A SOCIAL IMPACT ASSESSMENT OF THE ELECTRIC REDUCTION COMPANY OF CANADA'S PHOSPHOROUS PLANT AT LONG HARBOUR, PLACENTIA BAY

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by

© Wanda Lynn Legge, B.A. (Hons.)

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ABSTRACT

This thesis deals with the topic of resource development from the approach of social impact analysis. Social impact assessment is a relatively new sociological procedure, having emerged from the socially aware 1960's. Social Impact Analysis (SIA) is primarily concerned with the social repercussions of resource development, its effects upon individuals and the community structure, which are investigated by sociologists.

The site dealt with in this respect is the phosphorous production plant, owned by Erco Industries of Canada, Ltd. at Long Harbour, Placentia Bay. This thesis investigates the influences that such an industry has had upon a wide range of community activities such as education, religion, and the economy. The community of Mount Arlington Heights, approximately five miles from the plant site, and less than a mile from the community of Long Harbour is also studied because of its close geographical proximity to Long Harbour. The two communities are also incorporated under one town council.

To study the impact Erco has had upon these communities community profiles of Long Harbour and Mount Arlington Heights were constructed. Through utilizing such community profiles, changes resulting from the plant's being built in the area can be more easily assessed. Three investigative strategies: 1. secondary analysis; 2. semi-structured interviewing; and 3. survey analysis, provided data for the impact assessment.

The Erco phosphorous plant is the major source of employment for the communities of Long Harbour and Mount Arlington Heights. Both communities receive numerous other economic benefits such as tax

revenue, as well as charitable donations. On the debit side Erco received many concessions from both the provincial and federal governments. The controversial power contract is but one illustration of such concessions.

Additionally, the history of the Erco plant has been plagued by pollution problems which Long Harbour residents in the main, must confront.

An evaluation of this range of positive and negative consequences for the people of Long Harbour and Mount Arlington Heights comprises the major portion of this thesis. To fully appreciate and evaluate the phosphorous plant, however, it is necessary to understand the governmental assumptions and philosophy toward economic development from which this particular resource industry emerged. Therefore, I have tried to situate the Erco plant within the sociological literature on economic development and the political models of development prevalent within Newfoundland at the time the plant was constructed. Chapter 2, in particular, reflects such an attempt.

Dedication

I wish to dedicate this thesis to my husband, Neil, without whose support and assitance, it would never have been completed.

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INTRODUCTION TO ASSESSMENT

- BACKGROUND

Introduction

Sociologists have paid very little attention to the study of resource development upon people until recently. Felt writes that resource development involves strategy of choice. There are generally several ways in which the resource can be developed. Each different method of development has different social repercussions. Felt goes on to say that just as the choice of exploitation of the resource has an effect upon the social structures, so does the social structure influence the choice of development. Thus, the sociology of resource development is aimed at studying this relationship as it develops from both directions. The decision of how the resource will be developed creates a struggle between the different groups who have a stake in the resource's development.[1]

In the case of Erco, we are not dealing with a resource that is being developed. We are dealing with an industry that has been brought into the province in exchange for several favours from the provincial government. The industry was brought in to supply employment. Still many of the things which apply to the study of resource development also apply here. There has been a choice of how to provide employment for the people. The Smallwood government had decided that large, high technology industries were the key. Other avenues were open to the government. Because there is a choice there must be a weighing of the pros and cons. All parties involved will present reasons for it being done one way, or its not being done another way. In the case of Erco, people in general were very supportive of the plant's coming. The mayor of Dunville in Placentia Bay felt it would be a boon to the area.

The locals were highly enthusiastic, and the provincial government felt that it had made a great deal for Newfoundland. It was later when the pollution problems appeared and the realization of what the energy contract meant that people came out in opposition to the plant's continued operation.

Sociological studies on resource development have generally taken one of three approaches. One approach is the study of the way in which the choice of resource development creates uneven development throughout different regions of a country. Another approach is the study of conflicts which arise between the different groups who will be affected in different ways by the development. The third approach is called a social impact analysis. Social impact analysis studies the effects of resource development on community life. It studies the way in which the lives of those involved in the development of the resource are influenced by the structure within which they find themselves. Unlike the second approach social impact analysis studies not only potential conflicts, but investigates ways in which these conflicts can be minimized and maximum gains for all parties be realized.[2]

Social impact studies have become quite important in the last few years. A new social and environmental awareness has created questions concerning a choice of resource development strategy. Social impact studies deal not only with the exploitation of a resource, but with the placement of an industry, highway, or pipeline, for example. Any new development which has the potential to alter the lifestyle of a people or the structure of a community is a possible subject for a social impact study.

The ideal impact study would be one conducted before the strategy of development was put into operation. In this way any problems between the various groups could be hopefully ironed out before the project even started. In the case of Erco the impacts upon the environment and the community were not questioned before the plant went into operation. It was only afterward when the plant was found to be responsible for pollution and the plant suffered several shutdowns that the negative effects of the plant were considered.

Thibault recommends several studies which should be conducted before any pipeline is constructed through the Yukon. For example, a study should be conducted to provide detailed information on the manpower that will be required for the pipeline.[3] Hattenhauer writes that this was a problem with regard to Erco.[4]

Very few of the first employees at the Long Harbour plant had had any experience in working with phosphorous. This led to many safety problems due to inexperience. This in turn led to discontent and strikes.

What social impact studies teach us is that we cannot arbitrarily place an industry or exploit a resource without first discovering how this placement will affect the area, and especially the people. In this way we can minimize the negative effects and maximize the positive effects.

Environmental impact assessment approach: background

Environmental Impact Assessments were formally recognized in the United States before they were in Canada. On January 1, 1970 the United States government passed the National Energy Policy Act. The

NEPA, as it came to be called, grew out of the conscious-raising sixties. Environmental issues were of profound public interest. Within a short time the policies outlined by the NEPA had begun to diffuse down to the state and local levels of government.[5]

The adoption of Environmental Impact Assessments in Canada has occurred over several decades. Formal public policy has been preceded by the work of individual professionals studying environmental impact from their own particular fields.[6]

On December 20, 1973 the federal government of Canada created the Environmental Assessment and Review Policy (EARP). The EARP presents procedural guidelines, but lacks the inspirational wording of the NEPA. The main provisions of EARP are as follows:

All federal departments, crown agencies and private companies with government contracts, grants and loans shall:

a. Take environmental matters into account throughout the planning and implementation of projects, programs, and activities that are initiated by a department or agency or for which federal funds are solicited or for which federal property is required;

b. Undertake or procure an assessment of potential environmental effects before commitments or irreversible decisions are made for all projects which may have an adverse effect on the environment;

c. Submit the assessments made for all major projects that will have a significant effect on the environment to the Department of the Environment for review;

d. Incorporate the results of environmental assessments and reviews in the design, construction, implementation and operation of

projects, giving environmental problems the same degree of consideration as that given to economic, social, engineering or other concerns; and

e. Include in program forecasts and annual estimates the funds necessary to carry out the intent of this policy and program.

The lack of inspiration in this policy is evidenced by the number of impact studies undertaken since EARP's inception. In its first 25 years only one impact study was completed (for the Lepreau Nuclear Generating Plant in New Brunswick) and eleven others were not yet completed. In a similar period under NEPA in the United States 4140 studies were produced. EARP's limited influence is partly due to its lack of commitment to environmental impact assessment beyond setting down procedures for such studies and partly due to the division of power between the federal and provincial governments.[7]

Provincial and municipal activity in the area of EIA has been very limited. The emphasis has been on environmental impact studies investigating aspects of the physical environment. Official legislation has given passing mention to an integration of the social and physical sciences in formulating an assessment, but, overwhelmingly the emphasis has been upon the environmental effects of a project. In recent years social scientists have been slowly creating a place for themselves in impact studies. Social Impact Studies are designed to study the effects of a project on an entire community or area.[8]

The relevance of sociology to SIA's

The environmental awareness which developed in the 1960's had an appearance in earlier stages of history. This is especially true

during the nineteenth century when industrializing countries underwent rapid urban growth and vast technological changes. Utopian and back-to-nature philosophies were advocated by many writers during this time.[9]

During the 1960's these philosophies were absorbed into the environmentalist movement. The environmentalist movement encompasses the belief that the quality of life at a community level is no less important than the survival of mankind on a global scale. The contemporary movement often unites environmentalism with a rejection of science.[10]

Sandbach distinguishes two major types of environmentalism. First there is the scientific or ecological environmentalism and secondly there is anti-establishment environmentalism. The scientific/ecological approach is concerned with conserving available physical and biological environment. All technological and economic changes are instituted according to this goal. Its goals are based upon a holistic approach to nature, where any impact upon one part affects the whole. Science is rejected when its application interferes with these goals. The anti-establishment approach concentrates on man's alienation from society and from nature. Advocates of this movement support the use of non-alienative technology. This movement attempts to establish a harmony between science and technology and humanistic principles.[11]

Sandbach describes two different perspectives on why the environmentalist movement developed. The first perspective develops from the joint functionalist/pluralist background. Functionalism analyses social

problems in terms of strain, stress, and anxiety. During the late 1950's and the 1960's various environmental problems were uncovered such as the Miniamata tragedy resulting from the mercury poisoning of fish, and the realization that the world's population was increasing at an alarming rate. These events lead to feelings of fear and insecurity among the general public. These stresses helped to initiate the environmentalist movement. However functionalism is inadequate to deal with the role that conflicting interests play in awakening environmental issues. The pluralist viewpoint recognizes that environmental issues involve many conflicting interests. An equitable representation of these interests, and public consensus is guaranteed, through elections and many constitutional and legal policies.[12]

The second perspective develops from Marxist and materialist philosophies. Marx interprets social problems in relation to the underlying economic organization of society. The materialist perspective views environmental issues as arising from a conflict of interests, between the middle and upper class pressure groups and activists, and the objective interests of capital. Whereas the pluralist/functionalist approach bases the growth of the environmentalist movement on generalized social strain, the Marxist/materialist approach bases its growth on conflict of interests. For the former, state intervention represents a perversion of power within society. For the latter, state intervention preserves private enterprise in advanced monopoly capitalism.[13]

The materialist perspective recognizes other processes supporting the growth of the environmentalist movement. The impact upon the

environment of modern technological developments which have grown to a scale never before realized, and the increased affluence of people, leading to greater contact with the environment in leisure activities, have combined to make environmental issues more relevant.[14] Although Sandbach has concentrated on EIA's, social impact assessments can be studied in the same historical context from these same perspectives.

Social impact studies have been largely concerned with the economic effects of major socio-economic projects. Economic effects certainly tie in closely with the health of a community. As the field of social impact study broadens, however, it is the duty of social scientists to go beyond the economic effects to study social policy, community services, and public welfare. These are a few of the areas which fall into the domain of social science.[15]

The interesting and exciting thing about impact studies is that the field is a new one. Procedures and models have, until recently, been little more than thoughts, ideas, and words on paper. It is required of the scientists conducting the studies to create these procedures and models as they go along. It is because social impact studies are so new that there can be no doubt that there is a pressing need for a more sociological approach.

Social impact assessment involves the application of social science methodology in social planning. Such assessments have developed because of the realization that technology and development programs affect social life in many ways. Government officials have an obligation to their public to investigate these effects and consider them when planning alterations in the physical and social

environment of a community or region.[16]

There are four basic elements to the concept of social impact upon a community. First, there is a defined community, with more or less stable social institutions such as educational facilities, religious affiliations, and employment structures. Secondly, there is an identifiable intervention (e.g. the construction of a phosphorous production plant), and thirdly, this intervention has effects which create changes in the communities' institutions, e.g. population expands and educational facilities are inadequate and must be expanded, religious affiliation changes, and employment patterns change as new sources of income are introduced. Finally, these changes are separate from those which result from processes which are already operating within the community.[17]

The domination of geologists, engineers, and biologists in this field has a gaping lack of information on the social implications of development activities. The effects upon individuals and the community structure have been sorely ignored. It is here that the sociologist can make a statement. A community about to experience the impact of a development project provides ample basis for study by the sociologist.[18]

The relevance of accumulated sociological research

Although the field of social and environmental studies is a relatively new one, workers in this field of research can draw upon studies which have long been subjects for sociological and anthropological investigation. These studies involve the institutional areas of community life.

Social impact assessment bases much of its direction and methodology upon other types of research, such as social-indicators research, cost-benefit analysis, and environmental and economic impact assessment. Social impact assessment is closely related to these research activities, but has its own unique properties.[19]

The goal of social indicators research is to investigate the quality of life, while the goal of social impact assessment is to investigate how the quality of life is affected by a new project. Social indicators research concentrates on presently occurring trends. Such research reacts to trends as they occur. SIA's anticipate activities and possible alternatives to action which has not yet occurred.[20]

SIA's and cost-benefit analysis share the same decision-making framework. Both types of research balance gains and losses. The former type balances social factors and community concerns while the latter deals in monetary figures. Social impact assessments tie in closely with environmental and economic impact assessments. How the citizens of a community earn a living and the amount which they earn greatly affects the way in which they organize their social life. As well, the physical environment in which people find themselves helps to determine many of the aspects of community life, e.g. whether or not the citizens can exploit traditional forms of employment. For all these reasons social impact assessments rely partly for information upon economic and environmental impact assessments. However, social impact assessments go beyond these types of research to study more extensively aspects of community and social institutions, such as education, religion, and the polity.[21]

Although social impact assessment is a relatively new form of research, it has an historical basis in the time tested procedures of community studies. Traditionally, many community studies have investigated the changes that certain social phenomena have created in community social life. Such studies provide useful insights into future SIA studies. However SIA's differ from traditional community studies in that they are designed to be used in the public decision making process. Community studies are just that, studies of community life, descriptions of the social organization.[22]

The establishment of a mining operation, oil pipeline, complex industry or other development has the potential to affect a wide range of community and social life. There will be a new source of employment and income. Workers will be brought in during construction. Other workers will arrive seeking employment once the operation starts up. Small businesses may be formed to supply the larger industry. These are just a few of the more direct and visible areas of social life which may be affected. Physical environmental effects are quite important, but it is the duty of the sociologist to study how a new project affects the human and social environments.[23]

The purpose of a Social Impact Assessment is to anticipate how a development or project will affect an area or community before it is actually implemented. The object is to form a precise overall picture of potential social effects. This picture must incorporate the various viewpoints within the community, such as various classes, interest groups and whatever other salient groups may exist. Once this picture is created the community has the information at its disposal to help

it make choices concerning the proposed development. These choices will be made with consideration of whether to encourage the project, and if so, how to minimize anticipated problems and maximize the benefits. Seen in this light, Social Impact Assessment is best understood as a particular variety of applied sociology.[24]

The utility of ex post facto application

Many Social Impact Assessments today are conducted after the fact. The study outlined in this paper is no exception. In post-impact studies much of the analysis is historical. To undertake such an analysis the researcher investigates the social institutions as they existed in the community before the project was undertaken, and the social institutions existing after the project is in operation. The researcher then attempts to summarize the changes which have occurred and distinguish those resulting from the new project, from those which would have happened without the project being established. The researcher relies upon such sources as census, tax records, land-use surveys, and private records such as company payroll data. Further analysis leads the researcher to newspaper analysis, records of voluntary associations, and interviews with community leaders and members of the general public.[25] Similar to traditional studies of community change ex post facto social impact studies differ in the focus upon the effects of a particular resource or economic development with investigation into community change being related to its influences.

Long Harbour has been the home of the Erco phosphorous plant since 1968. There is still, nevertheless, utility in assessing, in an

ex post facto way, the impact of the project upon the people. Such utility consists primarily in uncovering areas of conflict between communities and the resource development so that future confrontations may be mitigated if not eliminated. This is the motivating force behind studying the Erco phosphorous plant.

Many researchers do not regard post-impact studies as true social impact assessments. Ex post factor studies are not part of the decision making process in public planning. Therefore they are of limited value in helping to alleviate problems which may be caused by a development. It is possible to use post-impact assessments as a political tool, to appease a public, unhappy with development. Post-impact assessments can be used to suggest compromises or adjustments in a development project. However, such studies are not as effective in solving problems with a development which can be discovered and anticipated before the project is initiated.

In order that SIA's become importantin the decision making process it is necessary that; 1. social impact assessments are conducted totally independent from those involved in the development, and 2. they have sufficient weight to prevent a project from going ahead if the negative effects of the development far outweigh the positive effects.

The site

The Social Impact Assessment of the Electric Reduction Company of Canada's plant in Placentia Bay will cover many aspects of social life. The plant itself is situated in the community of Long Harbour. Besides this town the community of Mount Arlington Heights has also

had several influences resulting from the plant. Mount Arlington Heights is approximately less than a mile from Long Harbour, but its unique geographical location prevents a view of the plant.

There has been a great deal of adverse publicity concerning the plant. Most of it has dealt with the pollution problems experienced by the plant, and the low rate charged the plant for the large amount of electricity it uses. The actual pollution problems are better studied by engineers and biologists. The way in which these problems affect the quality of life in Long Harbour is the duty of the sociologist. A combination Environmental and Social Impact Study would have enabled the people involved to anticipate these problems and hopefully minimize their harmful effects.

The context

The phosphorous plant at Long Harbour (hereafter referred to simply as Erco) was chosen for a number of reasons. First, there was a lot of publicity and rumour concerning Erco which initiated interest: secondly, I believe that sociology should display a practical or useful side as well as a more academic side and an impact assessment may, partially at least, have some relevance to communities and non-sociologists. This should provide information for many people, such as the citizens of Long Harbour/Mount Arlington Heights, and the employees of Erco Industries, as well as government planners. In a more limited sense, the people of Newfoundland and Labrador may also derive some advantage as information from an assessment on this resource development may assist in their non-community context. Finally, the site was chosen as a result of the controversy surrounding

the plant. Since construction of the plant first began many people have had strong feelings toward Erco, both positive and negative. The more I heard the more it seemed important to sort through all the opposing ideas and assess, in light of as much information as is available, the plant's impact upon the area in particular, and upon Newfoundland more generally.

This study begins with the history of Long Harbour and Mount Arlington Heights long before the construction of the plant and follows the communities up to 1982. The focus will be upon certain central institutional areas of Long Harbour and Mount Arlington Heights, as well as a number of more general social and economic parameters of community life. Among the particular institutional areas and more general community features assessed are the following.

Demographic change and economic opportunity

Basic demographic or population changes and alterations in employment patterns are obviously among the first community characteristics to be affected by resource development. Changes in employment opportunities for women and youths are of special interest in this study.

Polity

Of particular interest here is the impact of the plant upon community level politics. Long Harbour did not have a town council when Erco was constructed, but it has had one for the last five years. The community was incorporated and a town council formed to secure more funding and better infrastructure for the community. The council was

not formed specifically to deal with Erco Industries, although it has been operated as a mediator between the community and the plant's officials. Meetings between the council and management personnel from the plant are carried out on a regular basis.

Social and physical effects

The effects of the plant upon the environment of Placentia Bay has been the subject of several studies, by both individuals and government agencies. These studies have grown out of public outcries; against fluoride emissions from the plant which are believed to be responsible for killing the vegetation surrounding the plant, and against the Red Herring Scare of the Spring of 1969. Of concern in this study is the impact such pollution may have had on the perceived quality of life among community residents.

Economy

Economic considerations are usually given foremost consideration in impact assessment. While very concerned with other social effects, economic effects must also receive important consideration. Questions considered here include: How much money has Erco injected into the local economy? How have the patterns of employment changed? How have local businesses been affected? Have new businesses been established in direct response to the plant's establishment? Finally, what impact have these economic changes had on the population characteristics and life styles of inhabitants?

Educational institution

New workers for the Erco plant brought with them new families.

The children of these families had to be educated. How the schools of Long Harbour/Mount Arlington Heights were able to accommodate these children is the major area of investigation concerning the plant's impact upon the educational system. Different requirements may have been demanded of the local schools through the various levels of the plant's history, construction, start-up, and production.

Social problems

The influx of workers and their families brought new people and the potential for new problems. Many writers have commented on the strong relationship between resource "boom" times and social "problems". In this assessment it will be explored whether such a relationship held (or holds) for either community at some particular stage of the plant's history or whether such a relationship did not occur. If the latter prevailed, are there special reasons for it?

Provincial context

Thus far, specific areas which might be termed "immediate environment" of the plant have been described. While not studying it in a systematic way, it is important to locate this project in the larger context of Newfoundland. Some obvious effects will be mentioned to provide a broader context for the study. These far-reaching effects involve the power contract between the plant, (a result of Joseph Smallwood's development strategy for Newfoundland) and the Newfoundland government and the income injected into the province through employment and the support of local businesses. As well, it is crucial to place the Erco plant firmly within the development model with which politicians

planned Newfoundland's future.

Conclusion

This social impact thesis covers a wide range of topics and utilizes a wide range of research methods (see Chapter 4). It is primarily descriptive in nature though not purporting to be a community ethnography. Rather, it is a discursive, sociologically informed commentary on community change following from a major resource development.

Footnotes

[1]L. Felt, "The Sociology of Natural Resources Development and Its Relevance to the East Coast Fishery", unpublished paper (St. John's), pp. 3-4.

[2]Ibid., pp. 4-5.

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[5]A. Armour, "Understanding Environmental Assessment", Plan Canada 17:7 (1977), p. 12.

[6]Ibid., p. 15.

[7]Ibid., pp. 15-17 and S.L. Earn, "Environmental Assessment and Municipal Planning Problems and Prospects", Plan Canada 17:1 (1977), p. 16.

[8]S. Veit, "Communities in the Way: Social Impact Studies", Canadian Welfare 51:1 (1975), p. 9.

[9]F. Sandbach, Environment, Ideology and Policy (Montclair, 1980), p. 21.

[10]Op. Cit.

[11]Ibid., pp. 21-8.

[12]Ibid., pp. 29-34.

[13]Ibid., pp. 34-41.

[14]Ibid., pp. 36-7.

[15]Veit. p. 9.

[16]R.T. Bowles, Social Impact Assessment in Small Communities (Toronto, 1981), p. 5.

[17]Ibid., p. 7.

[18]K. Thompson, Auguste Comte: The Foundation of Sociology (New York, 1975), p. 119.

[19]Ibid., pp. 29-35.

[20]Ibid., pp. 29-30.

[21] Ibid., pp. 30-3.

[22] Ibid., pp. 35-9.

[23] Veit, p. 9 and R.A. Lucas, Minetown, Milltown, Railtown (Toronto, 1971).

[24] Veit, p. 9 and Pipeline Association Assessment Group, Environmental and Socio-Economic Effects of the Proposed Canadian Arctic Gas Pipeline on the Northwest Territories and Yukon (Ottawa, 1974).

[25] Bowles, pp. 10-5.

ECONOMIC DEVELOPMENT

Introduction

Canada's economic development has historically relied heavily upon external forces, a condition supported by specific government policies and programs. By the time that Newfoundland entered into the Confederation of Canada in 1949, foreign developers were a major presence in the commercial and industrial sectors of the country. Under the leadership of Joseph R. Smallwood, Newfoundland's premier for 22 years, the strategy of relying upon foreign investors for economic development was continued.

Development in Canada

Canada's development strategy has been called "industrialization by invitation".[1] Shortly after Confederation the federal government promoted the construction of a trans-continental railway, thereby supporting the growth of resource development and private enterprise. Patent regulations were established which resulted in an inflow of patents from the United States. This inflow meant that the risks of invention, and the initial investments were borne by Americans. A highly protectionist tariff policy, adopted by Canada from 1879 to 1887, was designed to encourage a variety of American industrialists to establish throughout the country. By using imported patents and industrialsts Canadian industrialists were not motivated to develop on their own.[2]

Between 1896 and 1921 the Prairie provinces of Canada became the focus of economic growth, as capital and labour poured into the West. Although heralded as a golden age in Canada's economic history, it was a time during which local developers concentrated on commercial

activities or the production and export of staples. At the same time Americans were investing directly into manufacturing and resources industries. In 1914 only 10% of capital formation in Canada was involved in American branch plants. However, American ownership was predominately concentrated in the industries with maximum growth potential in the twentieth century; electrical goods, chemicals, petroleum, rubber, and automobiles. For these reasons it was extremely difficult for Canada to make the transformation from commercialism to capitalism.[3]

Development in Newfoundland

Newfoundland's history, like that of Canada's, reveals a pattern of foreign control and investment. Great Britain enacted specific policies; anticolonization and a rigid credit system[4] which made independent commodity production virtually impossible. These policies tied Newfoundland's development to the wishes and plans of British merchants, who restricted their activities to the circulation and trading of goods instead of the local production of them. The actual surplus procurred from the development of Newfoundland's resources was exported out of the region and further potential surplus was never realized because the British merchants had not expanded into secondary production.[5]

Canada's National Policy brought secondary manufacturing to the Maritimes for a brief period, but Newfoundland had not yet joined Confederation and did not enjoy any of its benefits. During the second half of the nineteenth century, in an attempt to concentrate development on import substitution, Newfoundland adopted its own National

Policy designed to stimulate growth and encourage local manufacturing. Further efforts involved providing a railway and tariffs (which at times exceeded those set by the Canadian government). The results were not favourable.[6]

Around the turn of the century the emphasis in development was once again moved to export led growth. The abundance of raw materials in Newfoundland was used to attract industries from Western Europe and the United States. Newfoundland's role in its own development became one of providing cheap materials and an ample supply of labour for industries requiring large amounts of capital. The path toward foreign controlled exploitation of Newfoundland's resources for export was set. Little effort was made to ensure Newfoundland's involvement in or control over these resources. Local entrepreneurs with limited capital could not compete with the wealthy foreign investors and often left the country.[7]

Smallwood's development policies

Once Newfoundland had become part of Canada, Premier Smallwood encompassed the notion of export led growth in a specific development strategy. Smallwood was particularly interested in attracting huge industries to the province because it was believed that they would create the maximum number of backward and forward linkages and would cause a series of multiplier effects by creating other jobs, increased incomes and consequently more taxes.[8] This was the motivation behind a major newspaper campaign in seven countries, which resulted in Erco being invited to settle in the province.

Essential to the support of industry is a highly skilled

well-educated work force and a comprehensive network of transportation and communication. After Confederation Premier Smallwood set about to provide these important facilities. Regional and vocational schools were built throughout the province; an elaborate system of bursaries and scholarships was established to compensate for the low income of the average Newfoundland family. For a time this even included a free university education. By 1960 Smallwood had negotiated 90% of the cost of a highway link to the Trans Canada Highway. To support this highway the provincial government built a network of secondary roads, totalling some 5,000 miles. An airline was started. To further assist the accumulation of a readily available, concentrated work force the provincial government established a resettlement or centralization program in 1953. In 1965 the federal government became involved in a second resettlement program in Newfoundland. Coupled with Smallwood's attempts to alleviate the province's poor education and isolation were policies designed to capitalize on the province's natural resources.[8]

If the province was to be industrialized industry needed electricity. To this end Smallwood's government began to develop the Churchill Falls. In the 1960's it was impossible to transport this power over long distances under water so the provincial government began developing the 600,000 horsepower potential of Bay d'Espoir on the island's south coast. Smallwood did not try to enlist private industry to develop this power. The power was offered at cheap rates to attract industrialists.[9] It was this concession which brought Erco to the province.

The offering of generous concessions was a major facet of

Smallwood's development strategy. As well as cheap electrical power, these concessions included tax relief, free land, government loans and direct grants. Apart from the province's cement mill and gypsum board plant which were established by the government itself and thus were constructed without generous concessions, all other industries in the province were attracted here by offering concessions. (Once operating the cement mill and gypsum board plant were transferred to private investors.)[10]

DREE

The development strategy of the Smallwood administration, designed to attract large industries to the province with the promise of generous concessions found support in various federal policies and programs. In 1969 the Federal government established the Department of Regional Economic Expansion (DREE) in response to an awareness of regional economic disparities. It was believed that the cause of the economic disparities could be found in the regions themselves. To compensate for a region's inadequacies DREE provided financial aid and basic infrastructure based upon recognized need, with the ultimate goal of attracting private industry to poorer areas of the country.[11]

DREE has provided billions of dollars in direct and indirect incentives to industries to settle in the Atlantic provinces. Erco Industries was among the recipients. (See Chapter 5, page 85). Like Erco Industries most of the industries receiving financial assistance through DREE are not locally controlled, perpetuating the trend of foreign decision makers controlling the region.[12]

Growth poles

The federal and provincial governments granted the generous concessions they did and actively campaigned to bring the branch plants of multinational corporations to the province because it was felt that the industries attracted to the province would bring benefits that far outweigh any gifts. Smallwood believed that large scale industries such as the phosphorous plant would be growth poles, generating a network of linkages with other complementary industries and businesses, thus generating employment and income. An input-output model explains the growth which Smallwood anticipated.

An input-output model of inter-industrial linkages divides the economy into two sections, the suppliers and the purchasers, each in turn divided into two types. Suppliers and purchasers create forward and backward linkages. Suppliers produce a product which is utilized in the process of the central industry, the growth pole. Primary suppliers utilize resources they control and sell directly to the growth pole. Such suppliers do not create further linkages, unlike intermediate suppliers who buy materials which they process into products which are sold to other intermediate suppliers and further processed, or are sold to industries which process the product until it is ready for the marketplace.[13]

Purchasers are divided into intermediate and final. Intermediate purchasers buy the products of suppliers to be used in further processing. Final purchasers buy the goods of suppliers to be processed into the final saleable product.[14]

It was expected that industries such as Erco would develop

inter-industry linkages with suppliers and purchasers. A network of industries would develop in the region surrounding the plant. As well as creating the need for other complementary industries it was expected that this high-technology, capital intensive industry would have multiplier effects, generating growth in employment, income, and local businesses, such as shopping centres and other service related businesses. This has not been the case.

Storey writes that the industries built in the province as part of Smallwood's development strategy have not been very successful. Such industries are large scale, capital intensive firms relying upon imported resources and materials, and are susceptible to world market fluctuations. These projects relied upon foreign capital provided by foreign based firms. In turn the profits left the province to go to their foreign owners.[15]

The raw materials used in the production of phosphorous are phosphate rock, coke, silica, and electrical power. The silica is mined in Newfoundland by the Dunville Mining Company which is owned by Erco. The silica is purchased from the provincial government at the highly subsidized rate of 10¢ per ton (in the United States it is sold for $4.30 a ton). The electrical power of which Erco uses enormous amounts, is also purchased from the provincial government at a very low rate.[16] The phosphate rock is shipped in from Florida while the coke is purchased from several different countries. The manufactured phosphorous is not used locally except indirectly in consumer products.

The backward and forward linkages anticipated with local industries did not occur. Erco has not been integrated into the local

economy. There is no network of companies in which Erco operates as an integrated unit. There are several local companies (see Chapter 5, pages 99-100) which count Erco as an important customer, but for the most part they are situated in St. John's not Placentia Bay. Their services are not directly linked to the production of phosphorous and these businesses rely upon other important customers as well.

Erco has not generated the growth and development which was expected of it. (This will be discussed more extensively in Chapters 5 and 6). The multiplier effects from Erco Industries have been very limited. Long Harbour has changed very little since the plant was built. The small family owned stores which exist in the community were there in the early days of the plant. The expected shopping centre, bank, and other service businesses did not materialize. A car body work shop has recently opened up, but the local garage closed when the person running it got out of the business and was not replaced.

Erco management claims that several hundred people are indirectly employed by the phosphorous plant through service industries, suppliers and so forth. Several dozen are employed by the local industries mentioned previously and Erco is obviously partially responsible for supporting these. By stretching the multiplier effects throughout the plant's employees, the services they use, the incomes they spend, the taxes they pay and so forth it is conceivable that Erco contributes to the employment of several hundred people beyond those few hundred directly employed by the plant. Such a generalization can be made for any large industry in Newfoundland and the growth and development is no where near what was expected by the Smallwood government when Erco

was invited to build at Long Harbour.

Theoretical background

Various theories have provided the bases from which the economic development of Newfoundland has been studied. These theories have greatly influenced the policies and programs established by governmental agencies. The following is a brief introduction to four of the more dominant themes and how they have helped to shape government policy or can be used to study this policy: 1. dependency theory; 2. regional science; 3. the neo-classical theoretical approach; and 4. staples approach developed in the writings of Harold A. Innis. Some of the components necessary to a Marxist approach to development in Newfoundland will also be briefly discussed as they point out new issues which must be dealt with by economic policy makers.[17]

Dependency theory

This theoretical approach describes a relationship between two areas, the metropolis and the hinterland, by where the metropolis, through its high concentration of capital and technology controls how the natural resources of the hinterland will be exploited. The people within the hinterland have very little control over their own development because the decision makers live outside the region. Local concerns are sublimated to those of the metropolis. Potential profit from resource development which could be absorbed into the local economy and invested in locally controlled development projects is taken out of the area by foreign developers. It is to the advantage of the metropolis that the hinterland remain underdeveloped and therefore dependent,

making it easier to control and exploit.[18] The major actors in the metropolis in recent decades have been multinational corporations backed by vast amounts of capital and a network of branch plants extending around the world.[19]

Earlier in this chapter it was shown that the governments of Canada and Newfoundland actively supported and encouraged foreign investors to enter the region to exploit thelocal resources. The economic ramifications of this campaign in terms of the specific example of Erco Industries, Long Harbour were discussed extensively in this chapter in the section on growth poles. (See also Chapter 5). The metropolis /hinterland relationship exists between Newfoundland and the powerful multinational Tenneco Incorporated. Control of the phosphorous plant and of the use of natural resources lies outside the province. On the other hand very little profit is generated back into the area, perpetuating the local dependency upon outside investors. Dependency theory can assist planners in exploring this type of development strategy.

Regional science

In establishing a development strategy designed to attract new industries to the province Premier Smallwood drew heavily upon regional science, a theoretical approach to why industries settle in particular areas. The importance of concentrated populations, providing accessible skilled labour, good transportation and communications systems, and the necessary raw materials are stressed if industries are to be attracted to the area. Once an industry settles in an area that area is a potential growth pole spawning offshoot industries and generating

employment.[20] It is apparent in the sections of this chapter dealing with Smallwood's development policies that they were geared toward attracting industries and creating growth poles. Examples of these policies are manifested in the resettlement program, extensive and rapid improvements to the educational system, and the offering of generous incentives and concessions.

As previously stated the federal Department of Regional and Economic Expansion was created in an attempt to overcome the regional disparities in certain areas of Canada. It was believed that the causes of these disparities could be found in the areas themselves. This belief developed out of regional science as do several of the major programs of DREE such as improving infrastructure in hopes of attracting new industries and providing subsidies to industries to help develop the employment and export base of a region. Migration has been advocated minimally by DREE, but where it has it can be tied to regional science as well as to the neo-classical theoretical approach.[21]

The neo-classical theoretical approach

The neo-classical approach concentrates on the flexibility in prices and wages, the mobility of labour and capital, and the ability of market forces to solve their own problems. In looking at Newfoundland the neo-classicalists explain the region's under-development in terms of the region's disadvantages such as limited sized markets, a poor resource base, its isolation, and the low productivity of its workers. These circumstances create an economy with little economic opportunity, low income and high levels of unemployment.[22] The neo-classicalists oppose government intervention while

government intervention has been quite prevalent in Newfoundland according to the dictates of regional science. However intervention has been largely concentrated in attracting new industries to the province. It is believed that once these industries are established there will be an automatic snowball effect of growth generated which will offset the previously mentioned disadvantages of the area. This ties in with the neo-classical approach which believes that market forces will correct their own problems. This belief also forms the basis of one of DREE's most important programs, that of providing equalization payments to poorer areas in the expectation that such payments will eventually even out the region's disparities.[23]

Staples theory

The staples approach developed by Harold A. Innis ties economic development to the unique characteristics of the staples a region exports. Economic life as a whole is determined by the geographical background and technological exploitation of the staples. Unlike the neo-classicalists Innis expands economic processes beyond the market-place to explore the effects upon the cultural structure of society. Newfoundland's development has historically been dependent upon the cod fishery. This dependence upon a single staple lead to the prevention of colonization by powerful British merchants.[24] Colonization was essentially illegal in Newfoundland until 1832 when Newfoundland was granted responsible government, long after its Maritime neighbours had established governmental institutions. Industrialism entered the cod fishery, expanding the capacity and improving the product in Scandanavia and European countries which pushed Newfoundland out of

the European markets. Newfoundland was forced to export to tropical areas, notably the West Indies, where cod prices were subject to large fluctuations in price which lead to the formation of the truck system and affected the revenues of the government which was dependent upon tariffs from the sale of cod. Finding it difficult to compete with products from more industrialized regions, lacking the support of municipal institutions and a more diversified tax base, with poor success in an attempt to attract industries to the area, and unable to cope with a depression on world markets due to the poor price of cod and its own dependence upon imported manufactured supplies, Newfoundland was weakened. This resulted in the loss of responsible government in 1933 when it was replaced with a government by commission.[25]

Like regional science staples theory determines the development of an area by its own environment and the resources it possesses. Staples theory places much more emphasis upon the unique technological exploitation of these resources. Staples theory also shares common ideas with dependency theory. Both support that economic development is determined by the process of exchange in the marketplace. For both capitalism is expanded to the new world through trade and exchange. Neo-classicalists perceive that the spread of capitalism will create an integrated, interdependent global development through the development of unique regional advantages. Neither staples theory nor dependency theory supports this proposition, pointing instead to dependency through uneven trade relations or reliance upon external capital respectively.[26]

Staples theory is important in describing the ramifications of dependence upon the export of a single staple product. This sole

dependence contrasts sharply with the development strategy of Smallwood who sought to de-emphasize the fishery and diversify the employment and revenue base for the province, perhaps in response to the region's historical experience outlined in staples theory.

Marxist approach

Staples theory and dependency theory are each often associated with a Marxist approach to economic development. However, in contrast to Marx, both define capitalism in terms of trade and exchange in the marketplace. Marx defined capitalist in terms of a mode of production which is characterized by a unique social relation of production whereby workers are separated from the means of production and must sell their labour for a wage in order to make a living. Staples theory states that the unique characteristics of the exportable staple determines how society will unfold. For Marxists this de-emphasizes the role of humans in their own historical processes. Marxism regards history as the development and transformation of the social relations of production which point dramatically to the circumstances of the people involved while recognizing their limited control over the process.

Marxist treatments of development in Newfoundland point not to its exploitation by other regions per se as does dependency theory and not to the inadequacies of the region to develop as does regional science. Marxists write that capitalism itself is responsible for the region's underdevelopment. By actively supporting the capitalist industrial exploitation of our resources government policies have helped to bring about this situation. The resettlement program,

emphasis upon education, and the encouragement to "burn your boats" and migrate to the cities provided industry with an available, accessible work force. However, industries such as Erco could absorb only limited numbers of workers which created a reserve army of unemployed workers, who separated from the traditional means of livelihood were dependent upon the capitalist sector for access to the means of production. Based upon the goal of maximization of profit, capitalist ventures use labour to support this goal. When markets are poor the labour force is reduced in order to reduce expenses. In times of good markets the labour force is expanded. Ultimately capitalist ventures operate for their own interests, not for those of the local people.[27]

Conclusion

The development strategies characterizing Canada as a whole and Newfoundland specifically point to a heavy reliance upon foreign investment and control. This has combined with a belief that large, capital intensive industries will instantly spur development and consequently prosperity for any region in which they settle. Smallwood enacted specific policies and campaigns to bring this about. The result was the establishment of Erco Industries in Newfoundland. However this company did little to generate new growth beyond its capacity as a source of employment. By studying Erco future planners can recognize why the expectations surrounding the plant did not occur and organize future developments with the aim of avoiding other experiences like this situation.

Various theoretical approaches can be applied to this study of development in Newfoundland. All recognize Newfoundland's traditional

condition of underdevelopment in comparison to neighbouring regions, but each point to different causes. The dominating force behind development policy has been regional science which equates development with industrialism. Neo-classicalism also ties in here because the belief is that industries will by their own nature generate development, thus evening out disparities. Staples theory has pointed to a restrictive reliance upon a single product, cod which motivates policy makers to diversify, often relying upon external developers. Dependency theory and a Marxist approach point to new issues which must be approached in light of experiences such as that of Erco which suggest that other development strategies with emphasis upon local control and labour force absorption may be better suited to the economic prosperity of Newfoundland. All of these issues are ones which planners must consider and aspects of past governmental policy and specifically the Erco experience can be helpful in this consideration.

Footnotes

[1]R. T. Naylor, The History of Canadian Business 1867-1914 : Volume Two, Industrial Development (Toronto, 1975), p. 276; and T. J. Downey, "Feast or Famine: The Political Economy of a Community of Single Enterprise"; in Case Studies in Underdevelopment, edited by the Waterloo Public Interest Research Group (Waterloo, 1980), p. 27.

[2]Ibid., pp. 276-8, 38-64 and A.M. Sinclair, "Problems of Underdevelopment in Atlantic Canada, with Special Reference to Nova Scotia", in Problems of Development in Atlantic Canada, edited by The Royal Society of Canada in Association with the Canadian Sociology and Anthropology Association (Ottawa, 1975), p. 62.

[3]Naylor, pp. 283-4 and D. McNally, "Staple Theory as Commodity Fetishism: Marx, Innis, and Canadian Political Economy", Studies in Political Economy: A Socialist Review 6 (1981), p. 55.

[4]Powerful merchants from the West Country of Great Britain were able to manipulate legislation in their interests which made colonization in Newfoundland essentially illegal until 1832 when the region was granted Responsible Government. The truck system was a rigid credit system which tied the fisherman dependently to his merchant supplier. The merchant would extend credit to the fishermen supplying him with gear and supplies to last during the fishing season. At the end of the season the fishermen would bring his catch to the merchant who would deduct the debt and give the difference to the fishermen. The difference would hopefully cover the cost of winter supplies. If not the fishermen went further into debt, next season's catch already committed. This system lasted the better part of the 1800's.

[5]J. A. Watt, "Underdevelopment in Atlantic Canada", in Case Studies in Underdevelopment, edited by the Waterloo Public Interest Research Group (Waterloo, 1980), pp. 18-22, and S. Antler, "The Capitalist Underdevelopment of Nineteenth Century Newfoundland", in Underdevelopment and Social Movements in Atlantic Canada, edited by R. J. Brym and R. J. Saucouman (Toronto, 1979), pp. 181-94.

[6]D. Alexander, "Development and Dependence in Newfoundland 1880-1970", Acadiensis IV:1 (1974), pp. 8-11.

[7]Op. Cit.

[8]R. Matthews, "The Pursuit of Progress: Newfoundland's Social and Economic Development in the Smallwood Era", Social Science Monograph II (1978), pp. 27-35, 40-3.

[9]Ibid., pp. 42-3.

[10]Ibid., p.42-5 and Royal Society, pp. 122-3 and Economic Council of Canada, Living Together: A Study of Regional Disparities (Ottawa, 1977), p. 24.

[11]Watt, pp. 22-3.

[12]R. J. Brym and R. J. Saucouman, ed., Underdevelopment and Social Movements in Atlantic Canada, introduction (Toronto, 1979), p. 11 and H. Veltmeyer, "The Capitalist Underdevelopment of Atlantic Canada in Brym and Saucouman, eds., pp. 24-5, R. Matthews, pp. 8-9 and "Urban Development and Economic Growth in Atlantic Canada", P. A. Baron, The Political Economy of Growth (New York, 1962), p. 183.

[13]K. J. Storey, "Inter-Industry Relationships and Regional Development Strategies: An Analysis of Industrial Groupings in the Newfoundland Space-Economy", unpublished Phd. thesis (University of Western Ontario, 1977), pp. 113.

[14]Ibid., pp. 113-114.

[15]Ibid., p. 90-96, 110-14, 156-8, 164.

[16]Newfoundland Provincial Statutes, "Electric Reduction Company of Canada Limited (Agreement) Act", (St. John's, 1966-67), pp. 280-1.

[17]Sinclair, pp. 59-61.

[18]Ibid., p. 61 and Matthews, "Urban Development", p. 7 and Veltmeyer, pp. 18-19.

[19]R. J. Barnet and R.E. Muller, Global Reach: The Power of the Multinational Corporations (New York, 1974), pp. 14-8, 34, 148-52, 256-8 and T. Wallerstein, The Modern World-System (New York, 1974), pp. 16, 38, 348-50 and K. Levitt, Silent Surrender (Toronto, 1970), pp. 19-24.

[20]Economic Council, pp. 28-9.

[21]Ibid., p. 30.

[22]Ibid., p. 26-7, Royal Society, p. 62 and Sinclair, p. 60.

[23]Economic Council, p. 30, Watt, pp. 22-3 and McNally, pp. 42-44.

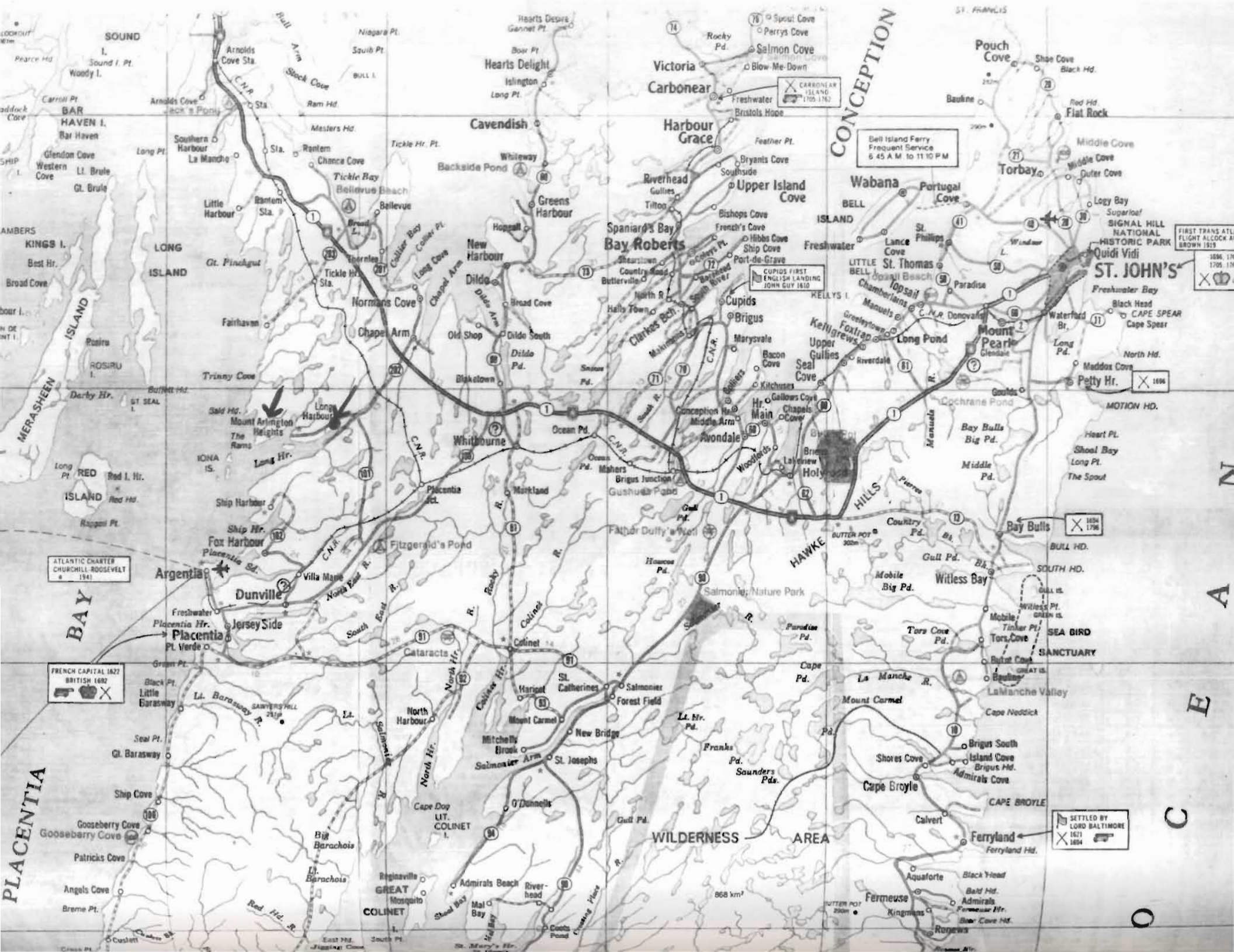
[24]McNally, pp. 39-42.

[25]H. A. Innis, The Cod Fisheries: The History of An International Economy (Toronto, 1954), pp. 1-11, 375-500.

[26]McNally, pp. 40-57.

[27]Ibid., pp. 45-7, Antler, pp. 188-98, and Veltmeyer, pp. 28-31.

HISTORICAL BACKGROUND


PLACENTIA BAY
ATLANTIC OCEAN
CONCEPTION BAY
HAWKE HILLS
BAR HAVEN I.
SOUND I.
LONG ISLAND
KINGS I.
BELL ISLAND
RED ISLAND
ROSIRU I.
IONA IS.
KELLYS I.
Arnolds Cove Sta.
Southern Harbour
La Manche
Glendon Cove
Western Cove
Lt. Brule
Gt. Brule
Little Harbour
Bellevue
Bellevue Beach
Tickle Bay
Chance Cove
Rantem Sta.
Normans Cove
Chapel Arm
Fairhaven
Trinny Cove
Derby Hr.
Mount Arlington Heights
The Rams
Long Harbour
Long Hr.
Placentia Jct.
Ship Harbour
Ship Hr.
Fox Harbour
Argentia
Dunville
Villa Mare
Freshwater
Jersey Side
Placentia
Pt. Verde
Placentia Hr.
Placentia Sd.
ATLANTIC CHARTER CHURCHILL-ROOSEVELT 1941
FRENCH CAPITAL 1622 BRITISH 1682
Little Barasway
Lt. Barasway
Gt. Barasway
Seal Pt.
Ship Cove
Gooseberry Cove
Patricks Cove
Angels Cove
Breme Pt.
Custers
Arnolds Cove
Stock Cove
Ram Hd.
Masters Hd.
Tickle Hr. Pt.
Backside Pond
Whiteway
Cavendish
Hearts Delight
Islington
Hearts Desire
Niagara Pt.
Squib Pt.
Boar Pt.
Long Pt.
Greens Harbour
New Harbour
Dildo
Broad Cove
Dildo South
Old Shop
Blakelown
Dildo Pd.
Whitbourne
Ocean Pd.
Markland
Fitzgerald's Pond
Villa Mare
Cataracts
Jersey Side
Colinet
Harbour Mille
Salmonier
Forest Field
St. Catherines
Mount Carmel
New Bridge
St. Josephs
Mitchells Brook
Salmonier Arm
North Harbour
North Hr.
Cape Dog
LIT. COLINET I.
O'Donnells
Bit Barachois
Lt. Barachois
Reginaville
GREAT COLINET
Admirals Beach
Riverhead
Mal Bay
Shoal Bay
Hall Bay
Coots Pond
Crawleys Head
Victoria
Carbonear
Freshwater
Bristols Hope
CARBONEAR ISLAND 1705-1762
Salmon Cove
Perrys Cove
Blow-Me-Down
Sprout Cove
Rocky Pd.
Harbour Grace
Feather Pt.
Bell Island Ferry Frequent Service 6.45 A.M. to 11.10 P.M.
Bryants Cove
Southside
Upper Island Cove
Riverhead
Gullies
Tilton
Bishops Cove
French's Cove
Hibbs Cove
Ship Cove
Port-de-Grave
Spaniard's Bay
Bay Roberts
Shearstown
Country Road
Butlerville
North R.
Hall's Town
Clarkes Bch.
CUPIDS FIRST ENGLISH LANDING JOHN GUY 1610
Cupids
Brigus
Marysvale
Bacon Cove
Kitchuses
Conception Hr.
Middle Arm
Avondale
Main
Chapels Cove
Seal Cove
Upper Gullies
Riverdale
Kelligrews
Foxtrap
Greenstown
Manuels
Chamberlains
Topsail
Paradise
Portugal Cove
Wabana
Freshwater
Lance Cove
St. Philips
LITTLE BELL
St. Thomas
Topsail Beach
Pouch Cove
Shoe Cove
Black Hd.
Baulne
Red Hd.
Flat Rock
Middle Cove
Outer Cove
Torbay
Logy Bay
Sugarloaf
SIGNAL HILL NATIONAL HISTORIC PARK
Quidi Vidi
ST. JOHN'S
Freshwater Bay
Black Head
CAPE SPEAR
Cape Spear
Waterford Br.
Mount Pearl
Glendale
Long Pond
Cochrane Pond
Petty Hr.
Maddox Cove
North Hd.
MOTION HD.
Heart Pt.
Shoal Bay
Long Pt.
The Spout
Bay Bulls Big Pd.
Middle Pd.
Bay Bulls
BULL HD.
SOUTH HD.
Witless Bay
Witless Pt.
GULL IS.
GREEN IS.
SEA BIRD SANCTUARY
Tors Cove
Butter Pot
Baulines
LaManche Valley
Cape Neddick
Brigus South
Island Cove
Brigus Hd.
Admirals Cove
Shores Cove
Cape Broyle
CAPE BROYLE
Calvert
Ferryland
Ferryland Hd.
SETTLED BY LORD BALTIMORE 1621 1694
WILDERNESS AREA
Aquaforte
Black Head
Fermeuse
Admirals
Ferryland Hr.
Bear Cove Hd.
Ragnes
Witless Bay Big Pd.
Gull Pd.
Country Pd.
Mobile Big Pd.
Tors Cove Pd.
Cape Pd.
Paradise Pd.
Franks Pd.
Saunders Pds.
Lt. Hr. Pd.
Mount Carmel
Gull Pd.
Salmonier Nature Park
Father Duffy's Well
Gushues Pond
Brigus Junction
Mahers
Ocean Pd.
Woodlands
Laverview
Holyrood
Gallows Cove
Cochrane Pond
Gaultois
Bay Bulls
Big Pd.
Middle Pd.
Heart Pt.
Shoal Bay
Long Pt.
The Spout
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Maddox Cove
North Hd.
MOTION HD.
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ST. JOHN'S
Freshwater Bay
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Cape Spear
Waterford Br.
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SETTLED BY LORD BALTIMORE 1621 1694
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Gull Pd.
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Cape Pd.
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Brigus Hd.
Admirals Cove
Shores Cove
Cape Broyle
CAPE BROYLE
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Ferryland Hd.
SETTLED BY LORD BALTIMORE 1621 1694
WILDERNESS AREA
Aquaforte
Black Head
Fermeuse
Admirals
Ferryland Hr.
Bear Cove Hd.
Ragnes

The research sites: a socio-historical overview

Long Harbour

The community of Long Harbour is located on the east shore of Placentia Bay (see map, page 42), Newfoundland, ten miles off the Trans Canada Highway and approximately 70 miles from the capital city, St. John's. The community is situated in an extremely deep, narrow, ice-free harbour. It was first settled between 1810 and 1812 by people from nearby Long Island (also known as Crawley's Island). Seventy to eighty percent of the present residents are descendents of the Long Islanders.[1]

Mount Arlington Heights, a nearby community approximately half the size of Long Harbour, was settled in a similar way. Mount Arlington Heights lies about a mile from Long Harbour and shares a joint town council. While many people in both communities refer to Mount Arlington Heights and Long Harbour as the same place this thesis will follow the majority opinion and refer to each separately. The Erco plant is located directly opposite the community of Long Harbour. There are very few locations in the community where the plant is not visible. The plant cannot be seen at all from Mount Arlington Heights. The dust, noise, emissions which eminate from the plant rarely reach Mount Arlington Heights. This provides an additional rationale for treating each community distinctly.

Historically Long Harbour/Mount Arlington Heights' economy was based upon the inshore fishery. Cod traps were used exclusively during the period 1880 to 1940. The people of Long Harbour/Mount Arlington Heights did not take part in the deep sea fishery, neither off the

Grand Banks nor off the coast of Labrador.[2] In contrast the citizens of nearby Harbour Buffett, located on Long Island, Long Harbour/Mount Arlington Heights' main market for fish and supplies, were very much involved in the deep sea fishery. Long Harbour/Mount Arlington Heights were completely dependent upon Harbour Buffett for traps, nets, dry goods and groceries. In turn fish were sold to the merchants there. A large amount of flake-dried fish was shipped as well. To facilitate such exchanges, Long Harbour, of course, possessed at least one merchant family--the Murrays. Beginning in the latter part of the nineteenth century they founded the first general store in Long Harbour. Prior to 1940 shipbuilding was common. Most people had small boats. The large vessels belonged to such families as the Murphys, Keatings, and Bruces.[3]

By 1920 the Noseworthy family maintained a sawmill for private use, but by 1934 much logging was undertaken. This production lasted until 1941. In the late 1800's there was a canning factory which was extremely prosperous. It burned down in 1898 and was never replaced for unknown reasons. In 1937 a bait depot was set up containing herring, caplin, and squid. In 1964 a community stage and bait depot was built and used for storage.[4]

Agriculture and trapping were carried out on an individual basis. The most common vegetables grown were potatoes, carrots and green beans. People trapped or hunted beaver, otter, fox, moose, caribou and partridge. (Since the building of the plant the practise of growing vegetables for individual use has been halted at the recommendations of the Department of Health. People no longer raise animals

for the same reason.) Blueberry picking in the immediate area of the communities is no longer permitted.[5] Hunting and sports fishing has remained about the same as it was before the plant was built. (See Tables 35-6, page 106-109.)

Interviews and historical statistics suggest that commercial fishing was never carried out in the harbour itself, but rather in adjacent bays. Since the 1960's the fishery has been of declining importance. This decline preceded the arrival of the Erco plant, though the plant may have accelerated the decline. By 1968, the year major production began at the plant, there were only two or three full-time fishermen in Long Harbour/Mount Arlington Heights. The local fishery has not improved very much in recent years. By 1982 there were 17 full-time and 25 part-time fishermen in Long Harbour; and 9 full-time and 24 part-time in Mount Arlington Heights,[6] some of the part-timers are also employed at the Erco plant.

Before the construction of the Erco plant the labour force in Long Harbour/Mount Arlington Heights was largely concentrated in construction and related occupations. The building boom in St. John's, and other nearby centres absorbed most. As well, the Come-by-Chance refinery, the Churchill Falls development, the Baie D'Espoir hydro project, and the Argentia Base also served as sources of employment. Erco Industries is now the largest employer for Long Harbour/Mount Arlington Heights, employing approximately 80 people from these communities.

The first school in Long Harbour/Mount Arlington Heights was built in 1870. It was a 10' by 12' one room building. It was

destroyed by fire and replaced by a two room school in 1920. This school was later to be called St. Jerome's. Teachers came from surrounding areas of Placentia and Conception Bays. The two room school housed 25-30 pupils. In the 1930's the number grew to 50-75. St. Jerome's was closed in 1974. Xavier Central High School, teaching grades 7-11, was opened in 1970. A re-amalgamation of the schools in 1973 brings high school students from Chapel Arm to Xavier High and buses elementary students from Long Harbour/Mount Arlington Heights to Chapel Arm.[7]

Between 1920 and 1925 there was a large exodus of young people out of the communities. Fishing had been recently poor and opportunities were limited due to the Depression which had befallen the entire province. The majority of these went to Massachussetts, a popular mainland centre for employment seeking Newfoundlanders of that era. In recent years a similar exodus has lead to the Prairie provinces.[8]

The population of Long Harbour/Mount Arlington Heights, about 654 people, has always been overwhelmingly Roman Catholic. In recent years, largely through marriage a small number of Protestants have settled in the area. In most cases they either do not attend a church or participate in the Roman Catholic services.[9]

Politically, Long Harbour has traditionally voted conservative, although for a brief period following Confederation Liberal strength was significant.[10]

The Erco project

Erco Industries Ltd. is a wholly owned Canadian subsidiary of Albright and Wilson, Ltd., a British based corporation specializing in

the manufacture of chemicals and related products. Albright and Wilson is one of the largest manufacturers of phosphorous in the world. Albright and Wilson have total sales of approximately £450 million per annum as of 1979. In 1978 the Houston based multinational, Tenneco, assumed ownership and control of Albright and Wilson. Tenneco is one of the top 20 corporations in the United States. It has substantial interests in natural gas, oil, and shipbuilding. Its 1979 sales exceeded $10 billion per annum. Tenneco has over 235,000 stockholders and in excess of 10,000 employees.[11]

Erco Industries decided to build a phosphorous plant in Long Harbour because of the promise of cheap electrical power. Premier Joseph Smallwood conducted a campaign through seven countries, advertising in major newspapers. The newspaper ads were designed to attract industry to Newfoundland with the promises of cheap electrical power and good, ice-free locations on the ocean route between North America and Europe. These promises were very alluring to Albright and Wilson. Their production of phosphorous had been uncompetitive on the world markets due to high production costs, most of this cost being taken up by the price of electricity. After several visits to Newfoundland and various communications with Premier Smallwood the company decided to build. Mr. Brazier says that Smallwood was insistent that the plant be built in Long Harbour. Mr. Smallwood says that the choice was totally Albright and Wilson's. Construction began in August 1966. The first furnace was switched on in the Fall of 1968.[12]

Erco employs approximately 400 men and women. Virtually all

the employees are male. The only women are those in the cafeteria, operating the switchboard. and secretaries to the plant's top personnel. Approximately 92% of the plant's employees are Newfoundlanders.[13] Eighty per cent of these come from Long Harbour, Dunville, and Norman's Cove. As well as employing about 400 people directly, the plant is believed to help employ several hundred people indirectly through services, equipment and so forth. According to John Danton, the plant's commercial manager, in 1979 Erco Industries injected 23 million dollars into the Newfoundland economy. Nine and a half million dollars were paid out in salaries and wages. Here is a breakdown of the plant's expenditures:

Table 1 - Breakdown of plant expenditures: 1979

Wages and Salaries	$ 9.5 million
Power	1.7 million
Fuel	3.1 million
Transportation	1.7 million
Contractors	3.5 million
Materials and Supplies	3.5 million
Total	$ 23 million

The Erco plant has not operated at its planned capacity. It has had several shutdowns and major technical problems. Along with this the market for phosphorous throughout the world has been poor. For all of these reasons the Long Harbour plant could not be painted as a huge financial success. It has been stated that the Long Harbour plant has been directly responsible for the successful takeover of Albright and Wilson by Tenneco in 1971 when Tenneco acquired enough convertible stock that, when converted to ordinary shares, gave Tenneco controlling interest in the company. The shares were converted to ordinary stock in 1978.[14]

Since 1975 Tenneco has had a policy of diversification into the chemical industry. Albright and Wilson is the second largest chemical company in Great Britain, with manufacturing concerns in 17 countries throughout the world. The Tenneco corporation saw great potential in the future of Albright and Wilson especially in lieu of expanding markets and a demand for chemical products in the world's developing nations. The Tenneco corporation has ample capital with which to support this potential. (See p. 46).[7][15]

The Long Harbour plant has had a tumultuous history. A great deal of the bad publicity has focused on two major areas; its energy contract with the provincial government and its pollution problems. Popular opinion held that Erco received its energy at a drastically low price, especially in lieu of the great amounts of power needed to produce phosphorous. The controversy finally resulted in a renegotiation of the power contract in the Fall of 1980. Erco originally purchased electrical power at a rate of 2½ mils. per kilowatt hour. With the renegotiation of the contract the plant pays at a rate of 8 mils. from 1980 to 1983. The rate increases at an even rate annually until it reaches 32 mils. in 1993.

Erco is perhaps best known throughout Newfoundland for some of the environmental damage caused by its operation. In 1969 red tide fish kills were reported in Placentia Bay. Additionally, fluoride emissions have destroyed the vegetation around the plant.

The Erco history has been dotted with pollution problems and public outcries. In response the owners of the plant have invested millions of dollars in pollution control equipment. Still, the pollution problems continue to be the major source of dissatisfaction

with the plant for the community of Long Harbour, reports the community's town council.

In 1982 a community action group was formed led by citizen Doreen Greene to protest the dust released from the plant. The dust causes many problems for the people of Long Harbour (see Chapter 6, p. 121). Many citizens of Long Harbour believe that the dust is responsible for the growth of moss on their houses. They are concerned that the moss may damage their houses and that the source of the moss may be harmful to people.

Footnotes

[1]R. Ivany, "An Ethnography of Long Harbour", unpublished paper (St. John's), p. 2.

[2]J. Ottenheimer, Long Harbour, Placentia Bay, Newfoundland (Maritime History Group, 1972), p. 1.

[3]Ibid., pp. 1-2, 10-11.

[4]Ibid., pp. 10-11.

[5]Department of Environment, Provincial Government.

[6]Fisheries and Oceans, License Statistics, 1983.

[7]Ottenheimer, pp. 15-17, 20.

[8]Op. Cit.

[9]Ibid., pp. 5, 17-19 and Father Gordon Walsh.

[10]Ottenheimer, pp. 18-19.

[11]Tenneco, This is Tenneco (Houston, 1979), p. 1.

[12]R. Hattenhauer, Report on Safety Conditions and Labour-Management Relations at the Electric Reduction Company of Canada Limited, (Industrial Inquiry Commission, 1972), pp. 17-20.

[13]P. Treson, "The Story of Phosphorous", (Albright and Wilson, 1970), pp. 22-23.

[14]Executive, "Erco is Alive and Well", (February, 1973), p. 5.

[15]Tenneco, p. 13.

4

RESEARCH METHODS

Introduction

The purpose of this chapter is to explain the choice of site and research strategies utilized in this study and the types of evidence. For an explanation of why Erco Industries was chosen for study see Chapter 1, page 15.

Methodological approach

There is no specific methodological strategy that is unique to social impact assessment. Social impact assessment attempts to monitor social changes in a community, in the lives of individuals, and in social institutions resulting from a major and dramatic alteration to it. In this sense it is best understood as a non-ethnographic variety of community study. In this situation the social change is the building and operating of a phosphorous plant where none existed before.

Several methodological designs are useful for acquiring various types of data. These strategies cover approaches from community ethnography and participant observation, generally employed by the anthropologist and qualitative sociologist; through the quantitative survey approach utilized by some sociologists.

The research design

The various research techniques were combined to construct community profiles of Long Harbour and Mount Arlington Heights. Such profiles were compiled because a holistic sense of these communities before and after the Erco plant was needed as a baseline from which to assess change. Their characteristics before the plant was built

as well as after the plant was built can suggest some ways in which the plant has impacted these communities.

To compile the community profiles three investigative strategies were used: 1. secondary analysis; 2. semi-structured interviewing; and 3. survey analysis. Taken collectively these approaches provided a variety of information from many different sources which enabled a holistic sense of these communities to be constructed.[1]

Secondary analysis

Secondary analysis involves studying a bulk of written material which has already been gathered for other purposes. Such material tends to be rather wide ranging because any source dealing with any aspect of social life in these communities is potentially useful. The secondary sources used are divided into three categories, statistical records, historical sources, and contemporary records and personal documents.[2]

The major source of statistical information was census data. Such census data has severe limitations. Employment figures for certain years throughout the community's history were sought. There was very limited information on how many people were employed and in what types of jobs. In such a situation, it is up to the researcher to pick through the information for the specific data required. Often the information required has not been collected, as with the example on employment figures. An additional problem encountered with statistical records is that the population figures for Long Harbour were required, but the census data gives the population statistics for Long Harbour and Mount Arlington Heights, towns with a joint town

council. Another problem is that the years for which statistics were required were non-census years.[3]

Under the heading of historical documents are mainly sources of a non-quantitative nature. These are sources dealing with non-specific topics covering beliefs, social relationships and a wide variety of other aspects of social life. These documents span the period being studied. Examples of such documents are those compiled by the Women's Institute of Newfoundland and Labrador and R. Ivany.[4]

Such documents dealing with earlier periods of history in the communities of Long Harbour/Mount Arlington Heights are invaluable in determining how community structure and social institutions have changed in light of the plant's construction and operation.

Information on the construction period of the plant's history has been very limited. No accurate figures of employment and local contractors employed were kept. Data surrounding the workers used and how many were employed permanently at the plant was not available due to restrictions surrounding accessibility to the plant's files. (See page 56). Mr. Ernest Brazier, who helped design the plant and oversee the construction phase was extremely helpful. The assistance of Mr. Charlie Gillam who was employed by Erco Industries during the construction period and is still employed with that company, was greatly appreciated concerning this period.

A major study conducted by the Provincial Industrial Inquiry Commission in 1972 was very helpful. It provided information on labour management relations, safety conditions at the plant, as well as in other areas. Other studies provided data on fluoride emissions and the resulting damage to vegetation and wildlife surrounding the

plant. These studies also provided data on the potential effects of the fluoride emissions on the human population.

Contemporary records include such sources as newspapers and magazines. Searching through periodicals and newspapers was tedious as the index for these publications is only a partial list. To fill out the index a search was conducted through newspapers and periodicals dated at important times in the plant's history. Some problems were encountered with these particular sources. First of all the objectivity of certain newspaper reports was sometimes questionable. Also figures had to be checked because they were not always accurately reported in any one source. This problem was offset by checking several different sources so that certain dates and figures could be confirmed.[5]

Earl Dwyer and John Danton, Erco's personnel and commercial managers, respectively, have been most helpful. Both men provided valuable information such as employment records, union relations, charitable donations, production, power usage, and many other topics. My credibility was established with Mr. Dwyer, who was concerned that the paper would be published and thus was reluctant to give out information. He was assured that it is purely academic. Access to company files could not be obtained due to a company policy which does not allow access to files without the permission of each individual employee. Without access to these files only limited data on the background of plant employees covering such topics as age, education, and place of birth, was available.

One important piece of information Mr. Dwyer supplied was a

list of local companies with which the plant does business. The sales managers of these businesses were contacted to see how big and important a customer Erco is to these local companies. These people were provided with a list of questions (See Appendix A, page 143) aimed at finding out the type of relations conducted with the plant and the amount of income earned from Erco.

The school boards and church assemblies represented in these areas were also contacted. Information concerning Erco's effects on local churches and schools are limited. Accurate records of the plant's effect on school and church attendance were not kept. In many cases, the clergyman and principals at the time of the plant's construction were no longer in these offices.

Semi-structured interviewing

In addition to the above sources an extensive amount of interviewing was conducted. The town council of Long Harbour/Mount Arlington Heights was contacted and a special meeting with a partial council (due to summer vacations and so forth) was held. While conducting the door-to-door survey several other council members were met with and interviewed. The semi-structured interviewing technique which relies upon a framework of questions, rather than a fixed list was chosen because of its relaxed nature. It allows a variety of new topics and issues to be introduced and discussed. For example in discussing the expectations local people had in relation to the construction of the Erco plant several people stated that they did not know what to expect which led to further questions on what information they had received, whether or not public meetings had been held and

so forth. Discussions on relations between Erco officials and local people initiated discussion on the origins of local government and the ways in which relations have changed. (See Chapter 6). The council members were quite helpful and extremely well-informed about happenings in their community. They were able to provide information on taxes, employment figures, welfare recipients and many other areas of community life. The decision to interview these people was made for several reasons. First of all because of their official positions they deal directly with the plant officials. The relationship between the plant and local governments was discussed. This is particularly important because the plant's management prefer to deal with the council rather than directly with individuals. Secondly the councillors were elected to their positions by the communities' citizens and so acted as their representatives. Finally the councillors have access to information not generally known to the average person such as how the Erco Fund is administered.[6]

The same interviewing technique was used in discussions with many other relevant people. The semi-structured technique was very successful. It was especially adaptable to interviewing people concerning the historical conditions of Long Harbour because the written material is so sketchy.

Survey analysis

A questionnaire was compiled (see Appendix B, page 145) which was used in a door-to-door survey throughout Long Harbour and Mount Arlington Heights. Long Harbour has approximately 100 households and Mount Arlington Heights has approximately 50. Over a period of

several weeks every house in both communities was visited, most of them repeatedly. Repeated visits were necessary because it was difficult to find people at home. People were not at home for various reasons; for example, 1. many women work on government work projects and 2. it is necessary to leave the community in order to shop, do banking and so on. Although most houses (anywhere someone did not fill out a questionnaire on the first visit) were visited several times it was of course impossible to get a representative from every house to complete a questionnaire. Of the people who did not wish to complete a questionnaire about three times as many in Mount Arlington Heights refused than did in Long Harbour. Mount Arlington Heights is approximately ½ mile from Long Harbour. A piece of land juts into the harbour which cuts off the view of the plant. As several people in Mount Arlington Heights said, "We don't know that the plant is there." This probably explains why a large number of people in Mount Arlington Heights were not interested in a study of Erco. The plant does not affect them as much as it affects Long Harbour residents. I chose to study both communities for several reasons. Many people refer to Mount Arlington Heights as Long Harbour. The two communities are very closely tied through the local church, family ties, shared town council and their close proximity to each other. In spite of all these ties the fact that Long Harbour sits directly across from the plant and the plant cannot even be seen from Mount Arlington Heights suggested that experiences and issues involving the plant would vary between the two communities. (For tables presenting the background information on respondents, see Appendix C, pages 151-153.)

The border between Long Harbour and Mount Arlington Heights lies at the end of Long Harbour. Three houses lie on the Mount Arlington Heights side, nearly a mile from the rest of Mount Arlington Heights. Consequently the questionnaires completed by the people in these three houses were included with those from Long Harbour, not Mount Arlington Heights. A total of 99 questionnaires were completed representing 99 households; 75 from Long Harbour (approximately 75% of total number of households) and 24 from Mount Arlington Heights (just under 50%). In several cases two or more members of a household joined together to answer part or all of a questionnaire. Generally they would consult and give one response to each question. Where they differed both answers were included in the results.

The questionnaire was designed so that it could be answered by a male or female. It contained questions supplying information on all members of the family. Although several men were eager and willing to answer the questionnaire, many others called for their wives and either stood back and watched or left the house altogether. Women were more readily available than men and so more women answered the questionnaire. Although not accurately representative of the entire population a random sampling was maintained by visiting every house in the two communities. By designing a questionnaire which could be completed by any member of the household a random sampling from each sex, various age groups, and employment backgrounds was obtained.

The questionnaire contained questions on several aspects of life in Long Harbour/Mount Arlington Heights. The topics covered concerned Erco's pollution problems, opportunities at the plant for

both women and young people, aspects of community life style and employment background, to name a few. (For an example of the questionnaire see Appendix B, page 145). Although there were set questions every opportunity was provided for respondents to add comments and introduce new topics. This proved both interesting and informative.

Pitfalls of acquiring data

Acquiring the necessary information and data to write this thesis was often difficult. Very often accurate records were not kept (e.g. the effect that Erco had upon school and church attendance). The use of census data was very restricted for several reasons. First of all previous to 1971 census data (except for population totals) were not kept for Long Harbour and Mount Arlington Heights. In 1971 Long Harbour was incorporated and the census was conducted in that community, but not in Mount Arlington Heights which was not incorporated. By 1976 both communities shared a joint town council and their census data was combined. Therefore it is virtually impossible to make comparisons between various periods in the history of Long Harbour. Data previous to the plant's construction is very sketchy.

Census figures are rounded from small samples, therefore in communities such as Long Harbour/Mount Arlington Heights with such small populations a lot of details are lost. Categories of data collection vary from census to census. Long censuses are conducted only every ten years. The long census includes more detailed questions on employment, religious background and so forth. The variations in information categories prevents comparisons.

Access to company files was not possible. The Secrets' Act

prevented the Workmen's Compensation Board from releasing any figures on recent accident rates at the plant. Newfoundland and Labrador Hydro was not able to provide any information on power rates for companies such as Bowater and Abitibi Price (to compare with the power rates paid by Erco) because the contracts with these companies are private and their content is not for release to the public. Records of federal and provincial concessions made to Erco are in dead files and, consequently were unavailable. Fishery statistics for years previous to plant construction would have been valuable in studying several aspects of employment trends and historical changes, but statistics were not available pre-1976, and it was not until 1980 that licences were divided into part-time and full-time fishermen. Problems, such as these limited the possibility of making comparisons and of expanding in detail the information acquired from other sources.

Conclusion

This research has emphasized the qualitative approach, partly through this researcher's preference for this type of study and partly due to a desire that this paper be read in non-academic circles.

Footnotes

[1] P. Worsley, Introducing Sociology (Middlesex, 1970), pp. 84-97.

[2] Ibid., p. 74.

[3] Ibid., pp. 74-8.

[4] Ibid., pp. 78-81.

[5] Ibid., pp. 81-2.

[6] R. K. Leik, Methods, Logic and Research of Sociology (New York, 1972), pp. 33-4.

5

ECONOMIC IMPACT

Introduction

The purpose of this chapter is to examine the economic impact of the Erco plant upon the communities of Long Harbour and Mount Arlington Heights. To discover these economic influences this chapter will outline the local economy at three phases or stages: 1. before the plant was built, 2. the construction period and early operation stage, and 3. the operation stage. This chapter will conclude with some broader economic consequences of the Erco plant.

Pre-construction

The histories of Long Harbour/Mount Arlington Heights have already been described in Chapter 3. In this section major economic highlights will be reviewed and expanded.

Long Harbour

Traditionally Long Harbour's economy was based upon the inshore fishery. The importance of the fishery declined greatly during the 1960's. As stated in Chapter 3 this decline was well under way before the arrival of the plant, but Erco may have accelerated this reduction in the fishery. (Statistics on this period are not available.) The 1971 census records only 10 males and 5 females involved in primary occupations, excluding farming, residing in Long Harbour. Primary occupations can include logging as well. For the ten years spanning 1971-1981 the number of fishermen has totalled approximately 60-100 annually, both full and part-time. During the latter 1970's the local fishermen experienced several poor catches. With the decline of the fishery the major source of employment for the community had been from construction and related fields.

Members of the Long Harbour town council stated that the citizens of Long Harbour had enjoyed a high standard of living long before the arrival of Erco Industries. Long Harbour has the nickname of "Little St. John's". This refers to the citizens' desire to present to the world the image of prosperity.

Construction period

Data on the construction period is very sketchy. Unable to obtain access to the company's personnel files it was necessary to rely on secondary sources. Construction of the plant began on August 31, 1966. Construction was conducted by two major companies, Kaiser, a Toronto-based firm, and Atlas Construction. Although several small subcontractors were also employed accurate records on which ones were not available. The construction force started at a few dozen and at peak construction periods approximately 1300 people were employed. Mr. Charlie Gillam, one of the first workers at the Erco plant, reported that any person able and willing to work from Long Harbour was employed. According to Mr. Ernest Brazier, Premier Smallwood had stipulated that 90% of the construction crews be Newfoundlanders and this was adhered to throughout the construction. Most of the engineering and management staff were of international origin because of the highly specialized skills necessary.

Erco began assembling its permanent production labour force in July of 1968. Recruitment was conducted through the local employment and union centres and through newspaper ads. Mr. P. Woodford, manager of the Canada Employment Centre in Placentia stated that most of the employees were hired from the construction staff of Kaiser Construction

and workers from Long Harbour/Mount Arlington Heights who were employed in construction on the plant.

The influence on the town of Long Harbour during this period seems to have been limited. Construction supplied a source of employment for many Long Harbourites, as previously stated, which was close to home, whereas previously they were forced to commute between their community and places such as Come-by-Chance and St. John's. An on-site barracks housed approximately 550 workers. The barracks had various recreational facilities including a free canteen service. The site was liquor free. Weather permitting the crews worked extended hours, leaving little opportunity for socializing outside of the barracks on weekdays. When they were able to, the Moorlands' Motel at Whitbourne was very popular being only a few miles from Long Harbour. On weekends the Newfoundlanders who commuted to the plant site returned home. This practise by the Newfoundland workers created some problems at one point in the construction. Thirty millwrights had been brought in from Great Britain and Quebec each (millwrights were in short supply in Newfoundland at the time). These workers were promised a lot of overtime and consequently a big paycheck. When the bulk of the construction crews went home for the weekends the millwrights were unable to work overtime. The French Canadians and the British millwrights worked well with the Newfoundlanders, but not with each other. On the weekends this animosity was increased and the groups were separated by sending one to Clarenville and the other to St. John's, alternating each weekend.

Production period

The following tables are provided by the Industrial Inquiry Commission's Report on Safety Conditions and Labour Management Relations at the Erco plant in Long Harbour, Newfoundland.[1] Table 3 shows the size of the labour force at the beginning of each month from August 1966 to June 1972. From 1968 to the middle of 1969 the non-managerial labour force grew to 350 people. This growth was temporarily interrupted in April and May of 1969 when the plant closed due to the Red Herring Scare (see Chapter 6). Table 4 gives the educational background of hourly employees at Long Harbour and at Erco's plant at Varennes, Quebec. It is apparent from this table that the labour force at Long Harbour is generally more educated than that at Varennes. However Table 2 shows that the Long Harbour employees had less industrial experience than the workers at Varennes. This contributed to a high accident rate at the Long Harbour plant in the early years of production. The Erco plant at Varennes, Quebec was chosen by the Industrial Inquiry Commission, to provide a basis of comparison between

Table 2 - Previous work experience of hourly employees at Long Harbour and Varennes July 1972

Experience	Long Harbour	Varennes
	%	%
Trade	38	21
Semi-Skilled	7	11
Heavy Equipment Operator	10	3
Ind. Skilled	45	65
	100%	100%

two phosphorous manufacturing plants owned by the same organization.

Table 3 - Size of non-managerial labour force by month — August 1968-June 1972

Year	1968	1969	1970	1971	1972
January	-	267	366	390	362
February	-	303	377	348	378
March	-	320	439	333	377
April	-	323	408	345	381
May	-	260	387	382	401
June	-	259	401	345	408
July	-	352	424	384	-
August	-	364	435	366	-
September	-	349	464	349	-
October	-	352	459	355	-
November	-	373	409	355	-
December	-	378	410	362	-

Table 4 - Educational background of hourly employees at Long Harbour and Varennes plants — July 1972

Years of Schooling	Long Harbour %	Varennes %
0 - 7	7.8	52.9
8 - 10	54.7	44.2
11 and more	24.6	2.9
No Record	12.9	0
	100%	100%

During the first few months of construction on the Erco plant, the construction site could only be reached by going through the community of Long Harbour. Workers and supplies were ferried across the water. During these first few months a road was built linking the plant site to the road leading to the Trans-Canada Highway and the initial contact was drastically reduced. This initial access road was very narrow and winding, as well as being unpaved and caused interruptions in local traffic, particularly because numerous vehicles lost their loads on the poor roadway.

There did not seem to be any of the boom and bust effects often associated with the construction phase.[2] There was no rapid swelling of population in Long Harbour. (See Tables 33 and 34). New workers who came to the area did not stay in the community.

The Erco plant is the major source of employment for both the communities of Long Harbour and Dunville. An accurate overview of this impact can be seen in the following tables. Table 8 provides specific information on the background of workers at the Long Harbour plant, including the geographic residence of employees in 1972. (More recent figures are not available due to the restriction on access to company files.) The source of these tables in the Industrial Inquiry Commission's Report by R. Hattenhauer (see Bibliography). Tables 5 and 6 provide a breakdown of Erco's work force by departments and positions in 1980. Table 7 shows the positions held by women employed by Erco. These three tables were provided by Mr. Earle Dwyer, the personnel manager of Erco Industries, Long Harbour.

The breakdown of the work force in Table 5 is accurate as of 1980. However in 1981 approximately 70 workers (largely hourly paid

employees) were laid off from the plant, the result of a streamlining of the work force in an attempt to reduce the cost base of the industry. Shortly thereafter Erco entered into a 5.8 million dollar New Employment, Expansion and Development (NEED) program agreement that created approximately 84 jobs (60 jobs at once during peak periods) over a one year contract. Under this program the federal governemnt absorbs approximately 10% of the total costs of employment. Erco contributes the remainder as well as $500,000 in goods and services. The NEED program has offset the previous layoffs to a great extent. However when the NEED program ends the potential of future unemployment may have to be faced by many of these workers. The current work force at the plant number approximately 418, including the NEED employees. A breakdown exclusive of these workers is not available, but the 1981 plan approximates the current status of the work force.

Table 5 - Erco personnel 1980

	Salary	Weekly	Hourly	Temporary Relief	Temporary Non-Relief	Total
1980	99	41	272	7	3	413
1981 plan	97	41	265	7 (peak @ 30)	3	413 (peak @ 436)

Table 6 - Work force breakdown by departments 1980

Department	Salary Number	Weekly Number
Permanent	2	-
Production	20	-
Maintenance	17	2
Electrical Utilities	6	1
Engineering	24	1
Technical	11	12
Commercial	8	23
Personnel	9	2
Health	2	-
Total	99	41

Table 7 - Female work force at Erco 1981

Position	Number
Steno Supervisor	1
Benefits Administrators	2
Staff Housekeeper	1
Industrial Nurse	1
Engineering Clerk	1
Office Clerks/Typists	4
Payroll Clerk	1
Cook	1
Cafeteria Assistant	1
Purchasing Data Clerk	1
Receptionist Typist	1
Total	15

Table 8 - Employee residence by geographic area 1972

Area	All Employees as of June 30, 1972	Employees Hired Jan. to Aug. 1972
Long Harbour	21%	19%
Avondale, Harbour Main Conception Harbour	7%	4%
Bay Roberts, Harbour Grace	5%	10%
Norman's Cove, Chapel Arm	30%	11%
Dunville, Placentia	29%	42%
All Other	8%	14%
	100%	100%

Erco employs approximately (80) residents of Long Harbour/Mount Arlington Heights, out of a labour force of 180 (or 44%). A further 65 (36%) are employed in service occupations which are dependent (at least partially) for their employment upon Erco. These service occupations are largely included in Government Make Work Projects which since 1980 has provided 171 temporary jobs,[3] largely employing women and young males. (This does not include the 84 jobs provided through the NEED program discussed previously.) The fishery supports only 26 full-time fishermen and 49 part-time. Employment is seasonal and supplemented by employment through Make Work Projects and at the Erco plant. Another four (4) full-time workers are employed at the bait depot which also employs six (6) workers part-time. It is apparent that Erco is the most important source of employment for Long Harbour/Mount Arlington Heights not only for the large number it employs, but because for the majority the jobs are permanent. Government funded community projects are temporary buffers against unemployment, but largely rely upon basic labour and hold no future. Rex Lucas describes a

one-industry town as one in which 75% of the total work force is employed in that industry and its institutional support facilities. Long Harbour closely approximates this situation.[4]

Government work projects are very important, however, in view of the poor economic opportunities throughout the country. Erco is unable to absorb new workers. In fact, as previously mentioned there have been recent attempts to streamline the work force. When asked whether or not young people could find work at the Erco plant 67% of the respondents in Long Harbour replied no while 64% responded negatively in Mount Arlington Heigths (See Table 9, page 75). Those who responded yes emphasized that very few would find work and it was basically as summer relief (See Table 10). When asked if young people would find work in other businesses and still remain in Long Harbour/Mount Arlington Heights, the vast majority said no while those who responded positively stated that young people could work on Canada Works projects or else find work elsewhere and commute. (See Tables 11, 12 and 13, pages 76-77). Opinion was varied on where young people who were forced to leave the area sought employment, but St. John's and Alberta were mentioned most frequently. It is interesting that in response to this question several respondents mentioned that young people could find work on Canada Works projects, obviously recognizing such employment as temporary and therefore deeming it inadequate. (See Table 13, page 77). One respondent commented that Canada Works projects hinder rather than help the young people by tying them to the cycle of seasonal employment and unemployment insurance.

Table 9 - Are young people able to find work at plant?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Yes	22	30	6	24	28	29
No	48	67	16	64	64	66
Don't Know	2	3	3	12	5	5
Total	72	100	25	100	97	100

Table 10 - If yes (Table 9), in how many jobs?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Not Many/Few	6	27	3	50	9	32
Summer Work	9	40	3	50	12	43
Same Number As Always	2	9	0	0	2	7
Quite a Few	1	5	0	0	1	4
As Labourers	2	9	0	0	2	7
Men/Not Women	1	5	0	0	1	4
Univ. Grads./Not Trade	1	5	0	0	1	4
Total	22	100	6	100	28	*101

* Not equal to 100 due to rounding.

Table 11 - Are young people able to find work in other businesses and still remain living in Long Harbour?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Yes	20	29	2	10	22	24
No	47	68	18	86	65	72
Don't Know	2	3	1	5	3	3
Total	69	*101	21	*101	90	*99

* Not equal to 100 due to rounding.

Table 12 - If yes (Table 11), in what types of jobs?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Government Work Programs	7	35	2	66	9	39
Work elsewhere and Commute	10	50	0	0	10	43
Fishing	0	0	1	33	1	4
Don't Know	3	15	0	0	3	13
Total	20	100	3	*99	23	*99

* Not equal to 100 due to rounding.

Table 13 - If no (Table 11), where do young people go to find work?

	Long Harbour Number	%	Mt. Arlington Hgts. Number	%	Total Number	%
St. John's	13	20	6	26	19	21
Alberta	16	24	2	9	18	20
Out of Province	6	9	3	13	9	10
Anywhere they can get work	3	4	1	4	4	4
Toronto	3	4	1	4	4	4
Trades School University	3	4	1	4	4	4
Canada Works Projects	8	12	2	9	10	11
Stay Unemployed	1	2	1	4	2	2
Different Places	8	12	5	22	13	15
No Jobs Anywhere	5	8	0	0	5	6
Fishing	0	0	1	4	1	1
Total	+66	*99	+23	*99	89	*98

* Not equal to 100 due to rounding.
+ Multiple responses.

In response to how many women the Erco plant employs, the responses were so varied that it is apparent that very few people know how many women the plant employs. (See Tables 57, Appendix C, page 154). For the correct figure of 15 see Table 7. It is apparent from this table that women are employed exclusively in clerical and service sectors, (with the occassional exception of a female engineering

student on a work term). This small percentage of women in the work force (and their restriction to specific sectors) is an issue which either initiated very little interest with respondents or provoked strong opinions, generally from respondents who themselves (or their spouses) had tried for work or had daughters with trades who had applied for jobs and been turned down. Divided opinion revealed itself on the question of whether or not more women should be hired by the plant. In Long Harbour just over 50% said that more should be hired, while in Mount Arlington Heights just under 40% replied affirmatively (See Table 58, Appendix C, page 154).

In Long Harbour/Mount Arlington Heights the predominant source (albeit temporary) for women is Canada Works Projects. Fifty-eight per cent (58%) of the respondents recognized this source as did 62% in Mount Arlington Heights. In Long Harbour 39% of the respondents also commented that there was very limited employment opportunity for women in these communities, a view shared by 38% of the respondents in Mount Arlington Heights. (See Table 15, page 79.)

Table 14 - Have you tried to find work outside of the home (females)?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Does work	23	31	4	17	27	27
Tried to find work	20	27	6	25	26	26
Did not try to find work	24	32	10	42	34	34
No answer	8	10	4	17	12	12
Total	75	100	24	*101	99	*99

* Not equal to 100 due to rounding.

Table 15 – Types of employment available for women.

	Long Harbour Number	%	Mt. Arlington Hgts. Number	%	Total Number	%
Government Work Projects	39	40	13	42	52	41
Nothing/Not Very Much	26	27	8	26	34	27
Erco	12	12	3	10	15	12
Other	12	12	5	16	17	13
No Answer	8	8	2	6	10	8
Total+	97	*99	31	100	128	100
	n = 67		n = 21			

\+ Respondents made multiple responses
* Does not equal 100 due to rounding
Total number of respondents = n

In discussing layoffs it would appear that the recent major layoff from the plant has not greatly affected Long Harbour/Mount Arlington Heights (probably offset by the NEED program). Of the fifteen respondents in Long Harbour who had been laid off from the plant, fourteen stated that they would be rehired. They were summer relief workers and were seasonally laid off and rehired. The remaining respondent chose not to answer. Of the six respondents who had been laid off only one stated that she would not be rehired because of the recent streamlining of the work force. (See Tables 16 & 17, page 80).

Eighty three per cent of the respondents employed by the Erco plant stated that they had been employed before they took their jobs at Erco. In Mount Arlington Heights 55% of the respondents had held

previous jobs. Remaining respondents included those who had gone to work at Erco immediately following graduation from Trades and other schools. (See Table 18, page 81). These workers held various occupational backgrounds with the largest single category being construction. (See Table 19, page 81). Overwhelmingly, almost exclusively the workers claimed that they came to work at Erco to be close to home. (See Table 20, page 81). A large majority of respondents state that wages are higher at Erco than in their previous employment. (See Table 21, page 82).

Table 16 - Has any household member been laid off from plant?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Yes	15	44	6	43	21	44
No	19	56	8	57	27	56
Total	34	100	14	100	48	100

Table 17 - If yes (Table 16) will he/she be rehired?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Will be rehired	14	100	5	83	19	95
Will not be rehired	0	0	1	17	1	5
Total	+14	100	6	100	20	100

+ One respondent chose not to answer.

Table 18 - Were you employed previously to working at plant?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Yes	40	83	11	55	51	75
No	8	17	9	45	17	25
Total	48	100	20	100	68	100

Table 19 - If yes (Table 18), in what type of job were you employed?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Construction Work	9	22	6	55	15	29
Secretarial	5	12	1	9	6	12
Fishing	5	12	0	0	5	10
Labourer	2	5	0	0	2	4
Government Work Projects	2	5	0	0	2	4
Other	18	45	4	36	22	43
Total	40	*101	11	100	51	*102

* Not equal to 100 due to rounding.

Table 20 - Why did you leave that job to work at Erco?

	Long Harbour		Mt. Arlington Hghts.		Total	
	Number	%	Number	%	Number	%
Close to Home	17	37	8	80	25	45
More Money	10	22	0	0	10	18
Steady Employment	7	15	2	20	9	16
Other	12	26	0	0	12	21
Total	+46	100	10	100	56	100

n = 39 n = 10

+ Multiple responses.

Table 21 - Comparison of salaries at Erco and at previous job.

Salary at Erco	Long Harbour Number	%	Mt. Arlington Hgts. Number	%	Total Number	%
Higher	28	78	5	62	33	75
Lower	3	8	0	0	3	7
About the Same	5	14	3	38	8	18
Total	36	100	8	100	44	100

The Long Harbour/Mount Arlington Heights town council feels the economic well-being of those citizens living in the community is high, and there is no shortage of money for expensive personal items such as cars, television sets, fashionable clothes, and so on. School projects have no trouble getting citizen monetary support, says Mr. James Nolan, the principal of Xavier Central High School. The air of prosperity is not a new experience for the community. During 1981, the town council informed me that only nine (9) people in the community were on social assistance. Only 20 members of the labour force were unemployed in 1981 (10 each of males and females). The following table shows the average income for taxpayers in Long Harbour/Mount Arlington Heights and several other communities in the Placentia Bay area. For comparison the average income for taxpayers in both Newfoundland and across Canada are included. As can be seen by this table Long Harbour's average income is over $3,000 higher than the average income for all of Newfoundland and just over $500 higher than the average income for Canada. The average income for Long Harbourites is good in relation to the other listed incomes.

Table 22 - Average income (taxpayers) 1979

Community	Average Income
Long Harbour/Mount Arlington Heights	$ 12,650
Freshwater	$ 10,783
Dunville	$ 12,971
Placentia	$ 11,668
St. John's	$ 14,138
Newfoundland	$ 9,173
Canada	$ 12,079

Source: Taxation Statistics; Revenue Canada

In 1967 the Newfoundland government passed the Erco Act which stated that Erco Industries was required to pay the community of Long Harbour/Mount Arlington Heights, 40 per cent, up to $5,000 of all local and business taxes collected in the community. For several years this totalled only $1,200.00. This is because the town's Board of Trustees charged each household only a small service charge of $10.00. It was later raised to $15.00 and Erco then paid $1,800.00 in taxes. Soon after the town council was formed in 1976 the service charge was raised to $30.00; and later the town council charged the Newfoundland Light and Power Company and other businesses a business tax. This resulted in a raise in the tax being paid by Erco to Long Harbour/ Mount Arlington Heights. In 1981 that tax totalled just over $10,000.00. The $5,000.00 limit was dropped due to pressure exerted on the provincial government by the town council in 1980.

The plant has also set up a Community Fund since 1979 which it gives to the town council to administer. Local charities requesting small amounts took up a great deal of time and effort for company officials. A fund of $20,000.00 was set up to accommodate these

charities. Local groups such as the Girl Guides, the Women's Institute, and similar organizations submit requests to this fund and support is provided accordingly. The council said that it fought for more community involvement by the plant. Erco will supply empty buildings, materials, and assistance for such community projects as Clean-Up Week.

Construction and operation subsidization

One of the major reasons Erco decided to build its plant at Long Harbour, Newfoundland was because the Newfoundland government promised to subisdize the power purchased from the province. From the point of first production until the fall of 1980 Erco paid for electricity at the rate of 2.5 mils. per killowatt hour. Included in the original agreement was a provision stating that the plant would pay a minimum of $138,700 per month whether any power was consumed or not. This provision did not apply to periods when the furnace was being overhauled as long as these periods did not exceed six weeks.[5] Erco has never operated at its proposed capacity and has had a history of technical problems. The plant has never consumed the power that was estimated it would need. For example during 1971 the effective rate paid was 4.71 mils. not 2.5 mils. With renegotiation of the contract in 1980 the plant pays for power at a rate of 8 mils. covering 1980 to 1983. This rate increased annually at an even rate until it reaches 32 mils. in 1993. Following is a table of concessions made to the Erco plant by the provincial and federal governments.

Table 23 - Concessions made to Erco Industries by federal and provincial governments.

Concession	Government	Amount (Dollars)
25 year power contract	Provincial	Subsidy of 3 million annually*
Guaranteed Bond Issue (1966)	Provincial	15 million
Grants (1968-1970) (Area Development Incentives Act)	Federal	5 million
2,000 ft. wharf and Harbour Facilities (1967-1968) Water and Sewerage Facilities	Federal	Unknown (to be repaid by Erco Industries over 40 year period.
Road Link (12 miles) Between Long Harbour and Silica Quartz Mine at Villa Marie (1967-1968)	Provincial-Federal	2 million

* Renegotiated - See previous page.

Source: Evening Telegram - December 18, 1970.

Indirect economic contributions to Long Harbour/Mount Arlington Heights and Dunville

Along with its donations to community projects in both Long Harbour/Mount Arlington Heights and Dunville the Erco organization has made several other sizeable donations throughout its history. During the years 1970, 1971, and 1972 (to September 15) Erco donated over $174,000 to charitable, educational, and recreational causes which benefitted both the communities being studied, Dunville and wider local areas as well. The next table provides several examples of donations made by the plant.[6] Two of these donations, those to the Whitbourne Stadium and the Placentia Recreation Centre caused some disappointment among the citizens of Long Harbour/Mount Arlington

Heights. Erco donated twice the amount to the Placentia Recreation Centre (where its salaried staff use such facilities) that it gave to the Whitbourne Stadium (where Long Harbour/Mount Arlington Heights hourly workers go). Dunville uses the Placentia Recreation Centre and Long Harbour uses the Whitbourne Stadium. The next table lists these and other charitable donations made by Erco Industries.

Table 24 - Charitable donations made by Erco

Donations	Amount (Dollars)
Bunkhouses and Finances to P$_4$ Social Club at Dunville	110,000
Two bunkhouses to Local School Authority	40,000
Whitbourne Stadium	25,000
Placentia Recreation Centre	50,000
MUN Anniversary Fund	100,000
Local Softball Team	2,000
Total	327,000

Local businesses employed by Erco

Erco employs the services of several local businesses; Table 16 provides a list of these businesses and their dealings with Erco. For the period spanning the plant's start-up date until September 15, 1972 the Erco plant paid approximately 4.5 million dollars to subcontractors. During the single year of 1979 this figure was 3.5 million dollars. Mr. Eric Evileigh of George Phillips and Sons, 1980, Ltd., a tinsmith firm, told me that Erco is one of that company's three largest customers, along with Bowater and Abitibi-Price. Erco, he said, is directly.

responsible for employing twenty-five workers with the company.

Mr. G. W. Anstey of Ultramar, Canada Inc. stated that Erco is one of the company's ten top customers in the province. Table 25 provides a list of local businesses with which the plant deals and the amount of one year's sale for the year of 1981.

Table 25 - Erco's dealings with local businesses 1981

Company	Amount of Sales
A. H. Murray	20% of total
Easteel Industries	7.72% of total
George Phillips & Sons, 1980, Ltd.	$700,000 (Oct. 1980-Dec. 1981)
Gescan	$115-120,000
Ultramar Canada, Inc.	$2,500,000

Besides these businesses a taxi service established in Mount Arlington Heights in 1982 is very dependent upon Erco Industries, it being the major customer. It is a one man, self-employed operation.

Conclusion

Erco Industries Ltd. is the major source of employment for both the communities of Long Harbour and Mount Arlington Heights. Before the arrival of the plant the labour force of Long Harbour/Mount Arlington Heights was predominantly employed in the area of construction, work which was often seasonal and took the men away from home. The Erco plant absorbed many of these workers, providing permanent jobs close to home.

Erco Industries pays a tax to the community of Long Harbour/Mount Arlington Heights, which has traditionally been less than

2.000 dollars, but as of 1981 it now exceeds 10,000 dollars, a substantial source of income for the town council. A community fund of 20,000 dollars is financed annually by the plant to support local charities and organizations. Dunville also receives support for various charities and organizations. Erco has made several contributions which benefitted the general area of Placentia, as well as contributing to Memorial University's scholarship and anniversary funds.

Several local businesses count Erco as one of their largest customers. An example is George Phillips and Sons, 1980, Ltd., which credits Erco Industries as being directly responsible for the employment of 25 people.

The power subsidy offered by the Newfoundland government providing power to the plant at a rate of 2.5 mils. per killowatt hour was the major inducement to the plant's building in Newfoundland. As of 1979 this contract has been renegotiated such that by 1993 Erco will be paying a rate of 32 mils. The provincial government gave other subsidies to the Erco plant such as guaranteeing a 15 million dollar loan toward the cost of building the plant. The provincial government built 25 housing units in Dunville which Erco personnel rent at a subsidized rate from CMHC for an undisclosed amount. In a joint venture with the federal government the provincial government helped to build a 12-mile road linking the plant with the Silica Quartz Mine at Villa Marie, at a cost of two million dollars. The Canadian government gave the plant 5 million dollars in grants and financed the building of the wharf and dock facilities at Long Harbour.

Pollution has been a major problem for the Erco plant, notably the Red Herring Scare of 1969. At that time Erco set up a fund of

300,000 dollars, twice that paid by the federal government, to compensate the fishermen affected. The plant has made a concentrated effort to cure the other pollution problems and in the spring of 1981 was awarded the provincial government's pollution abatement award. Dust from the plant continues, however, to be a problem for the residents of Long Harbour, damaging windows and car windshields. Specific claims against the plant have as yet received no compensation.

The following chart shows the economic benefits received by Newfoundland from the plant; and the costs to the province caused by the plant.

Table 26 – Benefits vs. costs of Erco plant, Long Harbour

Benefits			Costs		
Long Harbour/ Mt. Arlington Heights	Dunville	Other	Long Harbour/ Mt. Arlington Heights	Dunville	Other
Major Source of Employment	Major Source of Employment	Source of Employment	Pollution Damaged Windows and Roofs	—	—
Total Wages and Salaries 1979 $9.5 million					
Taxes: 1981, approx. 10,000	—	—	Pollution-Red Herring Scare	Pollution-Red Herring Scare	Pollution-Red Herring Scare
Community Fund* 20,000 annually	Charitable Donations	Charitable Donations	Loss of income-approx.400 fishermen		Fund of $150,000 set up by Provincial Government for compensation.
—	—	Contractors $3.5 million 1979	—	—	Power Subsidy originally for 25 yrs. Renegotiated.
—	Erco Housing for Erco Personnel	—			
Fund for Compensation	Fund for Compensation	$300,000 fund to compensate fishermen Red Herring Scare	—	—	Guaranteed Bond (Prov.) 15 million

Table 26 - (continued)

Benefits			Costs		
Long Harbour/ Mt.Arlington Heights	Dunville	Other	Long Harbour/ Mt.Arlington Heights	Dunville	Other
			—	—	ADIA Grants 5 million Federal
			—	—	Wharf (Fed.) and facilities: Capital Outlay to be repaid.
			—	—	Road-Link Fed.-Prov. 2 million
			—	—	Subsidy Erco Housing 25 units
			—	—	Water and Sewerage Facilities

Footnotes

[1]R. Hattenhauer, Report on Safety Conditions and Labour-Management at the Electric Reduction Company of Canada Ltd. Long Harbour, Newfoundland. (Industrial Inquiry Commission, 1972), pp. 47, 52, 54.

[2]A. Lucas, Minetown, Milltown and Railtown. (Toronto, 1971).

[3]Department of Employment and Immigration, Government of Canada.

[4]Lucas, p. 17.

[5]Hattenhauer, pp. 20-21.

[6]Ibid., p. 26, and Mr. Earl Dwyer, Erco Personnel Manager.

SOCIAL IMPACT

Introduction

This chapter deals with the Erco plant's social impacts upon the communities of Long Harbour and Mount Arlington Heights. It examines the plant's influences in terms of several topics, population, life style, education, religion and polity. Also included is a general commentary on the quality of life as it is affected by the project. Under the heading "Quality of Life" the subjects discussed are pollution and safety conditions and health hazards within the plant.

Population

Erco Industries is the only chemical production plant in Newfoundland. Its introduction into the Placentia Bay area was a first for the entire province. With no precedent to compare it to it is apparent that locally a lot of uncertainty surrounded what to expect from the plant. Most of the negotiations conducted involved officials from the provincial and federal governments. Long Harbour was not incorporated until 1968, the year the plant went into production. It had no town council, only a Board of Trustees. Erco personnel held a couple of public meetings with the local people. Films of other factories were shown and the people were given the impression that the community would undergo great changes and growth. Specific details of what actually would happen were scarce, but it is apparent from Tables 27-32, that people generally expected growth to follow from the construction of such a large plant. The following tables summarize the portions of question 7 of the questionnaire which relate to the topics of population and growth.

Table 27 - Effects of plant — Long Harbour

	Expected		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increases	57	100	23	40	33	58	1	25
Vandalism	5	100	4	80	1	20	0	0
Construction of More Stores	41	100	1	2	40	98	0	0
Opening of a Bank	34	100	1	3	33	97	0	0
Increase in School Enrolment	37	100	11	30	24	65	2	5
Increase in House Construction	54	100	40	74	13	24	1	2
Different Ethnic Groups in Long Harbour	10	100	0	0	10	100	0	0
Different Religious Groups in Long Harbour	24	100	2	8	22	92	0	0

Table 28 - Effects of plant — Long Harbour

	Didn't Expect		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increases	5	100	3	60	2	40	0	0
Vandalism	46	100	14	30	32	70	0	0
Construction of More Stores	19	100	0	0	19	100	0	0
Opening of a Bank	27	100	0	0	27	100	0	0
Increase in School Enrolment	13	100	2	15	10	77	1	8
Increase in House Construction	2	100	0	0	2	100	0	0

Table 28 - (continued)

	Didn't Expect		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Different Ethnic Groups in Long Harbour	49	100	0	0	49	100	0	0
Different Religious Groups in Long Harbour	33	100	1	3	32	97	0	0

Tabel 29 - Effects of plant Long Harbour

	*No Response to Whether or not Expected it		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increase	8	100	6	75	2	25	0	0
Vandalism	16	100	7	44	9	56	0	0
Construction of More Stores	8	100	2	25	6	75	0	0
Opening of a Bank	6	100	1	17	5	83	0	0
Increase in School Enrolment	13	100	9	69	4	31	0	0
Increase in House Construction	13	100	13	100	0	0	0	0
Different Ethnic Groups Settling in Long Harbour	8	100	0	0	8	100	0	0
Different Religious Groups Settling in Long Harbour	10	100	3	30	7	70	0	0

Table 30 - Effects of plant — Mount Arlington Heights

	Expected		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increases	12	100	7	58	5	42	0	0
Vandalism	5	100	1	20	4	80	0	0
Construction of More Stores	12	100	0	0	12	100	0	0
Opening of a Bank	10	100	0	0	10	100	0	0
Increase in School Enrolment	7	100	5	71	2	29	0	0
Increase in House Construction	16	100	12	75	4	25	0	0
Different Ethnic Groups Settling in Area	6	100	0	0	6	100	0	0
Different Religious Groups Settling in Area	6	100	0	0	6	100	0	0

Table 31 - Effects of plant — Mount Arlington Heights

	Did Not Expect		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increase	5	100	3	60	2	40	0	0
Vandalism	11	100	3	27	8	73	0	0
Construction of More Stores	6	100	2	34	4	66	0	0
Opening of a Bank	9	100	0	0	9	100	0	0
Increase in School Enrolment	5	100	1	20	4	80	0	0
Increase in House Construction	1	100	1	100	0	0	0	0
Different Ethnic Groups Settling in Area	10	100	0	0	10	100	0	0
Different Religious Groups Settling in Area	8	100	0	0	8	100	0	0

Table 32 - Effects of plant — Mount Arlington Heights

	*No Response to Whether or Not Expected		Happened		Did Not Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Population Increase	5	100	5	100	0	0	0	0
Vandalism	8	100	4	50	4	50	0	0
Construction of More Stores	6	100	3	50	3	50	0	0
Opening of a Bank	4	100	0	0	4	100	0	0
Increase in School Enrolment	4	100	3	75	1	25	0	0
Increase in House Construction	5	100	5	100	0	0	0	0
Different Ethnic Groups Settling in Area	5	100	0	0	5	100	0	0
Different Religious Groups Settling in Area	7	100	1	14	6	86	0	0

* Certain people did not answer part one of question seven because either they were too young when the plant was built; they were not living in Long Harbour/Mount Arlington Heights when the plant was built; or else they did not know what to expect from the plant.

In Long Harbour 62 people answered part one of question 7, "Did you expect the population to increase when the plant was built?" Of these 62, 57 (92%) respondents stated that they did expect the population to increase. In Mount Arlington Heights, out of 17 respondents, 12 (71%) stated that they had expected an increase in population. Of the 57 respondents in Long Harbour who had expected an increase 23 (40%) said that it has while 33 (60%) said that it has not. In Mount Arlington Heights 58% (of the 12) responded in the affirmative and 42% responded negatively. Of those who responded that the population had increased many commented that the increase was not great and was largely

due to people marrying and bringing their spouses into the community or due to young people remaining in the community and not going outside to find work, an historically popular response to poor employment opportunities in that area. In other words the population increases were largely associated with the normal processes of community development and were expereinced by most communities. The increases were not associated with the unique Long Harbour/Mount Arlington Heights experience with Erco Industries.

In Mount Arlington Heights the recognition of a population increase is understandable and can be more closely connected to the construction of the plant. During the first Resettlement Program in the 1960's eight families from Bar Haven and Western Cove settled in the community bringing approximately fifty people to a community of about 200, thus creating quite a rapid swell in population. Mount Arlington Heights was not a designated growth centre, but the Erco plant promised steady employment where other areas did not. Seven households settled in Long Harbour, a good boost to the population of about 350, a growth rate of about 11%, but not quite as conspicuous as the 25% growth which occurred in Mount Arlington Heights.

Long Harbour was not a designated growth centre during the Resettlement Program in spite of the construction of a major industrial project. There are several possible explanations for this decision. Long Harbour/Mount Arlington Heights is situated on a dead end road. The communities are not central in location. Dunville, which was designated an alternate growth centre, is a larger community (and was so at the time of the plant's construction) and is close enough to the plant that commuting is not too inconvenient. Dunville is also more

central to the other communities in Placentia Bay.

The following tables (numbers 33 and 34) show that the population of Long Harbour has increased minimally especially in lieu of a major industrial development being built on the community's doorstep. The figures are not as accurate as desired because until the 1976 census Long Harbour's population data was recorded separately. Beginning with the 1976 census Long Harbour and Mount Arlington Heights are treated as one community (due to the recent incorporation of both communities under a single town council). In calculating the growth of population in Long Harbour approximations had to be used in the years from 1976 to 1981. Taking the population in 1981 to be 400 the population of Long Harbour has increased by only 45 people since the plant was built. This is an especially low growth considering that the Resettlement Program brought 40 people into the community in the late 1960's. In 1971 the population of Mount Arlington Heights was 337. By estimating the 1976 and 1981 populations of Long Harbour as 400 it appears that the population of Mount Arlington Heights has dropped to 254 in 1981, a drop of 83 people since 1971. This may be inaccurate because of the unavailability of separate census data and the necessity of relying upon approximations. Since 1976 the combined populations of Long Harbour and Mount Arlington Heights has dropped by about 21 people. According to the 1981 census data in the five year period between 1976 and 1981 there were fifty new people who settled in Long Harbour/Mount Arlington Heights and seventy people who migrated out of these communities; explaining the drop in population. (Figures do not correspond exactly because the census data relies upon samples and rounding.)

Table 33 - Population 1951-1981
Long Harbour/Dunville/Placentia/Freshwater

Year	Long Harbour	Dunville	Placentia	Freshwater
1951	409	563	614	810
1956	322	869	1,233	1,048
1961	356	1,121	1,610	1,396
1966	355	1,622	1,847	1,310
1971	376+	1,742	2,211	1,562
1976	675*	1,909	2,209	1,426
1981	654*	1,797	2,185	1,265

* Also includes figures for Mount Arlington Heights
\+ Mount Arlington Heights' population was 337

Table 34 - Population growth (%) 1951-1981
Long Harbour/Dunville/Placentia/Freshwater

Years	Long Harbour	Dunville	Placentia	Freshwater
1951-1956	-21	54	100	30
1956-1961	10	29	30	33
1961-1966	-0.2	45	15	-6
1966-1971	6	7	20	19
1971-1976	6*	10	-0.1	-8
1976-1981	0*	-6	-1	-11

* Estimated population of Long Harbour as 400 for period spanning 1976-1981. Census figure combines population figure for Long Harbour and Mount Arlington Heights.

From the 1950's until 1966 Long Harbour's growth rate was poor comparable to that of other communities in Placentia Bay. The construction of the plant boosted the population by 6%, a figure comparable to the growth rate in Dunville which until that time had been experiencing rapid growth. The pull out by the Americans from the Argentia Base adversely affected the growth of Dunville. In the early 1970's Long Harbour and Dunville continued to experience small increases in population while Freshwater and Placentia experienced negative growth periods probably in response to favourable economic opportunities on the mainland of which many young people took advantage. Although in this period Long Harbour experienced a growth of 6%, it translates into 24 people, not a large number and although the census data does not deal with it there was a large exodus of young people out of the communities of Long Harbour/Mount Arlington Heights. One interviewee estimated there to be 35-40 young people from these communities living in Alberta, especially in Fort MacMurray. If these young people had been able to stay in Long Harbour along with their families the growth rate for the area would have been far greater than it had been. Also the Erco housing, a 25 unit subdivision was constructed in Dunville not Long Harbour. This would have greatly boosted the local population. By building in Dunville many people were left with the impression that the plant was somehow dangerous or at least unpleasant to live beside. This may have discouraged other people from settling in the area.

It is interesting that although many people do not believe that the population increased, a great number believe there has been an increase in house construction. In Long Harbour 54 people (96% of those who responded) stated that they had expected an increase in

house construction. Of these 54, 74% stated that an increase had occurred and only 24% said that it had not. This is attributable to the fact that young people are growing up, marrying, and remaining in the community. Since 1971 there have been 55 new houses built in Long Harbour/Mount Arlington Heights, 37% of the total number of houses (147) in the community. Fifteen to twenty of these houses have been built in the last couple of years. The recent building boom is the result of several things. In the early years of the plant's history there may have been a freeze on land. (There is a strong rumour of such a freeze, but there is no official awareness of it.) As well in the last couple of years the out-migration characteristic of the 1970's has been greatly reduced as employment opportunities on the mainland have been decreased.

In Long Harbour 41 people (68% of those who responded) said that they expected the construction of more stores. In Mount Arlington Heights 12 people (67% of the total respondents) expected more stores to be constructed. In Long Harbour 65 (96%) of the total 68 respondents replied that no new stores had been built in the area since the Erco plant was built. The remaining three noted that a small mini mart was soon to be built in Mount Arlington Heights. In Mount Arlington Heights only 5 respondents, 21% of the total mentioned the construction of this new store.

Long Harbour has four small family owned confectionary stores. One closed this spring when the owners retired. Mount Arlington Heights has one family owned confectionary store which will be replaced by a mini mart owned by the same family in 1983. All of these stores have existed since the plant was built. No new stores have been built

For clothing, furniture, hardware, and for most people, groceries (the selection in the local stores is limited and the meats are frozen) it is necessary to drive to Placentia, St. John's or elsewhere.

In response to whether or not it was expected that a bank would be built in Long Harbour or Mount Arlington Heights the respondents are divided. In Long Harbour 34 people, 51% of the total respondents expected the construction of a bank while 27 people or 40% did not expect a bank to be built. In Mount Arlington Heights the division is 43% who expected a bank and 39% who didn't expect it. Those who didn't expect a bank to open a branch stated that Long Harbour and Mount Arlington Heights were too small in population to support a branch, and once it was evident that the Erco personnel were settling in Dunville the chances of getting a bank were even slimmer. Those who said that they had expected a bank to be built had also expected the population to increase and that such a large industry, with a large payroll and so forth would easily support a bank. Two respondents noted that a Scotia Bank had opened up in Whitbourne a more centrally located community.

Few people in Long Harbour or Mount Arlington Heights expected different ethnic/religious groups to settle in these communities. (See Tables 35-6, pages 106-109). These communities were Roman Catholic when the phosphorous plant was built and the local people did not expect it to change much. When people recognized a change they stated that a small handful of Protestants was a big change. No people from different ethnic groups have settled in the area, although people of varied backgrounds from countries all over the world come to

the area as crew members on the supply and cargo ships. Their contact with the local people is minimal.

Life style

It is apparent from the following tables (numbers 35 and 36) that a large majority of the respondents feel that the following aspects of community life style have changed very little since they moved to Long Harbour or Mount Arlington Heights; privacy, friendliness of the people, community closeness and togetherness, community spirit and family togetherness. A few generalizations can be made on the comments expressed by those who said that changes had occurred. The majority of people commented that the changes were negative ones. In recent years people tend to spend more times in their own homes involved with their own family units, rather than in community oriented projects. The different responses were not concentrated in particular age groups but were spread through the categories.

Table 35 — Changes in community life style — Long Harbour

		Years Lived in Long Harbour									Total	
		1-5 yrs.	6-10 yrs.	11-20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	61 & Over	Unknown	No.	%
Privacy	same	6	4	10	18	8	2	6	5	1	60	82
	less	0	1	1	0	0	0	0	4	0	6	8
	more	1	0	1	2	1	0	2	0	0	7	10
											73	100
Friendliness of the people	same	6	5	11	18	6	1	6	7	0	60	81
	less	1	1	1	2	2	1	2	2	1	13	18
	more	0	0	0	0	1	0	0	0	0	1	1
											74	100
Community Closeness & Togetherness	same	6	4	10	14	5	0	8	6	0	53	75
	less	0	2	1	4	4	2	0	2	1	16	23
	more	1	0	0	1	0	0	0	0	0	2	3
											71	101
Community Spirit	same	5	4	11	17	7	1	6	7	0	58	85
	less	0	0	1	1	0	0	1	0	1	4	6
	more	1	1	0	0	2	0	1	1	0	6	9
											68	100
Family Togetherness	same	5	5	7	15	8	2	7	6	1	56	82
	less	1	0	2	3	0	0	1	1	0	8	12
	more	1	1	2	0	0	0	0	0	0	4	6
											68	100
No. of Young People Staying in Long Harbour	same	2	2	4	3	1	0	4	1	0	17	25
	fewer	4	1	3	8	4	0	3	5	1	29	43
	more	0	2	3	8	4	1	1	2	0	21	31
											67	99

Table 35 - (continued)

		1-5 yrs.	6-10 yrs.	11-20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	61 & Over	Unknown	No.	%
Church Attendance	same	6	4	8	13	3	1	5	4	1	45	64
	decreased	0	1	0	2	1	0	1	2	0	7	10
	increased	0	1	3	5	4	1	2	2	0	18	26
											70	100
Club and Group Affiliations	same	1	0	2	3	1	2	0	0	1	10	15
	reduced	1	1	1	0	0	0	2	1	0	6	9
	increased	4	5	8	16	8	0	6	5	0	52	76
											68	100
Sports	same	2	5	4	5	2	1	1	1	0	21	30
	less	0	0	0	1	1	1	1	0	0	4	6
	more	3	1	7	14	6	0	6	7	1	45	64
											70	100
Commercial Fishing	same	4	2	3	3	1	0	1	2	0	16	23
	less	2	2	7	13	7	2	7	5	0	45	65
	more	1	0	2	3	1	0	0	1	0	8	12
											69	100
Sports Fishing	same	5	5	7	12	5	1	8	4	1	48	72
	less	0	0	3	4	0	0	0	1	0	8	12
	more	1	1	0	2	3	1	0	3	0	11	16
											67	100
Hunting	same	5	5	7	13	7	1	4	5	1	48	72
	less	0	0	1	1	0	0	1	0	0	3	4
	more	2	1	2	3	2	1	2	3	0	16	24
											67	100

Table 36 - Changes in community life style — Mount Arlington Heights

		Years Lived in Mount Arlington Heights							Total	
		*11-20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	61 & Over	Unknown	No.	%
Privacy	same	8	4	2	0	5	2	0	21	91
	less	0	2	0	0	0	0	0	2	10
	more	0	0	0	0	0	0	0	0	0
									23	101
Friendliness of the People	same	7	5	0	0	4	2	0	18	78
	less	0	1	2	0	1	0	0	4	17
	more	1	0	0	0	0	0	0	1	4
									23	99
Community Closeness and Togetherness	same	8	5	0	0	5	2	0	20	87
	less	0	0	2	0	0	0	0	2	9
	more	0	1	0	0	0	0	0	1	4
									23	100
Community Spirit	same	5	5	1	0	4	2	0	17	81
	less	1	0	1	0	0	0	0	2	9
	more	1	0	0	0	1	0	0	2	9
									21	99
Family Togetherness	same	4	5	2	0	5	2	0	18	90
	less	2	0	0	0	0	0	0	2	10
	more	0	0	0	0	0	0	0	0	0
									20	100
No. of Young People staying in Mount Arlington Heights	same	5	1	0	0	2	0	0	8	40
	fewer	1	4	0	0	3	2	0	10	50
	more	0	0	1	0	0	1	0	2	10
									20	100

Table 36 - (continued) Mount Arlington Heights

		*11-20 yrs.	21-30 yrs.	31-40 yrs.	41-50 yrs.	51-60 yrs.	61 & Over	Unknown	No.	%
Church Attendance	same	3	2	1	0	3	1	0	10	50
	decreased	1	1	0	0	0	1	0	3	15
	increased	2	3	0	0	2	0	0	7	35
									20	100
Club & Group Affiliations	same	1	0	2	0	2	0	0	5	23
	reduced	1	0	0	0	0	0	0	1	4
	increased	5	6	0	0	3	2	0	16	73
									22	100
Sports	same	3	1	1	0	0	1	0	6	27
	less	2	0	1	0	0	0	0	3	14
	more	5	2	0	0	5	1	0	13	59
									22	100
Commercial Fishing	same	4	0	1	0	3	0	0	8	36
	less	6	3	1	0	2	2	0	14	64
	more	0	0	0	0	0	0	0	0	0
									22	100
Sports Fishing	same	3	0	0	0	1	0	0	4	25
	less	0	1	0	0	0	0	0	1	6
	more	4	1	1	0	4	1	0	11	69
									16	100
Hunting	same	6	1	2	0	1	0	0	10	56
	less	0	2	0	0	1	0	0	3	17
	more	2	0	0	0	3	0	0	5	28
									18	101

Response to whether or not the remaining aspects of community life style presented in Tables 35-36 have changed vary. Opinion on whether or not more or fewer young people are staying in the communities than used to stay is divided. In Long Harbour 43% responded that fewer young people are staying while 31% feel that more are staying and 25% say that the same number stays as always has. In Mount Arlington Heights 40% believe that there has been no change while 50% and 10% believe that fewer or more respectively are remaining. It is obvious that this is a lot of confusion surrounding this topic. No particular response appears to be concentrated in a specific time category. The responses are spread throughout the categories. The issue is clouded for many reasons. First of all a great number of young people from Long Harbour/Mount Arlington Heights have moved to the mainland of Canada. Therefore many of the respondents have relatives and friends who have been forced to leave the area to find work. In the last couple of years the job market on the mainland has dried up. Increasingly out-migration is no longer an option for the young people of the area. Added to this is the increase in house construction by young couples in recent years. The federally supported community development programs employ a large number of young men in temporary positions, but permanent positions are extremely scarce which motivated many respondents to say young people must be leaving in order to find work. It was an assumption rather than an observation.

Club and group affiliations and involvement in sports has increased as evidenced by the previous tables. This is a direct result of Erco Industries which has financially supported local

charities and community groups, and the construction of a community sports field in Long Harbour. It does not appear that sports fishing or hunting were very popular before the plant was built. Hunting has remained about the same if it has not increased a small amount through the accessibility of game licenses, and sports fishing has increased in popularity because non-local people are now driving into the area. The improvements in the access roads have made this popular. The state of commercial fishing was discussed previously in Chapter 5, pages 65 and 73.

In Tables 27-32, pages 95-98 respondents' expectations and observations on vandalism are recorded. It is generally expected that communities which become the site of huge industrial developments will undergo rapid growth and will attract many people from a variety of backgrounds who will not be absorbed into the local society, but will settle in the outer fringes. Petty crimes, vandalism and related activities result. Only 5 respondents in each of Long Harbour and Mount Arlington Heights expressed an expectation that vandalism would occur. Although 25 people in Long Harbour and 8 people in Mount Arlington Heights noted that there is vandalism in the communities most people said that it had nothing to do with the plant. People tended to blame it on the changing times, saying vandalism happens everywhere. In Long Harbour/Mount Arlington Heights the vandals have destroyed the communities' bus shelters.

Education

Long Harbour has only one school, Xavier Central High School which teaches grades 7-11. Until the spring of 1974 Long Harbour had

another school, St. Jerome's Elementary which taught grades 1-6. Mount Arlington Heights had St. Bartholemew's Elementary School which taught grades 2-5. In 1973 the Roman Catholic School Boards of Placentia-St. Mary's and Conception Bay Centre realigned their schools. This resulted in the closing of St. Jerome's and St. Bartholemew's and the construction of a new elementary school in Chapel Arm, Holy Family Elementary which teaches grades 1-6. As of the fall term of 1974 elementary students are bussed from Long Harbour/Mount Arlington Heights to Chapel Arm. High school students have bussed from Chapel Arm and Bellevue to Xavier High since the fall of 1973.

Xavier High was built in 1970. A gymnasium was built in 1975. Erco Industries donated 15,000 dollars to the construction of the school and contributed another 10,000 dollars towards the gym. Mr. Bon Fagan of the Placentia-St. Mary's Roman Catholic School Board commented that the main effects of the construction of the Erco phosphorous plant on the High School has been a sustaining of the student population. He said, "A few young families returned to the province to seek employment at the plant, but this created only a very slight increase in student population." Actually the student population of Xavier has dropped since 1976 as shown in Table 37. This drop in enrolment has been experienced throughout the district of Placentia-St. Mary's reports the superintendent of that School Board. Smaller families in recent years have resulted in smaller enrolments in Kindergarten which means lower enrolments in high school. School enrolment throughout the area has dropped. Total school enrolment for the schools under the Placentia-St. Mary's Roman Catholic School Board

has dropped from 5,349 students in 1971-72 to 3,784 in 1981-82. It is believed that if Erco had not been built more and more families would have been forced to leave the area to seek employment and the drop would have been even greater.

The following tables provide the names of schools, numbers of students enrolled, and number of teachers employed for the years 1969-70 to 1981-82. The tables were supplied by the Provincial Department of Education in the Directory of Schools 1969-1982. The realignment of the schools shows large increases in the student enrolment for Xavier High in the year 1973 when the school's capacity was expanded.

Table 37 - Student enrolment 1971-72 to 1981-82
Long Harbour and Mount Arlington Heights

	1971-1972	1972-1973	1973-1974	1974-1975	*1976-1977	1978-1979	1979-1980	1981-1982
St. Jerome's	79	77	83	-	-	-	-	-
St. Bartholemew's	44	42	35	-	-	-	-	-
Xavier	121	112	163	162	180	161	150	150
Long Harbour (Total)	244	231	281	162	180	161	150	150

Table 38 - Teachers employed by school 1969-1981-82
Long Harbour and Mount Arlington Heights

	1969-1970	1971-1972	1972-1973	1973-1974	1974-1975	*1976-1977	1978-1979	1979-1980	1981-1982
St. Jerome's	3	3	3	3	-	-	-	-	-
St.Bartholemew's	2	2	2	2	-	-	-	-	-
Xavier	5	6	6	9	8	8	8	8	8
Long Harbour (Total)	10	11	11	14	8	8	8	8	8

* 1975-1976 figures are not available
1977-1978 " " " "
1980-1981 " " " "

Religious affiliation

The support of various denominations and churches in a small community may be affected by the construction of a new industry and the accompanying influx of workers. With only a slight change in the populations of Long Harbour/Mount Arlington Heights since the construction of the Erco plant and the overwhelming support of the Roman Catholic faith the effect upon the local church has been minimal. Long Harbour/Mount Arlington Heights is predominantly Roman Catholic. Its only church is Roman Catholic, as is its only school. Several people of other denominations have married Roman Catholics and settled in Long Harbour/Mount Arlington Heights. The majority of these are non-practising or attend the Roman Catholic services.

Accurate figures on the denominational breakdown for Long Harbour and Mount Arlington Heights are not available. The local parish does not keep such records and the census data is virtually meaningless because of the exclusion of Mount Arlington Heights from

the 1971 census and the combination of the two communities in 1981. Father Gordon Walsh, the priest for the St. Francis Xavier Parish in Long Harbour reports that the congregation is about the same in size as it always was, if it has not increased slightly. By referring to Tables 35-36 it is apparent that the majority of respondents concur with Father Walsh. Ninety per cent of the respondents in Long Harbour stated that church attendance had either increased or stayed the same while 85% of those in Mount Arlington Heights shared this view.

Polity

Long Harbour was not incorporated and consequently did not have a town council when construction began on the Erco plant. Long Harbour became incorporated in October of 1968, about the time that production began on the plant. Mount Arlington Heights was invited to join with Long Harbour but the majority of people voted against it, fearing having to pay high taxes.

For the first years of the plant's history Long Harbour did not have a council, but an appointed Board of Trustees. In the mid-1970's a town council was formed, jointly incorporating Mount Arlington Heights. The council was formed to acquire better public services for the community, such as garbage collection and street lighting. Previously the community was a Local Improvement District. By forming a town council the community had better access to government grants. The council members reported that organizing a body for negotiations with Erco was not a motivating force behind forming the council. Members of the town council come from many different occupational backgrounds, including a teacher and a fisherman. Three members of

the council work at the plant or have a spouse employed there. Regular meetings are held between plant officials and the council. Relations with the plant are reported to be fairly good, as evidenced by the following.

The council members have succeeded in getting the plant officials more involved in community projects. The town council administers the Erco financed Community Fund. The town council also checks upon the pollution problems created by the plant, through regular meetings with plant personnel. This council has also increased the amount of taxes paid by Erco (see Chapter 5).

Although the town council claims to have a good relationship with the plant, a citizens' action group has developed. Carmelita Bruce, the clerk for the town council and a member of the citizens' action group, said that the citizens' action group was not formed as a result of council's inability to negotiate with the plant. The citizens' group was formed in one or two days by a few concerned individuals who united to form a strong body in seeking compensation from the plant for damaged roofs, windows, and siding caused by the growth of moss on homes. The group claimed that the moss was caused by emissions from the Erco plant. A graduate student in lichenology brought in by Erco to study the moss concluded that the moss was common in the area and Erco could not be proved responsible. As well as Ms. Bruce, one councillor is a member of the citizens' group. Ms. Greene, the head of the citizens' group refused to comment on the citizens' group, claiming it to have been a frustrating, disappointing exercise.

In the following tables the relationship between Erco Industries and the citizens of Long Harbour and Mount Arlington Heights are explored. Table 39 shows that the majority of people, 71% of the respondents in Long Harbour and 68% of the respondents in Mount Arlington Heights, feel that Erco officials consider local concerns to be important or very important. Out of the 75 respondents who stated whether or not they felt that Erco's concern had changed 66% stated that Erco's reactions had improved while 33% felt that it had remained the same. This satisfaction with Erco's treatment can be attributed to the recent expenditures in the area of pollution control (see Table 41, page 119 and Table 47, page 128) and the increased community contact with plant officials and local people. Local social events are attended by Erco officials much more frequently in recent months, perhaps in recognition of the strained relations with the community resulting from the moss controversy. As well Erco's charitable donations are recognized and appreciated.

Table 39 - How important are local concerns to Erco management?

	Long Harbour		Mt. Arlington Hgts.		Total	
	Number	%	Number	%	Number	%
Very Important	17	25	2	9	19	21
Important	31	46	13	59	44	49
Not Very Important	6	9	2	9	8	9
Not Important	8	12	2	9	10	11
Sometimes Important/ Sometimes Not	2	3	1	5	3	3
Don't Know	4	6	2	9	6	7
Total	68	101	22	100	90	100

+ Not equal to 100% due to rounding.

Table 40 - Changes in how Erco treates local concerns

Previous Response	Long Harbour						Mount Arlington Heights						Total			Total		
	Improved		Stayed the Same		Gotten Worse		Improved		Stayed the Same		Gotten Worse		Improved	Stayed the Same	Gotten Worse	Improved	Stayed the Same	Gotten Worse
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%						
Very Important	12	32	2	13	0	0	2	22	0	0	0	0	15	2	0	30	8	0
Important	23	56	5	31	0	0	7	78	4	50	0	0	30	9	0	60	38	0
Not Very Important	2	5	4	25	0	0	0	0	2	25	0	0	2	6	0	4	25	0
Not Important	2	5	4	25	1	100	0	0	2	25	0	0	2	6	1	4	25	100
Sometimes Important/ Sometimes Not	1	2	1	6	0	0	0	0	0	0	0	0	1	1	0	2	4	0
Total	41	100	16	100	1	100	9	100	8	100	0	0	50	24	1	100	100	100

Table 41 - Ways to improve communications and relations between Erco and the communities

	Long Harbour		Mt.Arl.Hgts.		Total	
	No.	%	No.	%	No.	%
Hire more People from Long Harbour/Mount Arlington Heights	6	8	1	5	7	7
Liaison Officer	1	1	0	0	1	1
Regular Meetings with Council	3	4	1	5	4	4
Provide more Jobs	1	1	0	0	1	1
Closer Contact with People	13	16	4	18	17	17
Phone In System	1	1	0	0	1	1
Other	5	6	4	18	9	9
Doing Well Already	34	43	8	36	42	42
Don't Know	15	19	4	18	19	19
Total	79	+99	22	100	101	+100

Quality of life

This section examines several influences upon the lives of local residents created by the Erco phosphorous plant. These influences can affect the satisfaction and security which people have in their way of life. The topics discussed are those which must be dealt with by Long Harbour/Mount Arlington Heights' citizens on a continuous basis. The topics are summarized under two general categories, "Pollution" and "Safety Conditions".

Pollution

As mentioned earlier, Erco has been plagued with pollution problems. As evidenced by Tables 42-43 pollution continues to be a major problem for the local people. Pollution is a far greater problem for the citizens of LongHarbour than it is for those in Mount Arlington Heights. Table 42 shows that in Long Harbour of the 90 responses to the question, "How can Erco Industries improve the quality of life for Long Harbour residents?" 36% (more than twice the

Table 42 - Ways in which Erco can improve the quality of life

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Cut Down On Pollution	32	36	4	15	36	31
Hire more Young People	4	4	3	11	7	6
Hire more Women	2	2	2	7	4	3
Hire more People from Long Harbour/Mount Arlington Heights	6	7	3	11	9	8
Increase Donations	4	4	1	4	5	4
More Community Contact	4	4	0	0	4	3
Doing Well Already	11	12	3	11	14	12
Other	13	14	5	19	18	15
Don't Know	14	16	6	22	20	17
*Total	90 N = 61	+99	27 N = 14	100	117	+99

* Several respondents gave multiple responses.
+ Less than 100% due to rounding.
N Total number of residents.

number of the next highest response) involved cutting down on pollution. In Mount Arlington Heights only 15% of the total responses involved the issue. Pollution is not such an important issue in Mount Arlington Heights, as it is in Long Harbour because as previously mentioned it is geographically removed from the plant site. For example, referring to

Table 43, 57 respondents (80%) in Long Harbour reported that dust was released from the plant while in Mount Arlington Heights only 10 out of the 24 respondents or 42% commented on the dust. (In general the respondents noted that dust is not a problem in the Heights, but is further down in the community of Long Harbour.) A similar situation is revealed regarding whether or not the plant was noisy in Mount Arlington Heights only 39% of the respondents noted the noise compared to 62% in Long Harbour. (While undertaking the survey ferro explosions were experienced at the plant. These explosions are rare occurrences, but very startling in their loudness and suddenness. Responses to the question of whether or not the plant is noisy were more frequently in the positive after the explosions.) Regarding pollution which is more general in its effects, such as water pollution, the responses from Long Harbour and Mount Arlington Heights were more compatible with an affirmative response from 67 and 70 per cent of the respondents from each community respectively.

The dust referred to in the above paragraph is coke dust which is released from the plant during its operation. Apart from creating a gloomy haze about the area the dust is a source of great annoyance for the community. The dust settles on windows and it is virtually impossible to keep them clean. The dust also accumulates in the grooves of sliding windows and cannot be removed. The dust also creates havoc for people who wish to dry their clothes outdoors. A car wash was installed at the Erco plant to remove the dust off cars parked on site. However dust covered cars continue to be a problem for local residents. Meetings are held regularly between the town council and Erco representatives. The dust problem is an often discussed topic.

Table 43 - Pollution resulting from Erco plant

Type of Pollution	Long Harbour						Mount Arlington Heights					
	Yes		No		Don't Know		Yes		No		Don't Know	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Dust	57	80	13	18	1	2	10	43	13	57	0	0
	N = 71						N = 23					
Water Pollution	47	67	16	23	7	10	14	70	3	15	3	15
	N = 70						N = 20					
Noise	44	56	27	38	0	0	9	41	13	59	0	0
	N = 71						N = 22					
Other Types of+ Pollution	34	51	32	48	1	1	13	59	8	36	1	4
	N = 67						N = 22					

Note: The N values changes with each cell because some respondents declined to answer all portions of this question.

+ See Table 66, Appendix C, page 157 for a description of these types of pollution.

The council complains that they are told that the dust levels are within permitted levels, but they are never told just what these limits are. Although the officials are believed to be sincere and careful in their efforts, it is believed by the town council that lesser officials such as foremen are not always as conscientious and this is partly responsible for some of the dust problems. Through negotiations with the plant the town council was successful in having a rule enforced that the cargoes of coke could not be unloaded when the wind was into the shore, thus cutting down on the amount of dust travelling into the community. Equipment, scrubbers have recently been installed in the smoke stacks which further reduces the dust.

In the early days of the plant's history there was an intercom system with loudspeakers on the plant site. The noise from these speakers could be heard all night and disrupted many people in their sleep. After complaints from the community the practise was halted. The major complaint now concerning noise relates to the previously mentioned ferro blasts.

In the Spring of 1969 just a few short months after the plant's start-up date, fishermen in the area reported finding fish with a red discoloration around the gills. The fish died from hemolysis of the blood cells caused by contact with phosphorous effluent released from the Erco plant. This incident in Erco history is known as "The Red Herring Scare". In May 1969 Erco closed its plant down until investigations into the matter could be concluded. Part of Placentia Bay was closed by government order. By July the plant was reopened.[1]

Dunphy et al state, "That the pollution problems were caused by the original planning and design of the plant and can now only be solved by the continuous addition of expensive equipment."[2] Since The Red Herring Scare Erco has changed its effluent system. Erco now treats all its effluent on land. Immediately following the scare the company set up a bottom dredging program to remove the sediments which could threaten the fish life. Today the Erco plant has three major systems for the treatment of effluent, ultimately rendering it harmless and releasing it into the Harbour.[3]

The Red Herring Scare resulted in a closing of part of Placentia Bay at the height of the fishing season. Approximately 400 fishermen were effected. Although the fish was analyzed by Canada's

Federal Food and Drug Agency and declared safe for human consumption, none of the fish ever reached the market. To compensate the fishermen the Canadian government made individual loans to fishermen based upon previous earnings. Erco set up a fund of $300,000 totalling twice that paid out by the federal government. "Until The Red Herring Scare there were no legal restrictions on the level of elemental phosphorous permissable in the effluent. As well, both the provincial and federal governments approved the original anti-pollution measures established at the Erco plant in Long Harbour."[4]

Besides The Red Herring Scare the Erco plant has been the centre of other major pollution dramas. Shortly after the plant opened vegetation along the roadway leading into the plant began to die. At a point several miles before reaching the plant the vegetation suddenly stopped. Fluoride emissions from the planthad killed the foliage. The same thing happened in the area surrounding Erco's Fort Maitland Plant in Ontario.[5] Also in the area of Long Harbour a deformed moose and two deformed rabbits were found. These animals had excessive levels of fluoride in their bones. This discovery lead to a public inquiry which concluded that the fluoride emissions were not a threat to human life. Monitoring of the fluoride and other pollutants emitted from the plant have continued until the present. A report published by the provincial Department of Environment in 1982 reported that therehas been a steady decrease in the levels of fluoride in the area since the early 1970's. The amount of fluoride in the drinking water is below the level suggested by Health and Welfare Canada for the prevention of dental cavities. Although not deemed harmful to humans the fluoride has another far less damaging

effect. The fluoride creates etches in car windshields which eventually reduces visibility and leads to the necessary replacement of the windshield.[6]

For a brief period the slag or solid waste products left over from the production of phosphorous had been used by local people as fill for basements during constructions. The slag was found to be slightly radioactive and it was recommended that the practise be stopped and it has been.

In the 1980's Erco has once again become the focus of a pollution controversy. Several local people (far more from Long Harbour than from Mount Arlington Heights) claim that emissions from the plant have resulted in the growth of moss on their roofs which separates the shingles and creates leaks. Several roofs have had to be replaced. A Concerned Citizens' Committee was formed lead by a local school teacher. Erco officials brought in a graduate student lichenologist who concluded that the moss was common in the area and it could not be proved that it was caused by the plant. A retired roofing expert was also hired to view individual roofs. He concluded that the shingles affected by the moss were improperly affixed to the roofs. Thus far no settlement has been made concerning the moss covered roofs as it has not been proved that Erco's emissions are the cause. Ms. Greene, the head of the Concerned Citizens' Committee refuses to comment on the results.

Other types of damage have been attributed to the plant (see Tables 44 and 45). One couple in Long Harbour claim that emissions from the plant have so damaged the roof, siding and windows of their home that it was cheaper to replace the old house, which they have done,

rather than fix it up. Dust is the major source of annoyance and most of the damage is attributed to it. No claims have yet been settled with Erco officials who state that there must be specific proof that Erco is actually to blame.

It is interesting that in spite of all its pollution problems 69% of the respondents in Long Harbour feel that Erco is making satisfactory efforts to control pollution and a further 63% in Mount Arlington Heights agree. As can be seen from Table 47 there is varied opinion on what Erco is doing to control pollution (See also Table 65, Appendix C, page 157). In the last few years Erco has been conspicious

Table 44 - Has the phosphorous plant damaged your property?

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Yes	34	45	6	25	40	40
No	34	45	14	58	48	48
Don't Know	7	9	4	17	11	11
Total	75	99*	24	100	99*	99*

* Not equal to 100% due to rounding

Table 45 - Ways in which the Erco plant has damaged your property

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Moss on Roofs/Siding	13	24	5	71	18	30
Etches in Car Paint/ Windshield	4	7	1	14	5	8
Dust on Windows	17	31	1	14	18	30
Dust Damaged Houses	6	11	0	0	6	10
Cracks in Foundation	3	6	0	0	3	5
Paint on Car	2	4	0	0	2	3
Killed Foliage	4	7	0	0	4	7
Can't grow Garden or Raise Animals	4	7	0	0	4	7
Ruined View	1	2	0	0	1	2
Total	54	99*	7	99	61	102*

Table 46 - Is Erco making satisfactory efforts to control pollution?

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Yes	52	69	15	63	67	67
No	19	25	3	13	22	22
Don't Know	4	5	6	25	10	10
Total	75	99*	24	101*	99	99*

* Not equal to 100% due to rounding

Table 47 - Ways in which Erco is controlling pollution

	Long Harbour No.	Long Harbour %	Mt. Arl. Hgts. No.	Mt. Arl. Hgts. %	Total No.	Total %
Dust has decreased	10	18	4	24	4	19
Spending Money/Installing New Equipment	9	16	1	6	0	14
Scrubbers Installed	3	5	1	6	4	5
More Community Contact	4	7	2	12	6	8
Reduced Fluoride Emissions	2	4	0	0	2	3
Don't Know	5	9	0	0	5	7
Other	8	14	8	47	16	22
Could be Doing More	6	11	0	0	6	8
General Improvements	10	18	1	6	11	15
Total	57	102	17	101	74	107*

in the amount of money it has been spending on pollution control devices. Coupled with this is a greater presence in the communities of Erco officials and personnel employed by Erco to investigate pollution problems. When asked if the efforts to control pollution had improved recently, 33 of the 37 respondents who said that efforts had improved, were among those who said that the efforts to control pollution were satisfactory. Erco's recent activities in the areas of pollution control have obviously made a big impression on a large segment of the population. The regrowth of local vegetation has also been a positive factor.

In spite of recent activities to curb pollution problems it remains unfortunate that these problems were allowed to occur in the

first place. More extensive investigations and preparation into the production of phosphorous and its potential effects upon the area would have prevented many of these travesties. Mr. Smallwood, himself, in an interview, admitted that the provincial officials did not know what to expect until the effluent polluted the bay and the government scrambled to investigate and set up restrictions and regulations. It is apparent from Tables 59-64, Appendix C, pages 155-156 that the local people were confused as to what to expect from the plant and were poorly prepared for it. From their own experiences with the Erco plant respondents in both Long Harbour and Mount Arlington Heights stated overwhelmingly that preconstruction planning was important/very important. (See Table 55, Appendix C, page 153).

Safety and health conditions

Many people have expressed concern that the health of employees at Erco Industries is subject to various unnecessary dangers arising out of the specific industry of phosphorous manufacture. This concern has received a lot of publicity and was the motivation behind the Industrial Commission Inquiry in 1972. In Table 48 job safety (in a tie with steady employment) was indicated by the largest number of respondents to be the most important issue concerning the Erco plant for both Long Harbour and Mount Arlington Heights.

Safety

In the early years of the plant's history the accident frequency was quite high. (See the following figure, page 131). In response to these high accident rates an Industrial Commission Inquiry was conducted by R. Hattenhauer in 1972. The results of this study

concluded that the major cause of accidents at Erco Industries in Long Harbour was attitude. Sixty-seven per cent of the accidents recorded between Fall 1968 and the summer of 1972 could have been avoided. Many were due to the improper use of safety equipment. Safety equipment was discarded because it was cumbersome or uncomfortable. A casual attitude was held by both the non-managerial personnel and the low levels of management. Erco had a tradition of technical and production problems in the early years. There was pressure to improve. At the level of lower management this translated into a pressure to increase production, which resulted in a reluctance to devote time to safety talks, safe preparation for jobs, and proper housekeeping, tidying up after a job is done. This resulted in a large number of avoidable accidents.[7]

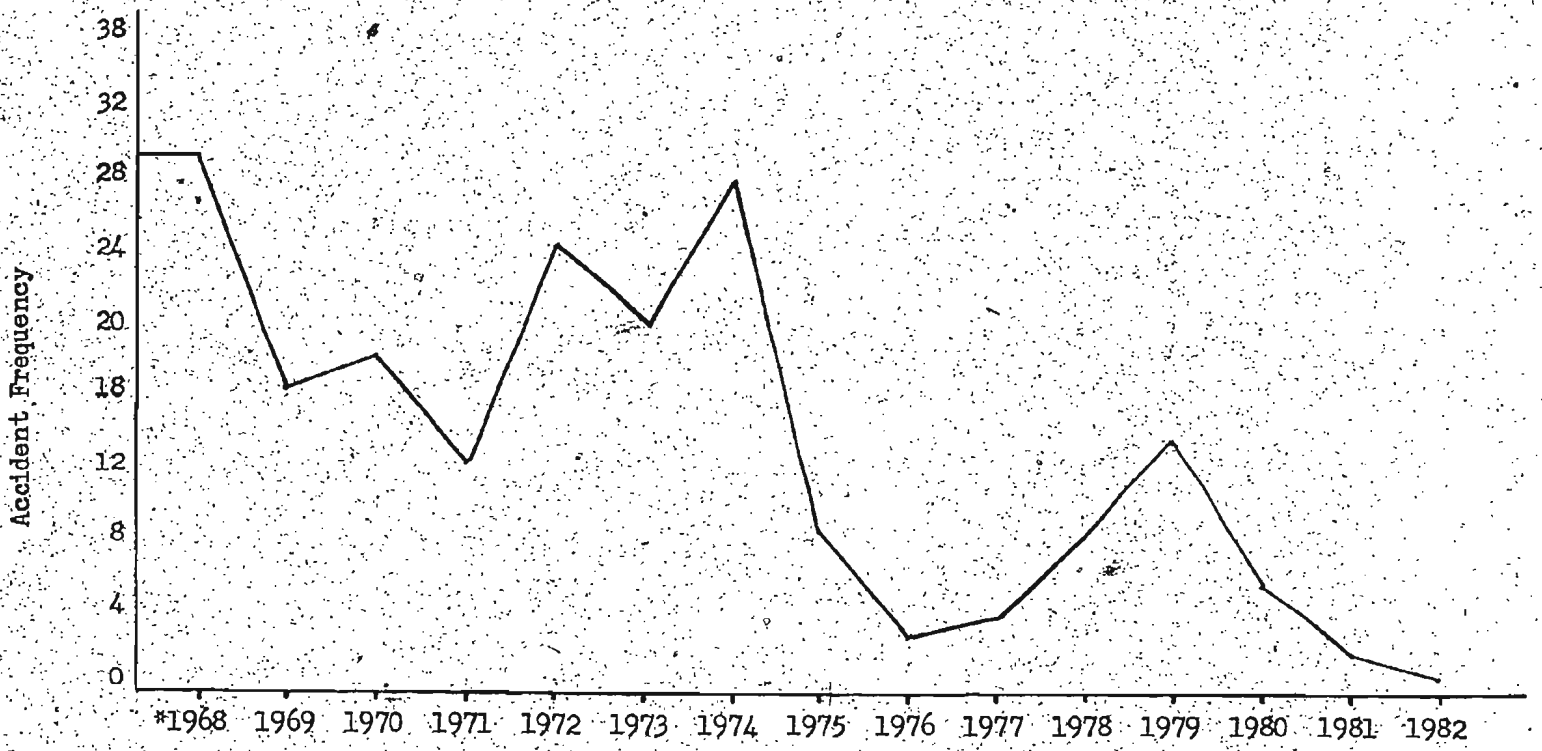
Table 48 - Most important issues concerning the Erco plant

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Steady Employment	36	20	11	19	47	19
Job Safety	36	20	10	17	46	19
Employment of Women	7	4	3	5	10	4
Employment of New Graduates	11	6	6	10	17	7
Dust	16	9	5	8	21	9
Noise	10	5	3	5	13	5
Plant Appearance	9	5	2	3	11	5
Fluoride Emissions	14	8	3	5	17	7
Salary Increases	10	5	2	3	12	5
Plant Close Down	7	4	2	3	9	4
Layoffs	5	3	2	3	7	3
Water Pollution	11	6	2	3	13	5
Increased Number of Jobs	10	5	8	14	18	7
Other	2	1	0	0	2	1
Total	184+	101*	59	98	243	100

+ Multiple responses
* Not equal to 100% due to rounding

LONG HARBOUR

ACCIDENT EXPERIENCE



* Does not represent a full year of production

Frequency = $\frac{\text{Number of Lost Time Injuries x 1,000,000}}{\text{Number of Man Hours Worked}}$

Source: Erco Industries

As evidenced by the previous figure by 1975 this began to change. The plant became safety conscious. Attitudes and work habits changed and consequently the accident rate dropped significantly. This new attitude culminated in a million man hours without a lost-time accident, approximately an entire year without time lost due to accidents. This feat was later extended by another 300,000 hours. Then in 1979 there was an accident which ended the marathon. Morale dropped and workers were not as careful as they had been. The accident rate increased. However by the next year it had dropped again and continued to do so. In the summer of 1983 the workers at the Erco phosphorous plant once again achieved one million man hours. (Accidents may occur, but unless they result in lost-time the record is not affected).

Erco has a safety department manned by a safety director who is in charge of developing policies, procedures and safety programs and administering same; one safety serviceman, and one stenographer. The company supplies safety hats, safety glasses, and 50% (up to $25 per year) toward the cost of safety boots. All of these items are mandatory for all employees during working hours. The company also supplied woolen clothing at a 25% discount. Gloves, respirators, asbestos coats with protective linings, hoods, leggings and face shields are also provided. New equipment is tested under actual working conditions by union members who make recommendations based upon their testing.[8]

Industrial work in general and the production of phosphorous specifically are potentially dangerous activities. Accidents, however, are not avoidable. A comprehensive safety program, the proper use of

safety equipment, proper job preparation and clean up and most importantly proper attitude are essential to prevent accidents. The casual approach to these areas was evident in the first few years of production and the result was a high accident rate. A new seriousness greatly reduced the accident rates and has resulted in the Erco plant being a very safe place to work in recent years.

Health hazards

The nature of phosphorous production is a unique industry to Newfoundland. It produces certain working conditions and by-products which may create discomfort and even threats to human health. The two major health hazards at the Erco plant occur in the furnace building and the pellet plant. In the furnace building ferro-phosphorous and slag are removed from the furnace by "tapping". Working conditions in this area can be quite unpleasant due to smoke and fumes created by small phosphorous fires or by fumes and gas leaking from the condensing system. A small amount of phosphorous on fire creates enough smoke to fill a room. Some works have suffered acute respiratory problems from these conditions.[9]

The furnace building has two other major health hazards: 1. carbon monoxide gas, and 2. phosphorous vapour. Although no serious cases of carbon monoxide poisoning have been reported, there have been a few cases of suspected CO poisoning, although it could not be proved as such. Until the early 1970's the monitoring system relied upon visual checks and conscientious employees.[10] At present a sequential sampling system located in the furnace building control room monitors CO levels throughout the plant. Should the CO

concentration exceed safe limits simultaneous alarms are given in the control room and in the field. The area in question is then evacuated.

Ventilation in the furnace building has been vastly improved while internal sources of smoke and fumes have been greatly reduced by the installation of new and better gas seals.

Phosphorous vapour can create phosphorous necrosis or phossy jaw. The vapour attacks open cavities in the teeth or open extraction sockets. For this reason all new employees to the plant are given dental examinations. If the worker has cavities or open extraction sockets (resulting from recently extracted teeth) he is restricted from working in the furnace building until his problems are corrected. According to the records of the Workmen's Compensation Board (quoted in Canadian Association of Health Task Force Study) there have been three cases of occupational illness attributable to phosphorous fumes, but the illnesses were not chronic. (Necrosis did not develop). Certain groups of employees, depending upon where their jobs place them, must have dental examinations every two months or four months. Annual complete mouth X-rays are also required for these employees.[11]

Workers in the pellet plant have to work full shifts without the benefit of filtered air. Dust particles may be inhaled and harm the respiratory system, and the dust contains fluoride.[12] During the early years of production dust made working in the pellet plant very uncomfortable. Today significant improvements have been made to the grate/kiln system which has greatly reduced dust levels.

The manufacture of phosphorous requires the use of silica.

which is also present in the phosphate rock. The presence of silica creates a very real risk of silicosis, an irreversible degenerative lung disease. Silicosis may develop slowly over years of regular exposure to silica dust. No incidence of silicosis has been found among the employees of Erco, Long Harbour, indicating that the levels of silica are within safe limits. However, it may be that not enough time has passed to reveal its effects. Annual X-rays and blood tests are required of all employees to monitor for evidence of silicosis and any other potential illness.[13]

Emissions from the Erco plant and their potential effects upon the health of both the employees and the local populace are monitored regularly by the provincial Departments of Health and Environment. The Erco plant has a full-time nurse in a well-equipped on-site clinic and a physician from St. John's spends one day each week at the plant. Erco also has an ambulance which has been loaned to the communities in an emergency.

Conclusion

The citizens of Long Harbour/Mount Arlington Heights expected their communities to grow in terms of population, construction and facilities. This has not occurred. The life style of the residents has changed little with the exception of an increased participation in local service and sports groups, directly related to the contribution of financial assistance to these organizations by the Erco officials. Since the construction of the plant Long Harbour and Mount Arlington Heights have been incorporated under a joint town council which claims to have a good relationship with Erco. Religious

affiliation has remained the same with only a small handful of Protestants settling into the predominantly Roman Catholic communities. School attendance has dropped slightly, a decrease experienced throughout the district. Pollution has been a major problem throughout the plant's history and remains an important concern for the local people, although less so for Mount Arlington Heights than for Long Harbour. Concern for job safety has translated into over one million man hours without a lost-time injury. Health hazards exist within the plant, but monitoring is a regular process and no serious illnesses have yet been recorded.

Footnotes

[1] "Waste Control in a Fragile Environment", Environmental Science and Technology V. 6 (November, 1972), p. 980.

[2] A. Dunphy et al, The Impact of Erco Upon Placentia Bay (St. John's, 1975), p. 2.

[3] Op. Cit. and Dunphy et al, p. 18.

[4] Science and Technology, p. 983, and Dunphy et al, p. 18.

[5] Executive, "Erco is Alive and Well", (1973), p. 2.

[6] Western Star (Corner Brook, Aug. 4, 1978), p. 1 and Canadian Public Health Association, Task Force on Fluoride (Ottawa: 1978), pp. 80-82.

[7] R. Hattenhauer, Report on Safety Conditions and Labour-Management Relations at the Electric Reduction Company of Canada Ltd. Long Harbour, Newfoundland (St. John's, 1972), pp. 70-6, 120.

[8] Ibid., pp. 60-93.

[9] Ibid., pp. 129-32.

[10] Op. Cit.

[11] Ibid., p. 138 and Canadian Public Health Association, p. 68.

[12] Ibid., p. 129.

[13] Canadian Public Health Association, pp. 69-70.

7

CONCLUSION

Conclusion

This section is not a summary of the material discussed in the previous chapters. The social and economic effects of the Erco phosphorous plant are provided in detail in Chapters 5 and 6. The purpose of this conclusion is to discuss the lessons learned from the Erco experience and how these lessons can be used by future planners to maximize the benefits of potential developments.

Erco Industries was brought into the province as part of a development strategy of Premier Smallwood in an attempt to diversify the province's economic base and reduce the dependence upon non-renewable resources (refer to page 34-section on staple theory). It was believed that such industries would act as growth poles, generating offshoot industries, requiring specialized services, and having multiplier effects which would be far-reaching, eventually contributing to the prosperity (and so to the well being of the general populace). Erco Industries did not become such a growth pole, proving that the impacts described above do not automatically result from the construction of such large industrial developments.

By encouraging industries dependent upon large amounts of capital and complex technology, the provincial government excluded local developers. Erco Industries is foreign controlled and owned, therefore profits are exported out of the region. Erco uses very few local resources and those it does are highly subsidized. Erco produces phosphorous to supply its own mother company, Albright and Wilson. The surplus is sold to several foreign countries. Not one offshoot industry has developed in Newfoundland. Profits from the Erco plant are not being absorbed locally leaving the province further dependent

upon external developers.

By studying the metropolis/hinterland relationship outlined in dependency theory, planners will be prepared for the ramifications of foreign controlled development of a region's natural resources. Dependency theory dictates that there must be local involvement in development. Control and ownership must exist locally for profits to remain in the region. Considerations such as these were not part of Smallwood's development strategy because he relied heavily upon regional science which advocated the establishment of industries because of their automatic growth pole characteristics. The Erco experience, however, has proven that development by itself is not enough.

Erco Industries is a chemical production plant which relies heavily upon automation which limits its employment capacity. Therefore the absorption of new workers is very limited, providing new graduates with little employment potential. A Marxist approach to development creates an awareness that capitalist endeavours are designed to maximize profits. Labour is purchased only as it supports this goal. In times of poor markets labourers will be laid off. Marxists state that capitalism requires a large reserve army of skilled, cheap, accessible labour which can be drawn from when necessary. Therefore according to Marxists large industrial structures may add to underdevelopment by its emphasis upon profit maximization not maximum employment. When investigating future developments, planners should consider the goals of these developments and whether or not they will support or conflict with local needs and goals.

It would appear in light of the Erco experience that future development strategies should investigate the potential of smaller, intermediate industries, requiring less capital which can be procured locally, and which would be more labour intensive to absorb the large sector of unemployed workers.

The Erco experience is an excellent example of the necessity of pre-construction planning. It is obvious from the text (see Chapters 5 and 6) that a great deal of uncertainty and confusion surrounded what to expect from the Erco development. Its expectations as a growth pole were never realized, bringing into question the generous concessions made to Erco. A socio-economic impact assessment could have anticipated these effects (or the lack of). An impact assessment would have also anticipated the inadequacies of the pollution control system, thus preventing the Red Herring Scare and the destruction of local vegetation. Future development must undergo extensive pre-construction planning and investigation to ensure adequate preparation and to offset any unanticipated occurrences such as resulted from the Erco plant.

As a source of employment for the Placentia Bay area the Erco plant is of great importance, especially in light of increasingly poor employment opportunities throughout the province. However its other positive impacts have been limited. In future, planners should not make assumptions about developments. All development projects should be thoroughly investigated so that the impacts realized correspond with those anticipated. In so doing the benefits created through development strategies can be maximized and the negative impacts minimized.

APPENDIX A

INFORMATION SOUGHT

FROM LOCAL BUSINESSMEN

Questions asked of local businessmen.

1. How important a customer is Erco Industries to your company?
2. How would you describe your company's relationship with Erco personnel? Have relations been fair, profitable, and pleasant?
3. How much in sales from your company is Erco responsible for in an average year?

APPENDIX B

QUESTIONNAIRE

QUESTIONNAIRE

1. How many members of this household work at the Erco Plant? _____

2. Do you work at the Erco Plant? Yes ___ No ___ Years? _____

   What is your job? _____

   Does your spouse work at the plant? Yes ___ No ___ Years? _____

   What is his/her job? _____

3. How many years have you lived in Long Harbour? _____

4. Were you living in Long Harbour when the plant was built? Yes ___
   No ___

5. Is their enough open land and water separating the plant from the community? Yes ___ No ___

6. How important is pre-construction planning (i.e. regulations to guarantee non-pollution and safety from any industrial development)?

   ___ Very important
   ___ Important
   ___ Not very important
   ___ Not important

7. When the plant was built were you expecting any of the following changes to occur? Which of these changes occurred?

	Expected	Didn't Expect	Happened	Didn't Happen
Higher wages				
Dust				
Water pollution				
Noise				
Other types of pollution				

Specify _____

	Expected	Didn't Expect	Happened	Didn't Happen
Population increases				
Vandalism				
Construction of more stores				
Opening of bank				
Increase in school enrolment				
Increase in house construction				
Different ethnic groups settling in Long Harbour				
Different religious groups settling in Long Harbour				

8. Have any changes occurred in any of these aspects of community life style?

___ Privacy	Less _____	More _____
___ Friendliness of the people	Less _____	More _____
___ Community closeness and togetherness	Less _____	More _____
___ Community spirit	Less _____	More _____
___ Family togetherness	Less _____	More _____
___ Number of young people just graduating school remaining in Long Harbour	Fewer _____	More _____
___ Church attendance	Decreased _____	Increased _____
___ Club and group affiliations	Reduced _____	Increased _____
___ Sports	Less _____	More _____
___ Commercial Fishing	Less _____	More _____
___ Sports Fishing	Less _____	More _____
___ Hunting	Less _____	More _____

9. Has the phosphorous plant damaged your property? Yes ___ No ___ Don't Know ___

If yes, describe the damage _____

10. Were you employed previously to working at the plant? Yes _____
No _____

Was your spouse? Yes ___ No _____

11. In what type of job were you employed? _____

Your spouse? _____

12. Why did you leave that job? _____

Why did your spouse? _____

13. How does your present salary compare with the salary you earned at your former job, taking inflation into consideration?

Higher ___ Lower ___ About the same ___

Your spouse's salary? Higher ___ Lower ___ About the same ___

14. (If unemployed) have you (your wife) tried to find employment outside of the home? Yes ___ No ___

15. What is available? _____

16. Are there many women employed at the Erco plant?

Yes ___ No ___ Don't Know ___ If yes, how many ___

In what types of jobs? _____

_____

Should there be more women employed at the plant? Yes ___ No ___

Why/Why not? _____

_____

17. Are young people graduating school able to find work at the plant?

Yes ___ No ___ Don't Know ___

If yes, how many jobs? _____

18. Are young people graduating school able to find work in other businesses and still remain living in Long Harbour? Yes _____
No _____
Don't Know _____

If yes, in what types of jobs? _____

If no, where do young people go to find work? _____

In what types of jobs? _____

19. Do you have any ideas for new sources of employment in the Long Harbour area? Yes ____ No ____ If yes, what are they? ____

_____

20. Has anyone in this household been laid been laid off from the plant? Yes ____ No ____

If yes, when was he/she laid off? _____

21. (If still laid off) do you think he/she will be rehired?

Yes ____ No ____ Don't Know ____

22. Is he/she looking for an alternate source of employment? Yes ____ No ____

23. Do you feel Erco is making satisfactory efforts to control pollution? Yes ____ No ____ In what ways _____

_____

_____

24. Do you feel such efforts have improved, decreased, or remained the same since January of 1982?

Why? _____

_____

25. Please rank the following issues concerning the Erco Plant in terms of importance to you with 1 (one) being the most important and 13 (thirteen) being the least important?

a) steady employment _____

b) job safety _____

c) employment of women _____

d) employment of new graduates _____

e) dust _____

f) noise _____

g) plant appearance _____

h) fluoride emissions _____

i) salary increases _____

j) plant closedown _____

k) layoffs _____

l) water pollution _____

m) increased number of jobs _____

26. What might Erco do to improve the quality of life for Long Harbour residents? _____

_____

27. What might Erco do to improve relations and communications between the plant and residents of your community? _____

_____

_____

APPENDIX C

Tables summarizing survey data

Total respondents 99

Households represented 99

Long Harbour 75

Mount Arlington Heights 24

* Not equal to 100 due to rounding.

Table 49 - Description of respondents by sex

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Female	48	64	19	79	67	68
Male	10	13	3	12	13	13
Male and Female	14	19	1	4	15	15
2 Males	2	3	-	-	2	2
2 Females	1	1	1	4	2	2
Total	75	100	24	99	99	100

Table 50 - Does anyone in this household work at the Erco plant?

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Yes	39	54	16	67	55	56
No	33	46	4	17	37	37
Retired/Not Called Back	3	4	4	17	7	7
Total	72	100	24	100	99	100

Table 51 - Number of people from household employed at plant

Number of People	Long Harbour No.	Long Harbour %	Mt. Arl. Hgts. No.	Mt. Arl. Hgts. %	Total No.	Total %
1	29	74	14	88	43	78
2	9	23	1	6	10	18
3	1	3	0	0	1	2
4	0	0	1	6	1	2
Total	39	100	16	100	55	100

Table 52 - How many years have you lived in Long Harbour/Mount Arlington Heights?

Time	Long Harbour No.	Long Harbour %	Mt. Arl. Hgts. No.	Mt. Arl. Hgts. %	Total No.	Total %
0 - 11 months	1	1	0	0	1	1
1 - 5 years	7	9	0	0	7	7
6 - 10 years	6	8	0	0	6	6
11 - 20 years	12	16	9	38	21	21
21 - 30 years	21	28	6	25	27	27
31 - 40 years	8	11	2	8	10	10
41 - 50 years	2	3	0	0	2	2
51 - 60 years	8	11	5	21	13	13
61 - 70 years	9	12	2	8	11	11
Unknown	1	1	0	0	1	1
Total	75	100	24	100	99	*99

Table 53 - Is there enough open land and water separating plant from community?

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Yes	21	28	14	58	35	35
No	50	67	9	37	59	59
No Opinion	4	5	1	4	5	5
Total	75	100	24	100	*99	*99

Table 54 - Years worked at the plant

Time	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
0 - 11 months	5	10	2	10	7	10
1 - 5 years	9	18	1	5	10	14
6 - 10 years	7	14	3	15	10	14
11 - 15 years	23	46	10	50	33	47
Unknown	6	12	4	20	10	14
Total	50	100	20	100	70	*99

Table 55 - Importance of pre-construction planning

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Very Important	58	77	16	67	74	75
Important	12	16	6	25	18	18
Not Very Important	0	0	0	0	0	0
Not Important	0	0	0	0	0	0
No Answer	5	7	2	8	7	7
Total	75	100	24	100	*99	100

Table 56 - Are many women employed at Erco plant?

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Yes	39	52	9	38	48	48
No	16	21	6	25	22	22
Don't Know	14	19	6	25	20	20
No Answer	6	8	3	13	9	9
Total	75	100	24	*101	99	*99

Table 57 - Number of women employed at Erco

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
1 - 5	2	5	0	0	2	4
6 - 10	7	18	0	0	7	15
11 - 15	8	21	4	44	12	25
16 & Over	5	13	1	11	6	13
Don't Know	17	44	4	44	21	44
Total	39	*101	9	*99	48	*101

Table 58 - Should there be more women employed at the plant?

	Long Harbour		Mt. Arl. Hgts.		Total	
	No.	%	No.	%	No.	%
Yes	51	68	14	58	65	66
No	15	20	2	8	17	17
Don't Know	6	8	4	17	10	10
No Answer	3	4	4	17	7	7
Total	75	100	24	100	99	100

Table 59 - Expectations and effects of plant concerning pollution -- Long Harbour

	Expected		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	30	100	18	60	11	37	1	3
Water Pollution	15	100	9	60	5	33	1	7
Noise	26	100	16	62	10	38	0	0
Other Types of Pollution	6	100	6	100	0	0	0	0

Table 60 - Expectations and effects of plant concerning pollution -- Long Harbour

	Didn't Expect		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	29	100	29	100	0	0	0	0
Water Pollution	41	100	30	73	6	15	5	12
Noise	27	100	19	70	8	30	0	0
Other Types of Pollution	50	100	22	44	27	54	1	2

Table 61 - Expectations and effects of plant concerning pollution -- Long Harbour

	No Resp. to whether or not Expecting It		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	12	100	10	83	2	17	0	0
Water Pollution	14	100	8	57	5	36	1	7
Noise	18	100	9	50	9	50	0	0
Other Types of Pollution	11	100	6	55	5	45	0	0

Table 62 - Expectations and effects of plant concerning pollution -- Mount Arlington Heights

	Expected		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	3	100	1	33	2	67	0	0
Water Pollution	0	100	0	0	0	0	0	0
Noise	3	100	1	33	2	67	0	0
Other Types of Pollution	2	100	2	100	0	0	0	0

Table 63 - Expectations and effects of plant concerning pollution -- Mount Arlington Heights

	Didn't Expect		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	12	100	6	50	6	50	0	0
Water Pollution	11	100	7	64	1	9	3	27
Noise	10	100	5	50	5	50	0	0
Other Types of Pollution	12	100	6	50	5	42	1	8

Table 64 - Expectations and effects of plant concerning pollution -- Mount Arlington Heights

	No Resp. to whether or not Expecting It		Happened		Didn't Happen		Don't Know	
	No.	%	No.	%	No.	%	No.	%
Dust	8	100	3	38	5	63	0	0
Water Pollution	9	100	7	78	2	22	0	0
Noise	10	100	3	30	7	70	0	0
Other Types of Pollution	8	100	5	63	3	38	0	0

Table 65 - If no (Table 46) in what ways are they not controlling pollution?

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Much more they can do	7	33	1	50	8	35
Reduce Dust	5	24	0	0	5	22
Reduce Smell	2	10	0	0	2	9
Reduce Slag in Harbour	1	5	0	0	1	4
Reduce Smoke at Night	1	5	0	0	1	4
Not Controlling Explosions	1	5	0	0	1	4
Things have generally gotten worse	2	10	0	0	2	9
Have not noticed anything	2	10	1	50	3	13
Total	21	*102	2	*100	23	100

Table 66 - If other types of pollution occurred (Table 43), please specify?

	Long Harbour No.	%	Mt. Arl. Hgts. No.	%	Total No.	%
Smell	10	22	7	41	17	27
Damaged Foliage	8	18	2	12	10	16
Moss	5	11	3	18	8	13
Herring Died	3	7	0	0	3	5
Can't swim in harbour	0	0	1	6	1	2
Smoke	1	2	3	18	4	6
Unidentified Types	4	9	1	6	5	8
Fluoride	5	11	0	0	5	8
Air Pollution	5	11	0	0	5	8
Eyesore	1	2	0	0	1	2
Rats	1	2	0	0	1	2
Discoloration of House Paint	1	2	0	0	1	2
Ferro Blasts	1	2	0	0	1	2
Total	45	*99	17	*101	62	101

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