stated "I think the forum that we
had for this particular project was not necessarily the best forum to get local input" and later added:

....I think that if you are allowed as a company to do a good job of communicating your plans and your process, the impacts, and so on and so forth with the local community, and have their input back before you start a project, you'll do it much better, there'll be less friction and you'll have generally, a better relationship with the community you're going to live in.

Fenner discussed one of the major factors that made it difficult for AlPac to design an effective public involvement program. The government awarded the timber rights to one of the several competing companies, but it had discouraged all of the companies from doing any planning in the communities until the decision had been announced. However, in order for the companies to provide the preliminary information in their proposals, there was surveying and other types of initial work to be done. This became obvious to local residents, and rumours began to circulate about a pulp mill being located in the area. By the time the timber rights were awarded to AlPac, the community was already frustrated by lack of information. According to Fenner, AlPac then entered into a no-win situation, where much of the community already opposed the project even before it had been publicly announced. He felt that although many of the land use issues, such as siting, were decided by the government, AlPac had been put in a position of defending these decisions, which added to the controversy and fuelled public opposition to the project.

Fenner identified early access to the community as the major way the public process could be improved. This is illustrated in the following statement:

But if I had my way about a process review, then these issues [land use decisions] would've been resolved and we would've been allowed to go into the area where we were going to have some impact, whether it was the mill site or the forest management area itself, and then did a lot of ...I'll call it lower-keyed communication with people in the area, so that we got their concerns but on a very much of a lower key and took a lot of the emotion and a lot of the confrontational, adversarial process out of.....that wasn't necessary.

Much of our discussion during the rest of this interview centred on how AlPac would have proceeded differently in conducting its public participation program, had it been allowed to do so by the government. I reminded Fenner that in the EIA guidelines provided to AlPac by the government, it was
stated that the details of the public involvement program would be worked out with the proponent. An excerpt of this exchange follows:

EC: ... in the EIA guidelines at the time it said that those kinds of things would be worked out with the proponent. But basically you’re saying it was like being legislated to do things, although it wasn’t really legislated...
GF: Well, they were worked out. I mean, you can’t say they weren’t worked out because we sat down with them and they said this is what we want you to do. And we said ‘O.K., fine this is what you want us to do’. But we also said ‘we’d like to do this and do that’ and they said ‘no, we want you to do this and this’. So it wasn’t exactly like we sat down and had a consensus decision-making meeting.

Much of this interview centred around how the Company would have proceeded differently in designing its public participation program, had it been allowed to do so by the government. It was implied that local knowledge might have played a larger role than it did, and that some of the adversity and controversy that was generated may have been avoided. However, most of this discussion was hypothetical in that Fenner described the ideal situation, but just what would have happened had they carried out a different type of program is impossible to tell. This interview did emphasize the importance of incorporating local knowledge in plans for development, and that proper timing for involving the public was crucial to the effectiveness of a public participation program.

Interviews with the Scientific Review Panel

An in-depth analysis of the hearings conducted by the Scientific Review Panel is beyond the scope of this thesis. However, because these hearings constituted part of the public review process of the AlPac project, interviews with two of the three members were arranged in order to explore what impact, if any, the public ultimately had on this last opportunity for public review of this proposal. The fact that these hearings were held strictly to discuss a highly technical matter, and that the government eventually used the Panel’s conclusions as the basis for its decision to approve AlPac’s proposal, serves to illustrate the value attributed by decision-makers, to scientific knowledge. These interviews provide two additional perspectives on the value and role of local knowledge in the EIA process.

The two members who participated in the interviews were Ed Brushett and Eric Hall. The former
is an engineer, and served as Chair of the Scientific Review Panel. At the time of the review, he was also Special Advisor for Environmental Affairs with the ERCB (Alberta-Pacific Scientific Review Panel 1990). The latter was a senior process development engineer at Environment Canada’s Wastewater Technology Centre in Burlington, Ontario, where he directed federal research programs on pulp and paper effluent treatment (Alberta-Pacific Scientific Review Panel 1990). Much of both of these interviews centred around a discussion of the terms of reference for the Panel and the unique problems this posed as a result. The specific terms of reference can be found in Appendix C.

In general, this Panel was struck to assess the feasibility of the revised process AlPac designed to mitigate the discharge of chlorinated organic compounds into the Athabasca River.

The highly technical nature of this review did not lend itself to an extensive review by the public. Very few people, in fact, were qualified to provide information that would impact the conclusion reached by the Panel, and the contribution made by the public was at best, 'moderately useful', Brushett explained. Both respondents, however, admitted that the presentations of the local people affected them in a personal way. Hall stated that the Panel members were moved by many of these presentations, and were impressed by the depth of concern, or in some cases, anguish, that was expressed by the local people. Brushett recalled some of the more emotional presentations by the local people, but acknowledged that while the Panel had high regard for their concerns, the information provided did not broaden the Panel’s understanding of the particular issue to be resolved. He stated:

The unfortunate part about it was that much of it was outside of our terms of reference. And this was the continuing difficulty with the hearing that we had. The terms of reference for this hearing were quite narrow and quite related to a technical matter. And people who continued to be concerned about the plans even after DeSorcy’s Panel, and their decision, were continuing to wish to present their concerns at our hearing and we couldn't consider those matters. It made things difficult at times.

Brushett later added "...we couldn't consider local concerns unless they fell within the terms of reference" and these were so specific to one particular process in the mill, that local people could not offer the information required.

The emphasis of this hearing on strictly technical issues partly reflects the value placed on such
information by the decision-makers. The Panel received much criticism for interpreting the terms of reference the way it did, namely, that they would not look at the potential environmental impacts of the effluent discharge of the modified wood pulping and bleaching process. To this issue, Brushett responded:

I'm quite comfortable with the way we interpreted it, because we were guided by the Ministerial Order. And I believe that if we hadn't followed the Ministerial Order to the letter, then our recommendations could've been questioned. The other part of it, of course, was that if we opened the door even a crack, with respect to environmental concerns that we believed were outside of the terms of reference, I think we thought we'd just open the flood gates to issues that had already been addressed by the DeSorcy panel.

Hall concurred with this, although he stated that, in retrospect, they could have better emphasized the point that the Panel's answer to this one very specific question was not, in any way, meant to replace the conclusions and recommendations of the previous Board. But, he added, they had no way of knowing how the government would use the information they provided, and said:

We were technical specialists. We worked for the government as technical specialists. The reason that any employer would hire a technical specialist would be to have good technical advice. And if they asked us a technical question, they had a right to expect us to answer a technical question.

However, there was a realization, which was expressed by Hall, that this particular round of hearings may have not been necessary. Like the other respondents, he expressed an opinion as to how the public review process could have been carried out more effectively. He emphasized that "while the decision-making process should definitely be a public process, it need not involve a separate public review of each question to be addressed". The public review, in his opinion, should be held when the technical issues have been resolved. He added:

We were asked to review a very specific technical question - Could the mill be built to discharge contaminants at the level specified by the company? That's an important question, I suppose, in as much as once that information is available, or once a decision on that topic has been obtained, it's then possible to go back and look at those contaminant emission rates, and decide whether they're going to have significant environmental impact. Once the environmental impact has been assessed, then a decision can be made as to whether to approve the mill or not. And that is the decision-making process, and that part of it is what should be reviewed in a public forum.

Brushett also expressed a commitment to involving the public in the EIA, but had some suggestions on how to improve the public review process as well. He suggested a different process, much
like the ERCB process already described by DeSorcy in the section on interviews with the Review Board, above. He favoured the seeking of local knowledge and local input outside the public hearing forum, in a negotiative process between the proponent and the community, with the aid of a trained facilitator. Any issues that remained unresolved would then be presented at a public hearing. This way, he added, the public need not be intimidated by the use of scientific and legal jargon that is common at hearings, and can choose to become involved in a manner that is less alienating than having to stand up and make a presentation in front of many strangers.

While these two respondents had different suggestions for improving the process, both seemed to favour an alternative to the public hearing format for dealing with as many of the issues as possible. Highly technical issues do not lend themselves to a meaningful review by the general public, and can therefore, be an ineffective use of public hearings as a planning tool. Brushett emphasized that although the process that he described would involve an expense of time as well as financial resources, it is a worthwhile endeavour, because many problems cannot be resolved in the sometimes adversarial atmosphere of a public hearing.

This certainly proved to be the case in the two rounds of public hearings held for the review of the AlPac EIA. The frustration expressed by the public during, and following this second round of public hearings, related primarily to the fact that it became evident the government was focussing on one technical question to resolve a very complex issue. The fact that during the Panel's hearings, there remained numerous requests on behalf of the public to address all of the remaining concerns, proved that the entire question of whether the mill should or should not have been built in the Prosperity area, needed to be resolved by addressing the many social, as well as technical issues.
In this chapter, two issues relating to the case study were examined. The reports that became available following the AlPac EIA Review Board Hearings were analyzed to determine whether they reflected the information provided by the local farmers during the hearing. Although these documents gave some indication of the impact of local knowledge, it became necessary to hold interviews with participants in both the Review Board and Panel, as well as the proponent, in order to assess the value of local knowledge to these participants, and the potential role of local knowledge in such environmental reviews.

The findings of the interviews were varied with respect to the definition, value, and role of local knowledge in the EIA process. The participants also suggested how best to incorporate local knowledge into the EIA process. This gave some indication of the value of local knowledge to the various participants in a public hearing, and to some extent, to society in general. This will be discussed in detail in the discussion and conclusions section in the following chapter.
CHAPTER 7
DISCUSSION AND CONCLUSIONS

In this chapter, I discuss the results of the research conducted for this thesis and draw some conclusions on the role of local knowledge in the EIA process. The implications of the major findings of the study are also discussed. Some of these, I believe, are of significance to planners and other professionals who are involved in designing public involvement programs. The findings are also relevant to those who are interested in public participation in general and believe in enhancing the role of the public in resource management initiatives.

Public participation is widely accepted as an integral component of the EIA process; however, the role that local knowledge plays in such reviews has yet to be validated. Recently, there has been greater attention paid to traditional knowledge systems and a recognition that people whose lifestyle is closely tied to the land, such as farmers, have a unique knowledge base to contribute to environmental assessments. While much has been accomplished in the recognition and subsequent use of indigenous knowledge systems in the EIA, the knowledge that farmers potentially bring to the EIA has not been sufficiently studied. This was, therefore, the focus of this thesis. A unique aspect of the research conducted for this study was that it looked specifically at what was done with the local knowledge provided by people in this sector during the EIA public hearings.

Submissions to the AlPac EIA Review Board hearings were analyzed and the local knowledge provided by the farming public was traced from the presentations at the public hearings, to the two documents that were the products of this extensive public review. This was done in order to determine whether local knowledge was reflected in the resulting documents, and thus, to make an assessment of the impact of local knowledge on the EIA process. As this effort proved to be largely inconclusive, members of the Review Board were interviewed to determine whether local knowledge was taken into account when they were writing the report and deciding on the recommendations to make to the Minister of
Environment. These interviews were rich with information about the individual member's opinions of the value and role of the knowledge expressed by the local farmers during the EIA public hearings. Members of the Scientific Review Panel, as well as the proponent were also interviewed. The information they provided in these interviews lead to some significant conclusions about the value and role of local knowledge in the environmental review process.

The AlPac case was an appropriate choice for this study for several key reasons. It was a high profile project that was the target of much attention, interest, and involvement from the public. A review process was designed specifically for this project to seek different types of knowledge from various factions of the public. Local people were afforded the opportunity to convey their knowledge in a public forum alongside scientific experts who are world renowned in their fields. It was also a particularly good case to examine because the process as a whole was controversial and much debate ensued on a provincial level about the role of the public in the EIA process. The role that the different levels of governments played, and the final decision on the pulp mill project pointed to interesting conclusions about the value of knowledge held by society in general. These have significant implications for the design of future public involvement programs and the incorporation of local knowledge in the environmental planning and assessment processes.

Discussion of Research Results

A review of the literature highlighted the complex nature of resource management decisions. Issues of resource use and allocation involve not only technical questions, but also community and lifestyle choices and other considerations which are not resolvable by using technical measures alone. The literature showed that traditional knowledge systems have valuable contributions to make to the environmental assessment process and that many efforts have been launched to incorporate this knowledge into the EIA, especially in the Canadian Arctic regions.
An analysis of the submissions of the local farming public to the AlPac EIA Review Board showed that local farmers contribute local knowledge that is unique. In this case, they provided a knowledge base over and above that which was contributed by the general public. Their knowledge was experiential, scientific, and personal.

Like other groups who derive a living from close association to the land, the knowledge that farmers contributed during the hearings was based on experience. In this case, they were able to provide historical information on when the area was settled, family histories, as well as information on the biophysical aspects of the environment. They knew what crops had been grown with success; they knew about the weather patterns and they knew about farm management practices specific to their area. As with other traditional knowledge systems, the knowledge of the farmers in the Prosperity area was based on careful observation of nature and natural systems, and was passed on from one generation to another primarily in an oral fashion. In the AlPac case, the tradition of family farming emerged as having significant value to the local community. Many of the local farmers who presented at the hearings wanted to continue with their rural lifestyle and they wanted to pass on this tradition to future generations.

The submissions that were analyzed for this study showed that local farmers also contributed scientific knowledge of various issues that had local significance. They knew much about agricultural science, soils, and groundwater, and they felt confident enough with their knowledge to challenge the experts. For instance, they knew how to manage their Class 4 soils to result in better-than-expected yields for the crops they grew; they knew about potential erosion problems with logging, and they knew about the direction of groundwater flows in their area. They also provided evidence that they had conducted research for themselves, and they conveyed to the Board relevant technical knowledge of pulping techniques, and waste treatment systems, and discussed the perceived impacts of the project on the local, as well as the global economy.

Finally, the local farmers provided their personal knowledge to the Review Board. They were able to express their opinion about the mill by conveying knowledge of their values, their needs, and what
they wanted for their families and their community.

Many of the presenters were uncomfortable in such a public setting but chose to be involved in the hearings anyway. The fact that local people made public presentations which sometimes included very personal information illustrates the significance which they tied to maintaining their traditions and their way of life. They were willing to convey this knowledge to the Review Board with the hopes that it would have an impact on the Board's recommendations to the Minister of Environment and eventually affect the decision of whether or not the pulp mill would be built in their community.

The AlPac EIA Review Board hearings brought the debate of technical and social issues into the public realm for public scrutiny. This is an important aspect of an environmental review, and while technical and socio-economic knowledge is obtainable through other means, the public hearing provides a forum in which the information can be publicly challenged. It also provides a mechanism for local people to convey knowledge about their environment. In this case, the public provided information to the Board that had not been included in the EIA. This illustrates that there is a need for public hearings in the review of large projects such as this one.

The interviews held for this study provided additional information on the value and role of local knowledge in the EIA process. The four members of the Board who were interviewed had differing perspectives on the value and role of local knowledge, yet all managed to reach consensus when writing the report. Different kinds of information were important to the different members, which points us to the conclusion that if we want all bases covered in such reviews, Board members must be carefully selected, taking their experience and professional background into consideration. If a Board is comprised of enough members of varied backgrounds, the process of arriving at consensus will undoubtedly involve careful consideration by all participants and healthy debate on the important issues. It is also the best way of ensuring that many aspects of the review, including local knowledge, will be given proper attention.

The interview with the representative of AlPac clarified several issues. First, employees of the Company seemed to have a high regard for the knowledge of the local people, and second, that they would
have liked to have proceeded differently in conducting the public participation program for the EIA. Because there was growing controversy over this project and the EIA review process in general, the Company's public participation program became unsatisfactory to the general public and public hearings became necessary. The government, then, announced public hearings to review the project in a public forum. This was done 'after the fact' and it would have been more effective if the entire public review process, including the requirement to hold public hearings, had been known from the outset. This interview also led to the conclusion that timing is of great significant when designing a public participation program for such a project. Involving the public in any development project requires the presentation of information to the public in a timely manner and an honest effort to seek the public's input. The AlPac case illustrated that agricultural communities have a unique knowledge base that is not written down and is obtainable only through direct contact with community members. Therefore, developers intending to build in an agricultural community need to consult local area farmers in order to obtain this valuable input.

The results of the interviews with the members of the Scientific Review Panel were interesting, but not surprising. Both members agreed that the role for the public in this review was very limited. This second round of hearings was a technical review that was opened to the public through a hearing-like format but was, in essence, more of a technical meeting of experts to discuss the technical issues. The only real avenue open to the local people to participate in this second review was by hiring consultants to review the technical issues and make a presentation on their behalf. The fact that this second panel's mandate was to consider a strictly technical issue gives an indication of the value of scientific information to the government and to society in general.

The government chose to focus the second round of hearings on a technical review and leaving many other issues, including social issues of interest to the local community, unresolved. It hoped that by addressing the fate of the project with technical information, that the results would be beyond question by the public. If technology could provide the answers to the high profile issues in this proposal, then it could possibly overshadow the social (and maybe not-so-important) issues that had not been adequately
addressed. If, at some time in the past, the public accepted this claim that technology can provide 'fixes' to resource management decisions, the controversy that remains to this day about the entire review process for the AlPac mill shows otherwise. Many people, including academics, members of the general public, as well as some scientists, have criticized the government for ignoring the complex nature of environmental decision-making, and in the AlPac case, of reducing the concerns of the public to those which were resolvable using primarily technical information.

Conclusions

Analysis of the AlPac EIA Review Board hearings showed that public interest and willingness to participate in this project was high. Input contributed by the general public constituted nearly three-quarters of the total number of submissions to the Review Board. The remaining quarter was comprised of submissions from the proponent and the various levels of government. Local interest in this project was particularly high. This was apparent from the fact that the largest number of presentations to the Review Board during the hearings was made in the communities closest to the proposed mill site (i.e. Prosperity and Athabasca).

Local area farmers, while relatively few in number, contributed a unique body of knowledge that was significant in the overall assessment of potential impacts of the proposed pulp mill. Their knowledge fit the definition of 'local knowledge' derived from a review of the literature - it was the knowledge of the local people, and included beliefs and perceptions, as well as knowledge of one's values. Three categories were developed for the knowledge contributed by the area farmers: Experiential, scientific and technical, and personal. Experiential knowledge referred to the knowledge the farmers had because of what they did and where they lived. They provided information about crop varieties grown, yields, and management practices specific to their area. They also provided historical information about the area, such as when it was settled and by whom. One issue that emerged as having great importance was the tradition of the
farming lifestyle and the ability to pass on land to their children. Scientific and technical knowledge referred to the knowledge the farmers had about agricultural science (which tended to overlap with experiential), and knowledge they had gathered about pulping technology, and the EIA process. The last category, personal knowledge, was used to refer to the values held by the local farmers, as revealed in the opinions they stated about the mill. For example, some of the farmers stated whether they were in favour of the proposed mill, and why, and many stated the kinds of things about their community they felt were important. The local knowledge of the area farmers provided additional information to the process than that obtained by consultants alone, and served to emphasize issues already stated in the EIA.

Interviewing the proponent established that the design of AlPac's public involvement program was largely dictated by government. There were significant constraints set by government on the timing of the company's introduction to the community. This hampered AlPac's efforts to initiate their public involvement program with some 'lower-key' communication strategies and one-on-one visits with local residents.

From the interviews held with members of the Review Board and the Scientific Review Panel, it became evident that the definition of 'local', and thus 'local knowledge', is vague. It clearly meant different things to different people, and depended on what issue was being discussed. The loose use of the word 'local' is a significant concern because it can lead to an undervaluing of the issues that are truly 'local'. The interviews also led to an interesting conclusion about the role of local knowledge in environmental decision-making. Participants in the study stated that they valued local knowledge, but the role they were ready to assign it was one of secondary importance. Most participants expressed the need to verify local knowledge with more conventional, scientific knowledge.

The personal impact of the local knowledge of farmers on the different Board members was highly variable. Some thought it was very important; others, less so. Local knowledge was reflected in the Board's report, but seemed to play a secondary role to technical knowledge in the Board's recommendation that the pulp mill not be built as proposed. In this particular case, the technical grounds
for rejecting the proposal were so clear and so significant, that it was not necessary for the Board to rely on local knowledge to make its recommendations. When the process moved to the final review with the Scientific Review Panel, the technical issues were once again highlighted, but this time local concerns were dropped. This clearly shows that, in this case, local knowledge did not impact the final decision to approve the pulp mill.

This study showed that if resource use decisions such as this one, are based strictly on technical information, they cannot encompass the complexity of community values. Only by consulting local people directly, can much of the information about tradition and lifestyle be obtained. In this particular case study, the local area farmers were the best sources of information about issues of concern that were pertinent to the community as a whole. They provided information on the classification system of agricultural soils, on the farming practices of the community, and on the importance of tradition in their farming community. Their local knowledge provided key information that should have been thoughtfully considered before a decision on the pulp mill was reached. It became evident in this study that local knowledge should be sought and used in the planning and decision-making processes in order to properly assess the environmental and social impact of such projects.

The findings of this study have significant implications for the process design of future EIA review hearings. The analysis of the AlPac case illustrated the need for specific steps in the review process in order to ensure that local knowledge is highlighted and considered when the potential impacts of a particular project are being reviewed. One way this could be done is to ensure that Review Boards consist of at least some members who clearly appreciate local knowledge and understand that it needs to be classified and integrated into the assessment of potential impacts of proposed projects. An understanding of local knowledge as a legitimate component of an EIA review translates into action in several ways. For example, affected communities may require funds for professional assistance when preparing for the hearings and travelling to the hearing locations, and these need to be made available. Another important consideration is the timing of the hearings. In the AlPac case, participation by the local residents was
required during some of the busiest times of the year for farmers (i.e. calving season, harvest). The lifestyle of the impacted communities needs to be considered when the logistics for the hearings are being established. Most importantly, the best way of ensuring that local people are consulted and local knowledge is integrated into the planning process, is to conduct a proper SIA before public hearings are held.

Recognizing that local knowledge is important to decision-making processes - in fact, as important as scientific knowledge - is not a mainstream idea. However, to attempt to answer the complex questions in resource management decisions by providing technical information in isolation of local knowledge is no longer acceptable. Making use of local knowledge when reviewing the potential impacts of a project is necessary if a comprehensive assessment is to be conducted.
REFERENCES CITED


Hobson, G. 1992. Traditional knowledge is science. Northern Perspectives 20 1: 2


McCorkle, C.M. 1989. Toward a knowledge of local knowledge and its importance for agricultural RD&E. Social Science 4-12.

Nakashima, D. 1990. Application of Native Knowledge in EIA, Eiders and Hudson Bay Oil. Ottawa: CEARC.


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APPENDIX A

MINISTERIAL ORDERS AND TERMS OF REFERENCE
FOR THE ALPAC EIA REVIEW BOARD

Province Of Alberta
Department Of The Environment
Ministerial Order No. 08/89
The Department Of The Environment Act

WHEREAS the Minister of Environment (the “Minister”) may establish a board to act in an advisory capacity in connection with any of the policies, programs, services, or other matters under his administration.

AND WHEREAS the Minister has established a policy and program to identify and assess the environmental impacts of proposed developments in Alberta through the Environmental Impact Assessment Guidelines for the preparation of environmental impact assessment reports.

AND WHEREAS the Minister, pursuant to Section 8 of the Land Surface Conservation and Reclamation Act, has the authority to require the preparation of an environmental impact assessment report.

AND WHEREAS Alberta-Pacific Forest Industries Inc. (the “proponent”) has proposed a bleached kraft pulp mill in the County of Athabasca (the “project”) and the Minister has ordered pursuant to Section 8 of the Land Surface Conservation and Reclamation Act, the preparation and submission of an environmental impact assessment report for the project on December 22, 1988.

AND WHEREAS the proponent is required to undertake public consultation in the preparation of an environmental impact assessment so that the public and the proponent are able to identify potential environmental impact and concerns.

AND WHEREAS the proponent has prepared and submitted an environmental impact assessment report to the Minister entitled “Alberta-Pacific Forest Industries Inc. Environmental Impact Assessment, bleached kraft pulp mill” (the “EIA”) dated May 8, 1989 together with associated supplemental information.

AND WHEREAS Alberta and Canada have each made provision for the environmental review of developments within their own spheres of jurisdiction and it is imperative that Alberta and Canada each make its decisions within the constraints of its own Constitutional jurisdiction;

AND WHEREAS in assessing the environmental impact of developments in Alberta with implications for both Alberta and Canada the potential exists for duplication and confusion in the application of the environmental assessment procedures of both jurisdictions;

AND WHEREAS Alberta and Canada deem it desirable to continue to strengthen coordination between the two Governments it is appropriate that they ensure that the environmental assessment procedures now required by each jurisdiction do not duplicate those of the other, and are respectful of jurisdiction;

AND WHEREAS Alberta and Canada agree to adhere to principles and procedures that ensure that the environmental assessment of developments in Alberta with implications for Alberta and Canada is carried out to the satisfaction of Alberta and Canada without creating confusion for the public or proponents and avoiding duplication, unnecessary delays and uncertainty.

AND WHEREAS Alberta and Canada have agreed that the undertaking of the project is primarily within the constitutional jurisdiction of Alberta.

AND WHEREAS Canada and Alberta have undertaken consultations pursuant to Section 32 of the FEARO Guidelines allowing variations to Sections 21 to 31 thereof.

AND WHEREAS it is necessary and desirable to conduct public hearings regarding the environmental impacts of the project.

THEREFORE I, RALPH P. KLEIN, Minister of Environment, pursuant to Section 6 of the Department of the Environment Act hereby establish a board to be known as “the Alberta-Pacific EIA Review Board” (the “Review Board”) to advise and make recommendations upon the environmental impact of the project upon the following terms and conditions:
A. MEMBERSHIP

1. The Review Board shall consist of the members set out on the attached Schedule “A”.

2. The Alberta members of the Review Board shall be paid remuneration and reasonable travelling and living expenses as specified in Schedule 1, Part A of the Committee Remuneration Order being Order In Council 1175/80.

3. The term of the Review Board shall be until a final report as described in section “D” is accepted by the Minister.

B. TERMS OF REFERENCE

The Terms of Reference of the Review Board shall be to hold public hearings:

1. To review the environmental impact of the project and the proposed mitigative measures, including an:
   a. examination of the expected cumulative impacts of effluent discharges on the Peace-Athabasca River system by taking into account existing and proposed discharges from other pulp and paper mills on the same river basin.
   b. examination of the potential environmental impacts that relates to areas of the Government of Canada’s responsibilities specifically fisheries, navigable waters, potential impact on Wood Buffalo National Park, and potential water quality impacts in the Northwest Territories, and timber harvesting practices as they may affect Indian Reserve Lands.

2. To review the degree to which the local citizens’ concerns have been addressed by the proponent.

3. To provide advice regarding the environmental acceptability of the project and terms and conditions as appropriate for inclusion in the necessary permits and licences.

C. PROCEDURES

1. Subject to the approval of the Minister and the procedures hereinafter described, the Board shall make rules of procedures governing the calling of meetings and hearings, the procedure to be used at and conduct of the meetings and hearings, reporting and any other matters as required.

2. The Review Board shall hold public hearings in the Town of Athabasca, Community of Prosperity, Town of Lac La Biche, City of Fort McMurray, Fort Smith (Northwest Territories) and such other locations in the project area as the Review Board deems necessary.

3. The Review Board will commence public hearings no later than four weeks from the date that Alberta Environment has distributed the deficiency review of the EIA to those who have indicated their desire to participate in the public hearings.

4. The Review Board will receive written and oral submissions from the public upon the EIA and any matter falling within the Terms of Reference of the Board.

D. REPORTING

1. The Review Board shall complete its review on a timely basis consistent with the Terms of Reference.

2. The Review Board shall provide a report to the office of the Alberta Minister of Environment, who in turn will pass the report immediately upon receipt to the Federal Minister of Environment.

3. The Alberta Minister of Environment, in consultation with the Federal Minister of Environment, will make the report public in a timely fashion.

DATED at the City of Edmonton, in the Province of Alberta, this 11th day of July, 1989.

Ralph P. Klein
Minister of Environment
SCHEDULE "A"
ALBERTA-PACIFIC MEMBERSHIP OF THE EIA REVIEW BOARD *

NAME
1. Mr. G. J. DeSorcy Chairman
2. Mr. Ron Epp County of Athabasca
3. Mr. Ted West Town of Athabasca
4. Mr. Mike Franchuk Improvement District #18S Fort McKay
5. Chief Jim Boucher Canada
6. Prof. William Ross Canada
7. Dr. David Schindler Canada

* The Northwest Territories will have an Ex-Officio observer.

Province Of Alberta
Department Of The Environment
Ministerial Order No. 14/89
The Department Of The Environment Act

I, Ralph P. Klein, MINISTER OF ENVIRONMENT, pursuant to Section 6 of the Department of the Environment Act hereby amend Ministerial Order 08/89 as follows:

1. Revise the list of Review Board members as per Schedule "A".
2. Add the following sentence to Section A, Membership, Subsection 2:
   "except where a Committee member suffers a loss of income as a result of time spent on Committee business in which case the Committee member could be reimbursed at the same rate of compensation paid by his employer".
3. Substitute Section A, Membership, Subsection 3 with: "The term of The Review Board shall be from July 11, 1989 until a final report as described in Section "D" is accepted by the Minister".

DATED at Edmonton, Alberta the 24th day of October, 1989.

SCHEDULE "A"
ALBERTA-PACIFIC MEMBERSHIP OF THE EIA REVIEW BOARD *

NAME
1. Mr. G. J. DeSorcy Chairman
2. Mr. Ron Epp County of Athabasca
3. Mr. Ted West Town of Athabasca
4. Mr. Mike Franchuk Improvement District #18S Fort McKay
5. Chief Jim Boucher Canada
6. Prof. William Ross Canada
7. Dr. David Schindler Canada
* 8. Ms. Cindy Gilday Northwest Territories
* 9. Mr. Bob Duncan Alternate
*10. Mr. Ed Koehler Alternate

* Denotes Additions
Purpose Of The Review Board

The EIA Review Board has now been formed and given its terms of reference by Ministerial Order 08/89 which was issued by the Alberta Minister of Environment in consultation with the Federal Minister of Environment.

The EIA Review Board considers that its purpose is to hold public hearings on the environmental impacts of the bleached kraft pulp mill proposed for the County of Athabasca by Alberta-Pacific Forest Industries Inc. (ALPAC). Based on those hearings, the Review Board will write a report providing advice and recommendations to the Alberta Minister of Environment, and through him, to the Federal Minister of Environment.

The Review Board will be examining all environmental impacts of the proposed pulp mill. These include:

a) biophysical impacts such as those which would relate to emissions to the air and discharges to the Athabasca River, and

b) socio-economic impacts such as those which would result from an increased work force in the region during construction and operation of the mill.

It will not be considering non-environmental aspects of the proposed mill, such as its financial feasibility, markets to be served, or the kraft mill technology used — other than to the extent that the technology impacts on the environment.

In considering the impact of the mill on the Athabasca River, the Review Board will be examining the cumulative effects on the Peace-Athabasca River system. In other words, the Review Board will be looking at the effects of existing discharges as well as those which would result from the ALPAC and other proposed mills on this river system.

The Review Board has been formed jointly by the Alberta and Federal governments. For this reason, it will be specifically looking at a number of impacts that relate to matters for which the Federal government is responsible. These will include potential impacts on water quality in the Northwest Territories, on fisheries, on navigable waters, and on Wood Buffalo National Park. The Review Board will also be examining and reporting on potential environmental impacts to Indian reserve lands as a result of the timber harvesting practices which will be used to provide raw materials to the proposed mill. However, the Review Board is not empowered to consider other environmental impacts related to the harvesting of timber for the mill. These impacts are dealt with through the Timber Management Planning Process of the Alberta Department of Forestry, Lands and Wildlife.

The Review Board will also report to the Minister on the way in which ALPAC has responded to the concerns of potentially affected persons and has recognized those concerns in its plans for the mill.

The Public Hearings

The EIA which was prepared by ALPAC and made public in May of this year, is currently being reviewed for completeness by the Alberta and Federal Departments of Environment. The Departments will be advising ALPAC on any additional information which is required to complete the EIA. Then ALPAC will respond. This part of the process is called the deficiency review. When this review is completed, Alberta Environment will make copies of it available to all interested parties and the Review Board will announce public hearings to begin about four weeks later.

The specific dates of the hearings will be discussed at public information meetings with interested citizens in the various locations where they will take place. There will be both day and evening sessions so that people can make presentations at a convenient time.

Public hearings will be held in Athabasca, Lac La Biche, Prosperity, Fort McMurray, and Fort Smith in the Northwest Territories. The Review Board hopes that all potentially affected and interested citizens will be able to attend one of the scheduled hearings. However, it is prepared to consider requests for hearings in other locations. Such requests should be sent to the Review Board as soon as possible and should include reasons why the additional hearing location is needed.

The Report

After the hearings are over, the Review Board will prepare a report containing advice about the environmental acceptability of the project and terms and conditions appropriate to include in the necessary permits and licences. That is, the Review Board will recommend:

1) whether the proposed mill could be constructed and operated in an environmentally satisfactory manner,

2) what measures are necessary to reduce or remove negative impacts or enhance positive ones, and

3) if the mill is to be approved, what conditions should be attached to that approval.

This report will be made public by the Alberta Minister of Environment, in consultation with the Federal Minister of Environment, in a timely fashion.
APPENDIX B

SET OF QUESTIONS PROVIDED TO PARTICIPANTS IN PREPARATION
FOR THE TELEPHONE INTERVIEW

1. Please describe how you were involved in the Alberta Pacific Environment Impact Assessment Review.

Questions 2-9 refer specifically to Review Board/Panel Members

2. Can you describe your feelings or your attitude toward the general public's submissions during the public hearings?

3. Do you feel that the general public contributed any information which you found useful in making your final recommendations?

4. How were written submissions handled by the Board/Panel? Did you personally read every one of them? How did you decide which to read carefully?

5. What is your opinion about the calibre of the scientific submissions?

6. What was your personal definition of 'local' public? Did their presentations affect you in any way? Did you hold their presentations separately in your own mind from the rest of the public submissions?

7. Did local farmers provide you with pertinent information that no one else was able to submit? What attention did you give to this information?

8. Did you feel that aesthetic concerns or emotional submissions affected you in any way? Did you incorporate any of these in your final recommendations?

9. What component of the final report were you responsible for writing?

10. What kind of information could the public provide to assist you in making the kind of recommendations you were involved in making?

Questions 11-18 refer specifically to the Proponent.

11. What is your definition of 'local' in terms of this project?

12. What was defined as the immediate impact area for this project? How was this definition arrived at? Were the farmers in this region able to provide you with information that you found useful in preparing the EIA?

13. What was done with the concerns expressed by the farmers in this region? Did you give them any more or less attention than the concerns expressed by the general public?

14. When was contact with the local community initiated? What factors were involved in making this decision?
15. How did the second, mitigative proposal differ from the initial proposal? Were any changes made as a result of concerns expressed by the local people? By the public in general?

16. Were you able to use any information provided by the local farmers in developing plans for the mill? i.e. information on who farmed with whom, what the school bus routes were, etc. Why or why not?

17. In retrospect, would you change anything about how you went about seeking the local community’s input into your development proposal?

18. Do you feel that non-technical people have anything to contribute to an EIA process? Can you think of any way that the information that local people (i.e. farmers) provided during the EIA Review Board Hearings could be used by a proponent in planning for development?
APPENDIX C

MINISTERIAL ORDER AND TERMS OF REFERENCE FOR
THE SCIENTIFIC REVIEW PANEL

The Department of the Environment Act - Ministerial Order No. 9/90

WHEREAS the Minister of Environment (the "Minister") may establish a panel to act in an
advisory capacity in connection with any of the policies, programs, services, or other matters under his
administration.

AND WHEREAS Alberta-Pacific Forest Industries Inc. has proposed a bleached kraft pulp mill
in the County of Athabasca.

AND WHEREAS Alberta-Pacific Forest Industries Inc. has proposed further mitigation measures
to respond to the Alberta-Pacific EIA Review Board concerns about the discharge of chlorinated organics
into the Athabasca River.

AND WHEREAS it is necessary and desirable to conduct a scientific review of the improvements
to the wood-pulping process as they relate to the mitigation of the chlorinated organics as proposed by
Alberta-Pacific Forest Industries Inc.

THEREFORE I, RALPH P. KLEIN, Minister of the Environment, pursuant to Section 6 of the
Department of the Environment Act, hereby establish a panel to be known as 'the Alberta-Pacific
Scientific Review Panel" (the "Review Panel") to advise and make recommendations upon the
improvements proposed by Alberta-Pacific Forest Industries Inc. to the wood-pulping process as they
relate to the mitigation of the discharge of chlorinated organics into the Athabasca River upon the
following terms and conditions:

A. TERMS OF REFERENCE

The Terms of Reference of the Review Panel shall be to inquire into and advise the Minister of the
Environment on the improvements proposed by Alberta-Pacific Forest Industries Inc. to the wood-pulping
and bleaching process as they relate to the mitigation of the discharge of chlorinated organics into the
Athabasca River.

B. PROCEDURES

1. The Review Panel shall invite and consider timely written submissions from the public that the
Review Panel considers relevant to the proposed improvements to the wood-pulping process as they relate
to the mitigation of the discharge of chlorinated organics into the Athabasca River, receipt of submissions
from the public to be not later than Wednesday, August 22, 1990.

2. The Review Panel shall review the written submissions and determine those public submissions
which will be invited to augment their submission by making expert oral presentations to the Review Panel
and advise those invited accordingly during the time period August 22 to August 31, 1990.

3. The Review Panel shall receive oral presentations and provide for cross-examination of further
scientific evidence from those invited to augment their submissions under (2) above, and hear such presentations on September 12, 13, and 14, 1990 in Athabasca.

4. The Review Panel shall prepare its report on the basis of all submissions, the report to be completed and delivered to the Minister of the Environment when ready but in any event no later than October 1, 1990.

C. MEMBERSHIPS

The Review Panel shall consist of the members set out on the attached Schedule "A".

Dated at the City of Edmonton, in the Province of Alberta, this 12 day of July,

RALPH P. KLEIN
MINISTER OF THE ENVIRONMENT

Schedule "A"
Membership of the Alberta-Pacific Scientific Review Panel

NAME

1. Mr. Ed Brushett, (Chairman) Alberta Energy Resources Conservation Board, Calgary, Alberta
2. Dr. Malcolm Wilson, Alberta Environmental Centre, Vegreville, Alberta
3. Dr. Eric Hall, Wastewater Technology Centre, Burlington, Ontario