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Social and Economic Consequences of the Dickey-Lincoln School Hydro-Electric Power Development on the Upper St. John Valley, Maine - - : Phase 1, Preconstruction

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SOCIAL AND ECONOMIC CONSEQUENCES OF THE
DICKY-LINCOLN SCHOOL HYDRO-ELECTRIC
POWER DEVELOPMENT ON THE UPPER ST.
JOHN VALLEY, MAINE..PHASE I,
PRECONSTRUCTION

Louis A. Ploch and Nelson L. LeRay
March 1968



Social and Economic Consequences of the Dickey-Lincoln School Hydro-electric Power Development on the Upper St. John Valley, Maine -- Phase I, Preconstruction

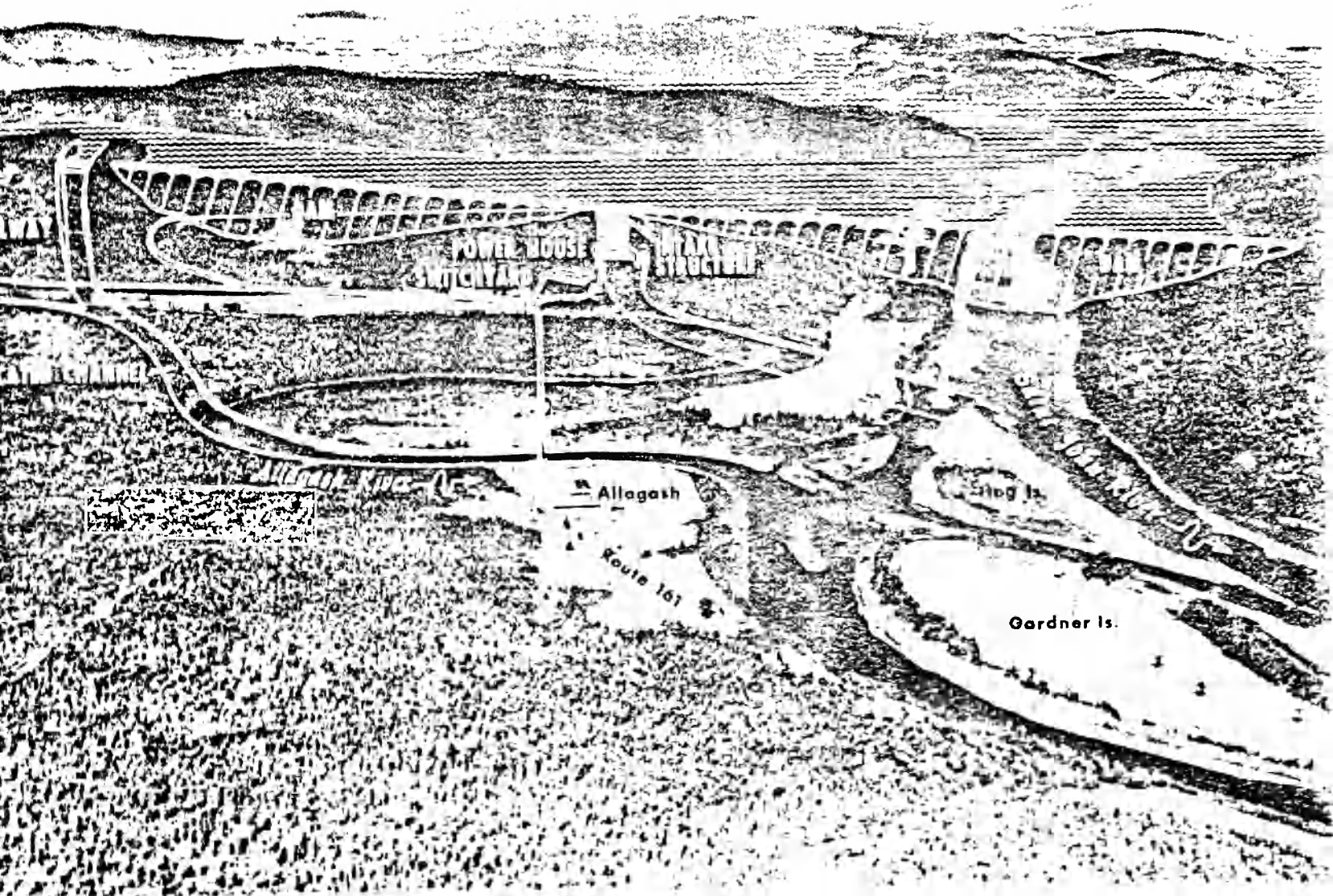
Louis A. Ploch and Nelson L. LeRay

MISCELLANEOUS REPORT 123
OF THE MAINE AGRICULTURAL
EXPERIMENT STATION
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Social and Economic Consequences of the Dickey-Lincoln School
Hydro-electric Power Development on the Upper St. John Valley.
Maine--Phase I, Preconstruction

by

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Department of Agricultural and Resource Economics
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in cooperation with

Economic Development Division
Economic Research Service
United States Department of Agriculture

PREFACE

It is a sociological maxim that when any significant development takes place within a community other aspects of the system will be affected. This is especially true of developments which involve the creation of new occupational opportunities and which attract new population. This report presents the "before" picture of a five town area in the Upper St. John Valley, Aroostook County, Maine, which it is assumed will be affected by the proposed construction of the Dickey-Lincoln School hydroelectric project. A statistical supplement is being separately published.¹

The intention of this report is to present a still picture of the selected area as of the summer of 1966. The emphasis is on empirical relationships. The data contained herein will provide a base for subsequent analysis. Thus little attempt is made to cast the findings of the study in a theoretical framework. Later publications will utilize relevant theory and research to analyze the social and economic changes in an area related to the building of the Dickey and Lincoln School Dams. It is presumed that this particular report and its statistical supplement will be of particular interest to decision makers at the local, state and national levels who have expressed a desire for more information about the area in order to provide them with a better basis for making decisions associated with the Dickey-Lincoln School project.

At the time of the 1966 study, initial construction work on the project was scheduled to begin in either the fall of 1967 or the spring of 1968. At present (March, 1968) there has been a delay in Congressional appropriations and it is not known when, or if, the dams will be built. For purposes of presentation, this report presumes that the dams will be built. Present research plans call for at least two additional studies. One will be made some three years after the construction project begins -- approximately midway in the building period. A third study will be made two or three years after completion of the proposed seven-year project.

This study, a joint undertaking of the Department of Agricultural and Resource Economics, Maine Agricultural Experiment Station and the Economic Development Division, Economic Research Service, U. S. Department of Agriculture, is being conducted under Northeast Regional Project NE-47, Social and Economic Consequences of Changes in Employment Upon Selected Northeastern Communities.

The authors are indebted to Dr Homer Metzger, Head, Department of Agricultural and Resource Economics, Maine Agricultural Experiment Station and Dr Melvin R. Janssen, Field Research Coordinator, Economic Development Division, ERS, for their support and assistance in organizing and conducting this study. Special appreciation is extended to the people of Allagash, Eagle Lake, Fort Kent, Saint John, and Saint Francis, Maine, who furnished the data which made this report possible.

¹A statistical supplement, Social and Economic Consequences of the Dickey-Lincoln School Hydroelectric Project on the Upper St. John Valley, Maine -- Phase I, Preconstruction. Supplement to Maine Agricultural Experiment Station Miscellaneous Report 123, March 1968.

Appreciation is also accorded to the secretarial staff of the Department of Agricultural and Resource Economics, and especially to Mrs Jean Boucher, Mrs. Janet Haldeman, Mrs. Nancy Kealiher and Miss Devon Young.

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INTRODUCTION

The research focus of this study can be stated in the question, What happens to a relatively culturally and physically isolated rural, resource-oriented area, and to its people, when it becomes the site of a publically financed project which temporarily increases the population by many hundreds of persons?¹ The Upper St. John Valley of Maine has been designated to become such an area. (see Map, p. 5)²

For many years numerous plans (some of them based on private financing, some on public financing, others on a combination of the two sources of investment) were developed to harness the hydroelectric potential of the Upper St. John River. None ever survived beyond the drawing board stage. In 1965 Congress appropriated \$1,100,000 for planning studies preliminary to the proposed construction of the 200 million dollar plus Dickey-Lincoln School hydroelectric project on the Upper St. John. Subsequent planning funds were appropriated in 1966.

Two dams are to be constructed. One, which will be 340 feet high and 9200 feet long, will be known as the Dickey Dam from its location in the Dickey neighborhood of Allagash Plantation.³ A 90,000 square acre lake will be created by the water impoundment. A smaller control dam will be constructed some 9 miles downstream in St. Francis. It will be known as the Lincoln School Dam because of its location adjacent to the former one-room Lincoln School. The Dickey Dam will be the sixth largest in the U. S. The lake created by it will be the seventh largest man-made body of water in the U. S.

The present report is based primarily on household interviews conducted during June-July 1966, and supplemented by observational data obtained by the authors. A second study is projected for the middle dam building period, approximately 1972. A third study will be made some two or three years after the completion of the project. Methodological details are presented in a following section.

¹This study is a contribution to Northeast Regional Project, NE-47. Social and Economic Consequences of Changes in Employment on Selected Northeastern Communities. In addition to Maine, states with contributing projects are: New Hampshire, Vermont, Connecticut, Rhode Island, New Jersey, Delaware, Pennsylvania and West Virginia.

²For this study, "The Upper St. John Valley" is designated as the plantations and towns along the St. John River in Aroostook County, Maine, east from Allagash to Ft. Kent and south from Ft. Kent to Eagle Lake. The empirical data for Ft. Kent pertain only to the rural portions of the town west of the Fish River.

³The term plantation is used in Maine to designate a corporate entity which is not quite so completely organized as is a town. The two forms are similar enough so that in this report "town" will be used to include plantations.

The Valley and Its People

The Upper St. John Valley as defined for this study is located in extreme northern Maine along the St. John River. The entire St. John Valley, except for Allagash Plantation, is populated almost exclusively by persons of French - Canadian cultural heritage.¹ Except for Allagash, the influence of the local Catholic church and the associated predominance of French as the spoken language tends to set the style of life for most every resident.

The Knights of Columbus and the Catholic Order of Foresters are important social organizations. Families are large, the average age is low, outmigration of young people has become institutionalized, and educational attainment is low.² Occupations are largely related to woods work and farming. Wages are generally relatively low and although many families have more than one wage earner, family incomes in the St. John Valley are among the lowest in the state. Contributing to the low incomes is the short duration, casual labor nature of many jobs. As a result the economy is weak. As of July, 1967, northern Aroostook County was one of just two areas in Maine declared eligible for assistance under the Federal Economic Development Act.³

Based at least in part on their cultural heritage, the people of the French-Canadian oriented towns generally exhibit a Gallic exuberance and love of life. Social events are held frequently. Wedding celebrations are large, long and lavish. However, probably in part because of the continuation of low incomes and the high rate of outmigration, a pessimism has developed in the business community. The possibility of a multi-million dollar federal project and its attendant influx of many hundreds of workers and their families has created a ray of hope for the future.

Except for the people of Allagash who mainly have a Scotch-Irish, Protestant heritage and who reflect many Appalachian-like characteristics, the magic phrase in the Upper St. John Valley has become "Dickey-Lincoln."⁴

¹In Allagash, approximately 13 percent of the heads of households have French surnames. St. Francis, with approximately 83 percent, has the lowest proportion of household heads with French surnames or anglicized versions of French names among the four French oriented towns included in the study.

²Specific documentation for these statements is contained in following sections.

³Data from Maine Office of Economic Opportunity, July, 1967.

⁴Many of the conclusions drawn by Jack Weller in Yesterday's People, An Interpretation of Appalachian Mountain Life, are applicable to Allagash.

When it became known in 1965 that Congress had approved a substantial planning grant for the dams, which was taken as an indication that the full project would be subsequently funded, there was literally dancing in the streets of the French-Canadian dominated communities. Whistles blew and fire engines raced about the towns. In Ft. Kent a Lincoln-Dickey cocktail was concocted. In reflecting this aura of hope for the future, hinged on the prospective building of the dams, several merchants informed the researchers that "unless the dams are built, there is no future."

Contrastingly, enthusiasm for the dams is considerably less in Allagash, the only town in the Valley, except for a small section of St. Francis, which will be directly physically affected by the project. At the time of this writing it is not known exactly how many family dwellings and public facilities in Allagash will need to be razed, or relocated because of the building of the dam. Local estimates are that from 50 percent to 85 percent of all dwellings will need to be removed. If the latter figure is somewhere near correct, most public facilities will also be affected.

Despite this situation, there has been relatively little public concern in Allagash. The few public meetings which have been held for the purpose of discussing the future of the town have been poorly attended. A discussion of some of the possible reasons for this situation and some possible consequences deriving from it will be presented below.

Occupation and Migration

Despite the fact that the wages received by pulp cutters and other woods workers are relatively high for the area, the physical hardships associated with this type of work -- severe weather, insects, safety hazards -- tend to outweigh the remunerative aspects. Perhaps even more important, although it is difficult to document, is the apparent attitude of many young people that working in the woods is socially unrewarding. Thus, although opportunities for woods related employment exist, young males tend to migrate, particularly to southern New England for industrial employment.

Although the specific factors differ somewhat from those pertaining to the woods related occupations the changes in agriculture, potato farming in particular, have also contributed to the high rate of outmigration from the Upper St. John Valley. Farms have decreased in number due to such factors as fluctuating potato prices, the inability of the small farmer to compete with larger mechanized operations, and the lack of viability of general type farms, a type of operation which existed in the less agriculturally favorable areas. While mechanization of the larger farms has eliminated many farm labor jobs in the area, more exist than can be filled. The men of the area increasingly prefer the better paid, fulltime, and more prestigious jobs which are available elsewhere.

Thus, since 1940 every town in the Valley has experienced net out-migration. This has also been true of all other towns in Aroostook County.¹ Females have joined the males in the stream of migration, if for different reasons. Being a resource based area there are very few employment opportunities for females. To date the processing operations associated with agriculture in Aroostook County have not located in the Upper St. John Valley. Neither has there been an influx of the other female employing industries, primarily shoe manufacture, which are expanding into other parts of Aroostook County.

The Upper St. John Valley is thus quite accurately described as a static if not declining area. Through informal interviewing during the early stages of the present study the researchers were impressed with the basic pessimism of most of the business people in the area. As stated above, except for Allagash the prevailing sentiment appears to be that unless the Dickey-Lincoln project comes to full fruition, the area is economically doomed.

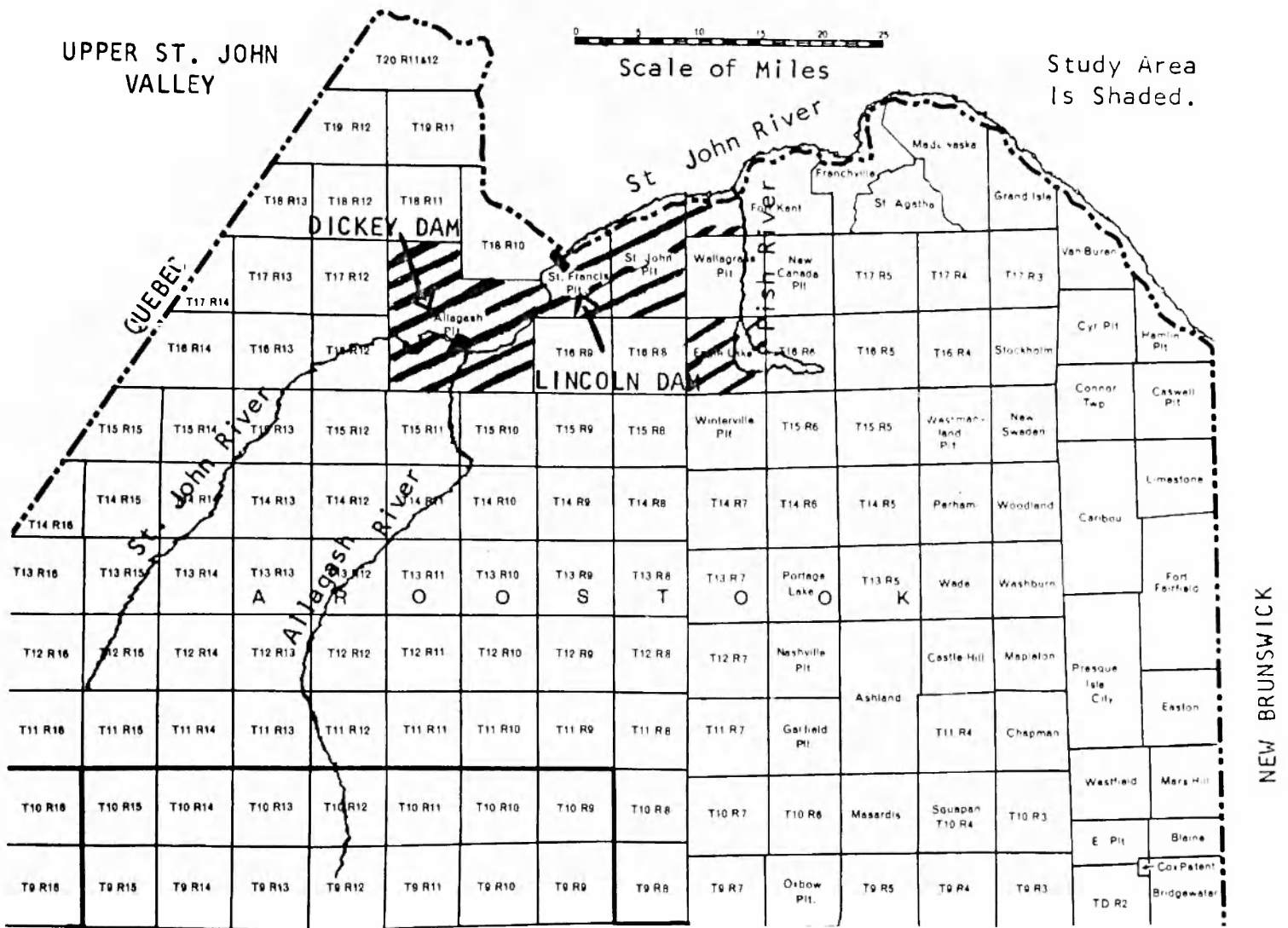
In Allagash there is a prevailing sentiment that there are no longer many opportunities in woods work, and what few exist will be greatly diminished if the dams are built. Some 30,000 acres of forest land will need to be cleared for dam construction and the consequent water impoundments.

Methodology

It is recognized that the effects of building the Dickey and Lincoln School Dams will have both local and area repercussions. For the purposes of this study it was decided both for reasons of research methodology and economy to focus on the possible effects of the families and their individual members in the four rural communities (towns or plantations) of Allagash, St. Francis, St. John and Eagle Lake. In addition, rural households west of the Fish River in Ft. Kent were included, (see map) Ft. Kent serves as the trade and service area for the Upper St. John Valley as defined for this study.

¹Maine Health Facilities Planning Council, Report of Needs For Health Facilities in Northern Aroostook County. February, 1967. (Mimeo) The population changes for the study area since 1940 are:

<u>Town</u>	<u>Year</u>		
	<u>1940</u>	<u>1950</u>	<u>1960</u>
Allagash	644	680	557
Eagle Lake	1,891	1,516	1,138
Fort Kent	5,363	5,343	4,761
St. Francis	1,489	1,384	1,058
St. John	628	569	407



Household interviewing for the present study was conducted during June-July 1966. At the time of planning for the field work it was understood that construction of the dams would begin in September 1967. At the present writing (March 1968) it is unlikely that the project would begin before early 1969.

An attempt was made to contact each household in the designated area. A responsible adult, the household head if possible, was selected as respondent. At least two call-backs were made at each home if an interview could not be obtained on initial contact. Inability to contact potential respondents because of refusal, illness, employment and other factors resulted in a rate of response of better than 90 percent of the eligible households. The refusal rate was approximately four percent.

For each household demographic, ecological and occupational data were obtained for each family member. In addition for all households in Allagash and for approximately one-half the households in each other locality, additional data were secured.¹ From these latter households, demographic, ecological, and occupational data were obtained for family members no longer living at home. Additionally in the longer interviews data on the organizational and community participation of the household head and spouse were recorded. The respondents were also asked their opinions concerning a number of community relationships and the ways in which they perceived that the building of the dams would affect the area. Data on the material level of living of the family were also collected. The well-known Srole "anomie" questions were also asked of the respondents.²

Prior to the interviewing period the schedules were pretested and minor changes were made. Originally it was planned to have both French and English versions of the schedules. As a result of practice interviews which were conducted during the training period in a French speaking section of the St. John Valley outside of the study area it was decided that this was not necessary. However, at the discretion of the interviewers, all of whom were male, college educated, bi-lingual residents of the St. John Valley, interviews were conducted in French when this seemed advisable. All recording was in English.

Research Focus

This study is one of the contributing projects to the Northeast Regional Project NE-47, Social and Economic Consequences of Changes in Employment Opportunities and Sources in Selected Northeastern Communities. As such its major focus is an analysis and interpretation of what happens to a community and its individuals when there is a marked shift in employment opportunities. The present study was designed primarily as a base line analysis of the individuals and families living in the five previously mentioned towns (plantations) in the Upper St. John Valley. Certain community aspects will also be considered in this report.

The second and third field studies will include analyses of the effects of the building project directly upon individuals and families as well as upon communities.

¹The selection of which households would be administered the full schedule and which would be interviewed by using the shortened schedule was determined randomly by town. Each household was spotted on a map, assigned an identification number and then designated as a "long" or "short" interview by use of random numbers. A total of 643 households were administered the short interview; 358 of the same households were administered the long form.

²The data pertaining to the Srole Scale questions will be reported in a separate publication.

Without question, the building of the Dickey and Lincoln School dams will have great consequences for the residents of the Upper St. John Valley. In an area where other than forest or agriculturally based jobs have been quite few, literally hundreds of job opportunities will become available. Preliminary plans for the project call for a total of 12,000 man years of labor during the estimated seven-year building period. During the peak period, about half way through construction, 2600 man years of labor will be employed. Thus, it is assumed by local residents that almost anyone who wants a job will be able to obtain one.

Residents also assume that the wages to be paid will be considerably higher than those paid for most of the presently available jobs. It is also recognized locally that a relatively great number of workers from outside of the area will be attracted to the Valley. Many families hope that some of their members who have left the Valley in pursuit of occupational opportunities will return.

It is presently thought that most of the impact from the influx of worker-in-migrants and their families will be a relatively temporary phenomena. After the peak of construction employment, the number of jobs will decrease to approximately 600 during the seventh and final year of construction. It is estimated that just 25 or 30 persons will be employed regularly in the operation and maintenance of the dams. Thus, if increased employment opportunities were to be related only to the building of the dams, the prime effects on the involved communities and individuals would be fairly well confined to a specific time period. It was more or less on this assumption that the three-stage research project, of which the present study is phase one, was designed.

It is recognized, however, that although it is doubtful that the Upper St. John Valley will industrialize or vastly change its social economy as a result of the construction of the dams, they will have a long-run influence upon the area. The 340-foot high Dickey Dam may well become a major tourist attraction. The 90,000 acre lake to be formed by the backing up of the St. John River and its tributaries will have a very irregular shore line. Thus, a great number of potential cottage and camp sites will be created. It should be noted, however, that most of the land abutting the lake is presently owned by several large wood using industries and land holding companies. The decision to develop the land will lie with the companies. The probable extension of Interstate 95 from the southern boundary of Maine to its northern boundary at Ft. Kent will decrease the physical isolation of the area, enabling tourists to make the trip with relative speed and ease. The recent creation of a state wilderness waterway along the famed Allagash River with its northern terminus in Allagash Plantation should also attract some tourists to the area.

As cited above, phase one of the project is essentially a base-line or inventory study of the present residents of four rural towns or plantations, and the rural residents of a section of a fifth town. These towns comprise the area most likely to be affected by the construction of the Dickey and Lincoln School Dams. In so far as practical, the methodology employed in Phase I will be replicated in Phase II during the construction period. In Phase III attempts will be made to determine more fully the impact which the building of the dams will have had on the Upper St. John Valley and its residents.

The basic theoretical assumption of the study is that a major shift in the magnitude and type of employment opportunities available to residents of an area will profoundly affect the social organization of involved communities as well as the lives of individual citizens and families. The three-stage design of the overall study will permit testing of this assumption over time. Data collected during the 1966 base line study and in the two proposed studies will permit the testing of the following assumptions:

a. The rate of outmigration from the Upper St. John Valley will decrease during the dam building period.

b. A substantial proportion of former outmigrants will return.

The returning in-migrants will be mainly those who left the area in recent years and those who left many years previously

c. Allowing for the effect of the lowered rates of birth which are being established as a facet of U. S. culture, the average age of the population of the towns included in the study will decrease.

d. The occupational composition of the area will be less resource-based and more oriented to the construction and service fields, particularly recreation. Woods labor and farm labor will become more scarce, thus contributing to an increased rate of mechanization in these industries.

If the area urbanizes and industrializes, the proportion of women gainfully employed will increase.

e. Those towns (plantations) with primarily French-Canadian derived populations will lose a considerable amount of their French identifications.

English will be more fully substituted for French.

The Roman Catholic Churches will become more Anglicized (in addition to those changes related to the Ecumenical Councils)

f. Protestant churches will increase in number, in size of congregations, and in importance as community cultural forces.

g. The social organizations associated with the Roman Catholic Churches will have less total community significance than in the past.

h. During the seven-year dam building period the rate of out-migration will decrease, but when young Valley residents do leave, their pattern of migration will be more geographically dispersed than formerly

i. The rate of marriage for local persons with non St. John Valley residents will increase, especially for females.

j. Commercialized recreation will become more plentiful, diverse and popular

- k. Trade and service activities will increase in number and scope. While there will be a revival of commercial services in some of the smaller communities, a pattern of shopping for major items and specialized services outside one's own immediate community or the upper St. John Valley will be increased.
- l Residents of the Upper St. John Valley will increase their interest in local government, including office holding, concurrent with a developed interest in local government by the in-migrants.
- m. Neighborhoods and other informal, highly localistic residential groups will become less important as the town (plantation) unit takes on more of the characteristics of a functional community.
- n. During the early and later periods of the dam construction there will develop a generalized friction in regard to the employment of non-United States citizens. There will be specific incidents which accentuate the general problem of harmony
- o. The level of living of permanent residents as measured by the possession of material household items will increase substantially during the construction period.
- p. There will be a temporary increase then a decrease in the rate of school dropouts.
- q. Dependence upon income from public sources (town, ADC, etc.) will decrease in both absolute and relative terms.
- r The proportion of adults agreeing to (exhibiting "normlessness") the Srole "anomie" questions will decrease during the period from the first to third field study.
- s. Urban forms of association and social control will replace rural cultural ways at an accelerated rate.

Formal land use planning will become dominant in many of the towns of the St. John Valley.

Local governments will provide more urban type services, particularly more extensive protective services.

DEMOGRAPHIC CHARACTERISTICS¹

The characteristics of individuals and households in an area influence to a large degree the problems of, and the opportunity for, human and physical resource adjustment in the area. Household size, educational attainment, occupational characteristics, and age composition of the population, for example, may facilitate or impede adjustment. Adjustment might be relatively easy in an area characterized by small families and a young population which is well educated and has wide occupational experience. In an area characterized by large families but an older population with low educational attainment and few occupational skills adjustment would be relatively difficult to attain. The demographic characteristics of the households included in this study more closely resemble the second situation than the first.

In this section, general demographic characteristics for households and individuals will be examined; these include household size, income, age, education, mobility and occupation.

Household Characteristics (1 1)

Household Size

Households in the Upper St. John Valley are slightly above the average size of families in Maine - 4.3 - as compared with 3.7 persons for the State.² Households studied ranged from one to 17 individuals.

As indicated below, households in Eagle Lake tended to be somewhat smaller while those in Fort Kent were somewhat larger than other households in the area.

¹Analysis of data for the remainder of this report is divided into nine major sections. Each major section contains two or more sub-sections with a summary and/or text table. For most of these tables the independent variable is town -- Allagash, Eagle Lake, Fort Kent, Saint John and Saint Francis. Statements in the text are based upon summary tables in the text and upon tables in the Statistical Supplement. Sections and sub-sections in the text are followed by notations, i.e., Household Size.

²Unless otherwise indicated, State of Maine figures in the Demographic Characteristics section of this report are from U. S. Census of Population: 1960, Maine, Final Report PC (1) - 21 A, B, C, AND D.

<u>Town (Plantation)</u>	<u>Household Size</u> (persons)
St. John .	4.4
St. Francis	4.2
Fort Kent	4.8
Allagash	4.6
Eagle Lake	4.0
Upper St. John Valley	4.3

While many factors no doubt contribute to these differences a major factor would appear to be the relatively high proportion of households in Eagle Lake with one and two household members (35 percent) compared with Fort Kent (10 percent) and the relatively small proportion of Eagle Lake households with nine or more members (6 percent) compared with Fort Kent (10 percent)

Age Distribution (1.2)

The age structure of a population is an indication of past adjustments and the potential for adjustment in human resource use. Years of out-migration have left their mark on the population distribution of the St. John Valley ¹. A relatively high proportion (39.9 percent) of the 2,776 individuals living in the 643 households studied were under 14 years of age at the time of the 1966 survey. The comparable figure for Maine in 1960 was 29.5 percent. These individuals, at present, are dependent upon their family and community for food, clothing, schooling and other goods and services. They provide a large potential labor pool which could be drawn upon during construction of the St. John River Hydroelectric Power Development. Many of these young people will be entering the labor force before the 1975 estimated completion date for the project. The manpower potential afforded by the high proportion of young people in the population would be largely depleted if the present patterns of out-migration in the area continue. For example in 1960 for the five-town area, 24.2 percent of the population was aged 5-14; 14.5 percent was aged 15-24.

The proportion of population 65 years of age or over (9.2 percent) and 50-64 years of age (12.5 percent) indicate that many people in the area are not now in the labor force and a large proportion will soon be leaving it.

Length of Residence (1.3)

The mobility pattern of heads of St. John Valley households is one of general stability. Only one-fourth (25.7 percent) of the heads of households had lived in their present home less than five years; almost two-thirds (63.8 percent) had lived in the same town all their lives with the exception of short periods (less than five years) away from "home" for military service or for other reasons. Of the 219 heads of households who had lived outside the area, a relatively high proportion (13.7 percent) had lived in Canada.

¹This topic is discussed in more detail in "Children Who Have Left" p. 36.

The high proportion with former residence in Canada is accounted for by the proximity of the area to the international border; changes in employment opportunities in the U. S. and Canada; and family and community ties between individuals in the two countries.

Numerous factors help explain the general residential stability of the population as evidenced by mobility patterns of the heads of households. First, although there has been, as was pointed out above, a high rate of outmigration, individuals who leave tend not to return. Secondly, there are few local employers who need to recruit employees from outside of the area. Thirdly, individuals from outside the Upper St. John Valley do not seek or are unable to obtain employment locally. Fourthly, the area has not been attractive to retired persons from other areas or to former residents who have retired.

Although the overall picture is one of general stability, variations exist between towns. For example, St. John had the smallest proportion of heads of households who had lived in the town of residence all of their lives while Allagash and St. Francis had the highest proportion.

<u>Town</u>	<u>Household Heads Who Had Lived All Their Life in Present --</u>	
	<u>Town</u> (percent)	<u>House</u> (percent)
St. John	44.9	6.4
St. Francis	76.6	6.3
Fort Kent	59.8	4.7
Allagash	75.0	7.1
Eagle Lake	<u>55.7</u>	<u>4.7</u>
Upper St. John Valley	63.8	5.6

The residential stability illustrated by the above data probably has a number of significances for community adaptation to the social and economic changes which will accompany the building of the dams. For example, there is evidence obtained during the observational phase of the present study that many of the people in Allagash who will be forced to move because of the project are reluctant to plan ahead for this eventuality. They find it difficult to accept the fact that they will have to relocate. Secondly the high rate of stability contributes to cultural reinforcement. Some of the local folkways (such as a history of changing jobs frequently and being underemployed) could present problems to an efficiency orientation on the part of the management of the construction firms working on the project.

Major Activity and Occupation (1.4)

Occupational experience and training of a population influences, to a large degree, the ability of the population to adjust to changing opportunities for employment. Knowledge about the major activity of individuals sheds considerable light on the present utilization of the human resources and the magnitude of the adjustment problems.

As is shown below, unemployment of heads of households was negligible, but 8.6 percent of the household heads were unable to work, and 22.6 percent were retired. Thus, almost one-third of the heads of households were not in the labor force because they were either retired or unable to work.¹

One in five individuals were primarily dependent upon the woods industry for employment and more than one in three individuals depended upon nonfarm sources for work.

<u>Major Activity During 1965 Head of Household</u>	<u>Number</u>	<u>Percent</u>
Operate Farm	23	3.6
Farm Work	11	1.7
Woods Work	134	20.7
Other Nonfarm Work	245	38.0
Unemployed	1	0.2
Unable to Work	55	8.6
Military Service	3	0.5
Going to School	1	0.2
Keeping House	24	3.7
Retired	145	22.6
Other	1	.2
Total	<u>643</u>	<u>100.0</u>

¹The socio-economic characteristics of the head of households will be the subject of a more detailed presentation. However, the major activity of the head of households is presented at this point as background for the overall topic of occupations. Of those persons who were "retired", very few were retired in a formal sense. Most were simply beyond the age which they could find or wanted regular employment.

The occupational classification of the principle nonfarm job, excluding woods work, held during 1965 by individuals ten years of age and over was:

<u>Occupational Classification</u>	<u>Number</u>	<u>Percent</u>
Professional, Technical and Kindred Workers.	42	7.9
Managers, Officials, and Proprietors.	93	17.4
Clerical and Kindred Workers.	39	7.3
Sales Workers.	17	3.2
Craftsmen, Foremen, and Kindred Workers.	102	19.2
Operatives and Kindred Workers.	146	27.4
Private Household Workers.	5	.9
Service Workers.	47	8.8
Laborers Except Farm, Woods and Mine.	<u>42</u>	<u>7.9</u>
	533 ¹	100.0

The small number of professional, technical, and kindred workers has important implications -- the area has relatively few individuals with professional and technical skills to serve the present population and there might be difficulty in serving the increased populations if the dams are constructed, unless individuals with professional and technical training came to the area during the construction phase of the project.

Of the 42 professional, technical and kindred workers surveyed, only 23 lived in the area that would be most directly affected by the dams; the remainder resided in Eagle Lake, the most distant town from the dam sites.

<u>Town</u>	<u>Professional, Technical and Kindred Workers</u> (number)
St. John .	4
St. Francis	9
Fort Kent	5
Allagash	5
Eagle Lake	<u>19</u>
Upper St. John Valley	52

¹Data not available for eight cases.

Educational Achievement (1.5)

Low levels of educational attainment in an area are frequently associated with high rates of out-migration -- especially of youth. For the most part, individuals 25 years of age or over have completed their formal education. In the study area, four out of ten individuals 25 years of age and over had not gone beyond the 7th grade and more than two out of three had not gone beyond the 8th grade, compared with approximately one in three for the State of Maine.

<u>Educational Attainment</u>	<u>Percent</u>
7th grade or less.	41.1
8th grade... ..	28.5
9th - 11th grades. ...	12.9
12th grade.	9.7
One or more years of college..	7.8
Total Percent	100.0
Total Number	1211

Household Income (1.6)

This section deals with data that go to the core of the human and physical resource use adjustment problem -- household income. Household income, to a large degree, determines the accessibility which a family has to goods and services. In a more agricultural area, it is frequently argued that farm perquisites contribute to farm family level of living. However, in response to the question, "Do you consider this place a farm?", only 45 respondents or 7 percent replied, "yes".

As might be anticipated from the previous data on major activity, occupation, and educational attainment of the population, household incomes in the area are relatively low. Of the 353 survey households for which household income data for 1965 was available, 152 or approximately four in ten (43.0 percent) reported incomes under \$3,000.¹

However, the survey towns varied with respect to the proportion of low-income households, with Allagash having the highest and Fort Kent the lowest.

¹In 1960, only 19.2 percent of the families in Maine had incomes under \$3,000.

<u>Town</u>	<u>Households With Incomes Under \$3,000 (percent)</u>
St. John.	41.7
St. Francis... ..	46.5
Fort Kent.... .	36.0
Allagash. .. .	48.8
Eagle Lake.. ..	<u>37.8</u>
Upper St. John Valley. ...	Percent 43.0
	Number 152

Only 11 of the 353 survey households reported incomes over \$10,500 in 1965.

Income from property and transfer and deferred payments supplemented household income from other sources. Of the 358 households, 187 or 52 percent reported receiving income from non-private, primarily public income sources, or 1.5 such sources per household.¹ Only 22 households reported receiving income from private sources such as rent, royalties, or recreational use of land.

Head of Household (1.7)

The ability of a family to make adjustments -- to take advantage of new employment opportunities -- is, to a considerable degree, dependent upon the head of the household.

Females were reported as heads of 72 (11.2 percent) of the 643 households studied. With the exception of Fort Kent, with only four percent of the households headed by a female, significant differences did not exist among the towns surveyed.

One-fourth of the heads of households were under 40 years of age. This group, in general, would be in the most favorable position to make human resource use adjustments. Of the towns studied, Fort Kent is in the most favorable position with respect to age of head of household.

<u>Town</u>	<u>Age of Head of Household (years)</u>					
	<u>Under 40</u>		<u>40-64</u>		<u>65 and over</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
St. John... ..	12	15.4	43	55.1	23	29.5
St. Francis.	48	25.0	94	49.0	50	26.0
Fort Kent..	43	44.3	38	39.2	16	16.5
Allagash... ..	25	29.8	38	45.2	21	25.0
Eagle Lake.	<u>43</u>	<u>22.4</u>	<u>99</u>	<u>51.6</u>	<u>50</u>	<u>26.0</u>
Upper St. John Val	171	26.6	312	48.5	160	24.9

¹Included are Social Security, Workmen's Compensation, Veteran's Payments, other retirement, disability or pensions, unemployment insurance, and aid to dependent children.

It is generally recognized that individuals who have not gone beyond the eighth grade in school are severely limited in their opportunities to remain in the labor force, to change jobs, or to obtain better paying jobs. The low educational attainment of heads of households in the area imposes a serious limitation on the adjustment of potential of households. Seven in ten household heads had not gone beyond the 8th grade.

<u>Town</u>	Heads of Households with 8 Or Less Years of Education	
	(Number)	(Percent)
St. John.. ..	60	76.9
St. Francis... ..	132	68.7
Fort Kent. ..	63	64.9
Allagash.	53	63.1
Eagle Lake... ..	142	74.0
Upper St. John Valley	<u>450</u>	<u>70.0</u>

Thus, in terms of the age and educational characteristics enumerated above, it would appear that many heads of households do not possess characteristics that would enhance their employment opportunities on the Upper St. John Hydroelectric Project or any other type of employment, with the exception of relatively unskilled, low-paying jobs.

COMMUNITY INVOLVEMENT (2)

Church (2.1)

The organized church is a major influence in the Upper St. John Valley. Except for Allagash, the dominant architectural feature in each of the towns included in the study is the Roman Catholic church. These churches, except for Fort Kent, are 50 or more years old, but they are kept in good repair; they have been modernized with good heating and lighting systems.

Although organized religion apparently has less direct influence in the lives of Valley people at present than formerly, it is still important as both a spiritual and a social force. The local priests continue to be highly regarded. Their advice is sought and their influence is felt in practically all matters of community concern. Organizations having a relationship to membership in a Catholic church such as the Catholic Order of Foresters and the Knights of Columbus are among the most important social organizations in the Valley.

Church membership is practically universal among the heads of households comprising the present study. The proportion of household heads belonging to a church ranged from 92 percent in St. Francis to 98 percent in Fort Kent. The great majority of families are associated with a Roman Catholic church. In each of the Catholic churches at least one mass is said in French.

There are Protestant churches in Allagash, St. John and Fort Kent, but their combined membership is very small. Only in Allagash, where the dominant ethnic background is predominantly non-French, is the Protestant church a major factor in community life. There is a Baptist church affiliated with the Conservative Baptist Convention and a very small Pentecostal Assembly Church in Allagash. The Baptist church has a full-time resident minister. The Pentecostal Church has a part-time minister, as does the new Bible Church in St. John. Several members of the congregation take turns delivering the sermons at the small Congregational church in Fort Kent.

It is probable that when the dams are built the membership and particularly attendance at church services will greatly increase in the Valley. The Catholic Churches are physically large enough to absorb a considerable influx of new persons. Such is not the case for the Protestant churches. Although their present congregations are small and do not tax the existing facilities, their combined expansion capacity is extremely limited. Perhaps more importantly is the fact the incoming non-Catholics are likely to represent a much greater religious diversity than do the present Protestant churches. Except for the Congregational Church in Fort Kent, the Protestant churches are basically conservative both in a theological and social sense.

A great influx of in-migrants would disturb the religious status-quo. At present churches tend to serve as a source of community identification. This situation is illustrated by the fact that the proportion of household heads having church memberships who belong to a church in their town of residence ranges from 88 percent in St. John to 98 percent in Allagash.

A further discussion of the importance of organized religion in the Upper St. John Valley is contained in the section on attitudes.

Organizational Participation (2.2)

As mentioned previously, the major source of formal social participation of the heads of households included in the study is church related -- 97 percent of them belonged to a church. Of the 358 household heads for whom data relating to church membership was obtained there was only one case where a person was reported to belong to a church but did not attend. Although church membership is the most usual form of formal organizational participation, just 22 percent of the household heads belonged to church related organizations.

The majority (55 percent) of household heads did not belong to any non-church related organizations. An even larger proportion (68 percent) of the spouses of household heads did not belong to a non-church related social organization. Just ten percent of the household heads and four percent of the spouses of household heads belonged to two or more non-church related organizations.

The degree of participation in both church and non-church related organizations varies to some degree by town. For example, the proportion of household heads who belong to church related organizations varies from eight percent in Allagash to 36 percent in Fort Kent. This difference is related to the fact that the two Protestant churches in Allagash are both small and conservative in nature and that the Catholic Church is a mission of the larger St. Francis church. Although the respondents in Fort Kent all live in a rural area, they attend the large, somewhat cosmopolitan Catholic church in the urban-like area of the town.

The variation by town in terms of number of non-church related organizations to which the household head belongs was relatively slight at the "none" and "one" levels of affiliations. The major differences occur at the "two or more" levels. At this level the range was from three percent (St. John) to 16 percent (Eagle Lake)

There is considerably more variation by town in level of organizational activity of the spouses of household heads than for the household heads themselves. While the proportion of spouses of household heads who belong to no church related organizations is approximately the same (range of 70 percent to 75 percent of the total) for the towns with a French cultural background, only 56 percent of the spouses in Allagash belong to no organization other than the church. At the "one" level of affiliation the range is from three percent (St. John) to 29 percent (Allagash) At the "two or more" level of affiliation the range is from zero percent (Fort Kent) to eight percent (St. John and Allagash)

These data tend to indicate some diversity by town which would be a factor in the acceptance of new people who are expected to immigrate into the community when the dams are built. The general low level of formal organizational structure (except in the urbanized area of Fort Kent) in the towns might well be

a retarding factor in development when the immigrants arrive. It seems likely that the new residents will bring with them an experience of affiliation with a variety of organized activities which are not currently a part of lives of rural people in the Valley. It is highly likely that units of vocational, social, and fraternal organizations will be established. The lack of familiarity and experience of the local people with this type of activity might lead to a definitive barrier between them and the new residents. On the other hand, if new organizations and activities are not provided for the newcomers, a great increase in anti-social behavior might arise.

Social Participation and Education (2.3)

There is no measurable variation by educational level whether or not the household heads belonged to and participated in church. The chi square of the association between the four educational levels is 0.12. However, there is the usual relationship between educational level and participation in church related organizations.¹

<u>Years of Education Completed</u>	<u>Household Head Belongs to Church Related Organizations:</u> Yes (percent)
0-7	19
8	20
9-12	28
13 & over	33

A similar correlation exists between education for both the heads of households and their spouses and participation in non-church related organizations:

<u>Years of Education Completed</u>	<u>Number of Organizations Belonged To By:</u>			
	<u>Household Head</u>		<u>Spouse of Household Head</u>	
	<u>One</u>	<u>Two</u>	<u>One</u>	<u>Two</u>
	<u>Or More</u>		<u>Or More</u>	
	<u>(percent)</u>		<u>(percent)</u>	
0-7	22	2	13	1
8	30	11	20	2
9-12	35	19	30	11
13 or more	17	21	29	12

¹For example see R.C. Buck and L.A. Ploch, Factors Related to Changes in Social Participation in A Pennsylvania Rural Community (State College: Pa. AES Bul 582, August, 1954).

The division by education is sharpest at the break between the attainment of elementary education and some high school experience. This is particularly true for the "spouse" category, most of whom are women. It is likely that a relatively high percentage of the in-migrants will be quite young and will have attained more than an elementary education. If this proves to be the case there is likely to be more interaction between them and the present residents who have higher educational attainment. Thus an increase in formally organized social activities could result in an isolation of the lesser educated persons and an increase in social stratification in the community.

Location of Jobs (2.4)

A striking feature of the landscape as one drives through the towns of the Upper St. John Valley included in this study is the lack of obvious places of employment. Except for the commercial establishments and the high school, state college, and hospital in Fort Kent, one observes very few places of employment where more than a handful of persons would be employed.¹ The greatest exception is a wood working mill in Eagle Lake in which 43 men worked in July, 1967.

Despite this obvious lack of local sources of employment, St. John is the only one of the five towns in which substantially more than half of the employed household heads were working outside of the town of residence in 1966. St. John has no industry at all and despite its being highly rural, it is becoming, at least in a limited sense, a suburb of Ft. Kent. Excluding St. John the proportion of household heads who worked in their town of residence ranged from 46 percent in Eagle Lake to 76 percent in Allagash. As indicated in an earlier section, woods work and allied activities were a major source of employment. In most cases the woods workers' base of operations is near their home.

Because of the lack of central sources of employment in the selected towns, the modal pattern is that if a household head is not employed in his town of residence he tends to work not in an adjoining town, but somewhere else in Aroostook County. Thus, there is a bimodal pattern--either working close to home or some distance away. Additionally, few people from outside of the towns in the study (with the exception of Ft. Kent to some degree) tend to find employment in them. Thus, while local persons tend to have some "outside" job experience, a factor which could help to condition them as individuals toward greater geographical and occupational mobility. the towns themselves are somewhat insulated against the influence of out-of-community workers.

One reasonable set of conclusions from these data is that people throughout the Valley will travel to the dam sites for employment (this could mean a one-way trip of up to 75 miles) but they will continue to live in their present towns. It is likely then that the in-migrants to the construction area will be persons from a relatively great distance. This fact probably also means an influx of persons quite different in cultural backgrounds from the present residents.

When the place of employment of the employed household heads is compared to their educational attainment little consistent variation is noted. There is some tendency for the higher educated persons to be employed in Fort Kent and in larger places in Aroostook County. A sizeable proportion of these persons are school teachers or are employed in other white collar occupations. It is somewhat unlikely that this type of person will be attracted to a job at the dam sites, at least in the early stages of construction.

¹As of August 1967. there were approximately 150 employing sources (excluding farms) in the five-town area. Other than the exceptions noted above, the largest number of employees for a single source was 40 locally employed persons. The median number of employees for all employers was less than 3 persons.

CULTURAL ORIENTATION (3)

Language Spoken (3.1)

Just as a French-oriented Roman Catholic Church dominates the landscape of the towns (except for Allagash) included in this study, French predominates as the spoken language. Except for Allagash where only English is the regularly spoken language in 95 percent of the homes, French or a combination of French and English predominates as the spoken language:

<u>Town</u>	<u>Language Regularly Spoken In the Home</u>		
	<u>French</u> (percent)	<u>French-English Comb.</u> (percent)	<u>English</u> (percent)
St. John	27	51	22
St. Francis	21	61	18
Fort Kent	64	30	6
Allagash	0	5	95
Eagle Lake	41	51	8

Responses on the question of spoken language was obtained from 271 households in the four French oriented towns. In 231 (85 percent) of these households at least one person speaks French. There are 44 households in which only French is regularly spoken.

The use of French in ordinary conversation and in sermons are the only obvious manifestations of "Frenchness" in the area. Despite this fact, there is little doubt that there will be some cultural barriers between the present residents and the immigrants. While the people of Allagash have an English language heritage their natural reserve, somewhat similar to that ascribed to the people of Appalachia, would probably serve as a factor in the acculturation of newcomers.

Educational level and which language is spoken in the home are related. In general, as level of education increases the proportion of households in which English is the regularly spoken language increases:

<u>Years of Education</u> <u>Of Household Head</u>	<u>Language Regularly Spoken in Home</u>
	<u>English Only</u> (percent)
0-7	26
8	30
9-12	43
13 & over	50

In the four French-oriented towns approximately two-thirds of the households contain at least one person who can read or write in French. As would be expected these abilities are related to educational level. At the less than elementary school level of educational attainment 44 percent of the households contain at least one person who can read or write in French. At the 13 or more years of schooling level the comparable figure is 75 percent.

Both the English-language weekly, Saint John Valley Times, published in the St. John Valley town of Madawaska, and the Bangor Daily News, Aroostook County Edition, are received in approximately two-thirds of the households included in the study. Both papers and particularly the former, carry local news items.

That the St. John Valley Times tends to be perceived as being somewhat French ethnically oriented is partially demonstrated by the fact in the four French-oriented towns it is received in from 70 to 75 percent of the interviewed households. In the non-French town of Allagash it is received in 50 percent of the households. Conversely, 74 percent of the households in Allagash receive the Bangor Daily News as compared to 65 percent for the four French towns.

Despite the high proportion of French oriented people in the studied towns, just four percent of the households receive a French language publication. In a much larger percentage of households French language radio and television programs, all of which originate in Canada, are received. Persons in more than a majority (53 percent) of the households in the four French-oriented towns listen to radio or television programs broadcast in French. This type of activity was reported for just 8 percent of the households in Allagash.

There is an inverse correlation between educational level and tuning into French language radio and television programs. For example, while 48 percent of the respondents with less than eight years of schooling reported listening to French language broadcasts just 29 percent of the respondents with some college training reported doing so.

Although some 90 percent of the families in the four French-oriented towns have French Canadian backgrounds, far less than a majority of them have close relatives living in Canada. The range was from 17 percent for Eagle Lake to 35 percent for St. John. Although the actual numbers of families involved is quite small, there is a tendency for families having relatives in Canada to visit them with some frequency. In the French towns 83 percent of the 72 families having close relatives in Canada reported visiting them. The variation by town ranged from 73 percent for Eagle Lake to 92 percent for St. John and Fort Kent -- the two towns with most easy access to Canada.

There was little variation in visiting relatives in Canada by level of education. There was a slight tendency, however, for visiting to increase by level of education with the exception that there was a reversal at the college level.

In conclusion, ethnic origin does have importance in the lives of families living in the Valley towns for which data were collected. Although the data cited do not specifically illustrate it, there is a cultural division between the four French-oriented towns and Allagash. If the majority of people in Allagash were forced to move from their homes because of dam construction, there would be a problem of accommodation for many of them if they settled in one of the French towns. Similarly, there will be problems of accommodation for in-migrants.

Material Possessions (3.2)

As indicated in a previous section, incomes are quite low in the Valley. This situation tends to be correlated with a low level of possession of some, but not all, of the material items for which data were obtained. Theoretically most of the households included in the study could have possessed the electrical appliances listed below because of the almost universal availability of electricity.¹ The fact that more households have television than any other electrically operated items indicates a value choice.

	<u>Percent Households Possessing Item</u>
Food Freezer	41
Telephone	49
Full Basement	61
Central Heat	63
Full Bathroom	66
Gas or Electric Stove	82
Running Water	82
Television	85
Electricity	98

It is likely that one of the greatest effects of the dam construction will be an increase in individual and family income. Similarly there is likely to be a concurrent increase in material living standards. This in turn means an increase in the local sale of appliances and utilities. At present, of the five towns in the study, only Ft. Kent has any degree of commercial services available.

The proportion of households possessing the tabulated items varies considerably by town. There is, however, an internal consistency by towns. That is, except for electricity the possession of which is practically universal, if a town rates low on one item it tends to rate low on all items and vice versa. For example, the households in Allagash rank lowest for possession of all items except for food freezers in which it ranks third out of the five towns. On the other hand, including electricity, households in Ft. Kent rank first or second in the possession of seven of the eight items.

This variation by town in material wealth might well be an important variable in the impact of the building of the dams. At least initially the economic impact should be the greatest in the least well-off towns. This would tend to be true both in terms of the direct effect on present resident families and the reactions of in-migrants most of whom can be presumed to have previously possessed all or most of the level of living items included in the study.

¹Running water would be included in this category because all homes having this convenience use a private, electrically operated pump.

The variation by town in the possession of material items is further illustrated by allotting one point for the possession of each item and comparing towns by the proportion of households obtaining scores of from 7 to 9:

<u>Town</u>	<u>Proportion of Households With Material Possessions Scores of 7-9</u> (percent)
Allagash	36
St. Francis	54
Eagle Lake	64
St. John	65
Ft. Kent	74

There is a direct positive correlation between education of household heads and a high rate of possession of material items:

<u>Years of Education Of Household Heads</u>	<u>Material Possession Scores of 7-9</u> (percent)
0-7	43
8	60
9-12	70
13 & over	88

There was a positive and consistent relationship between level of education and the possession of the following individual items: Full basement, central heat, telephone, piped running water, full bathroom, and gas or electric stove.

ATTITUDES AND OPINIONS (4)

The data presented in the previous sections were based almost entirely upon responses to categorial questions. Subsequent sections are based primarily on responses to a series of open-ended questions. The major purpose of these questions was to provide data for the eventual testing of the assumptions enumerated in the introduction. Collectively the responses to the open-ended questions provide an insight into the attitudes and opinions of the respondents in the summer of 1966. The saliency and consistency of these attitudes and opinions will be tested over time in the planned subsequent studies.

The methodology employed in categorizing the responses to the open-ended questions followed relatively standard procedures. These questions were asked of 358 respondents. One of the researchers and two clerks, each working independently, used a randomly selected sample of the schedules to determine meaningful categories consistent with both the theory underlying and study and the operational hypotheses. For purposes of clarity of analysis and presentation the number of categories were held to a minimum in order to generalize the responses as far as it was possible to do so consistent with sound methodological procedures.

After the three series of categorizations were independently made of the sample schedules any differences were discussed by the three coders and a consensus was reached. In very few cases were there significant variations. A standard set of categories was thus developed for each question.

All the open-ended questions were then categorized by two coders working independently. For purposes of analytical control the coders would exchange schedules and determine a response category for each question. They then compared their coding. Once again, little variation was found. If the coders had difficulty in determining the proper category for a specific response the researcher was consulted.

In a number of cases some of the 358 respondents gave more than one reply to a question. All replies were coded. Thus in most cases, more than 358 replies have been categorized.

Future of Area (4.1)

To a significant degree the respondents related the future of the Upper St. John Valley with the building of the dams. In response to the question: "In general, what would you say is the future of this area?" The most common response was one codeable by the phrase: "Optimistic if dams are built, pessimistic if dams are not built." There were 124 such responses from the 358 respondents. An additional 60 responses were coded as being "optimistic" and 59 were coded, "negative, dams not mentioned." There were 19 responses which were coded as "no change." The most remarkable aspect of this latter response is that it was overresponded to in Allagash--the proposed site of the massive Dickey Dam.

Another somewhat surprising result of the question was that just six of the responses were codeable as "former residents will return." Almost invariably during the interviews the respondents would discuss the negative aspects of out-migration and express a desire for a condition which would make it possible for young people not to have to migrate.

For this question there is no consistent association by town when the total range of responses is considered. For example, for one town, St. John, the percentage of responses was low for both the "optimistic" and "negative" responses; while in the adjoining town of St. Francis there was a below average level of "optimistic" responses, but an above average proportion of responses coded as "negative, dams not mentioned."

Similarly there are inconsistent patterns of response by educational level. For example, one finds a much higher than expected proportion of responses in the educational attainment category "completed eight years of schooling" for both the "optimistic" and "negative, dams not mentioned" responses. Likewise it would be reasonable to expect that it would be the higher educated persons who would perceive the likelihood of change occurring in the Valley. While those with high school education answered the question with a "no change" response at a somewhat lower than expected level, those respondents with some college education answered the question with a considerably higher than expected "no change" response.

Ways Would Like Community to Develop (4.2)

The 358 respondents provided 538 codeable responses to the question: "In what ways would you like to see this community develop in the next 10 years or so?" The most common response (200) was one that was coded as "more industries or work opportunities in a non-personalized way," that is they wanted more industry in general rather than just a job opportunity for themselves. Contrastingly, just two respondents gave a response which indicated they wanted to see more occupational opportunities in the community primarily for their own personal gain.

There was also a recognition for the need for more personal, organizational, and commercial services in the Valley. A total of 56 responses were so categorized. A total of 83 respondents expressed a desire for general improvement. Eighty persons indicated a desire for an increase in population.

Just 20 of the 538 responses were coded as "negative attitude toward change." Interestingly enough 13 of these responses were recorded for Allagash respondents, the area where the most physical change is likely to occur. However, Allagash respondents also gave the "more services and activities" response to a greater extent than would be expected from their proportion of the total population. To compound the inconsistency it was Allagash residents who gave the lowest proportionate share of the "increased population" response. These last sets of data would tend to indicate that while Allagash people would like to have their own living conditions somewhat improved they are not anxious to share their community with outsiders.

The respondents with the lowest educational attainment (seven or less years) are the most likely to want to see industrial development, general changes for the better and increased population. Conversely, respondents with this educational level were less likely than expected to want to see more personal, organizational, and commercial services in their respective communities. A negative attitude toward community change was expressed most often by those respondents in the "eight years" and "nine to twelve years" educational categories.

How People Feel About Canadian Workers (4.3)

Despite the fact that except for the residents of Allagash the respondents were overwhelming French-Canadian in background, there was a general feeling that the jobs which would be created by construction of the dams belonged to Americans. The 404 codeable replies to the question: "How would people in this area feel toward people from Canada coming over to work on the dams?" were categorized as follows:

<u>Response</u>	<u>No. of Replies</u>
Will Be Detrimental To American Economic Interests	7
General Negative Reply	156
Alright if American Interest's Aren't Harmed	57
It's Inevitable That They Will Come--They Are Here Already	36
Have No Particular or Strong Objections	86
Other Replies	62

Such a set of responses tends to indicate the saliency of economic motivations. These results might also be an indication of future dissatisfaction, if by local definition, Canadians receive hiring preference. Presently in the Valley there is an undertone of dissatisfaction because many of the woodworkers in the area are Canadian citizens. Most of these persons work in the Valley from Monday through Friday and return to Canada with their paychecks for the weekend. It should be stated that as far as is known the Canadians are not hired in preference to U. S. citizens; rather there is a shortage of local workers willing to do the job.

The degree of difference by towns in their attitude toward the employment of Canadian workers is quite low. Perhaps the most surprising factor is that Allagash, the one town in which the respondents lack a French-Canadian ethnic origin, tended to show the least resentment toward possible employment of Canadian citizens. The respondents of the abutting town of St. Francis tended to be the most negative.

Reasons Want to Live In Another Area (4.4)

To test the hypothesis that adult residents of the Upper St. John Valley were reluctant to leave the area the following question was asked: "Have you ever wanted to live in some other area?" A total of 63 "yes" responses were received from the 358 respondents. The most common response was coded as "economic" and included such things as need for more work and higher wages.

In Allagash, the town with the highest proportion of households with family incomes of less than \$4500 (84 percent), the respondents were least likely to report that they had considered moving to another area for economic reasons. This attitude is consistent with the strong attachment which people in Allagash have for the area.

Respondents with the higher educational attainments were most likely to report an economic reason for desiring to live in another area.

What Liked About Area (4.5)

There were more responses (623) to the query "What is it about this area which you like?" than to any other open-ended question. There were only four responses of "nothing". The great majority of the responses related to the natural advantages of the area. The following set of categories was developed:

What Is It About This Area Which You Like?

	(percent)
Environment	26.3
People	11.6
It's Home	22.2
Nothing	0.6
Outdoor Sports Activities	13.2
Nice Place To Live	<u>26.2</u>
Percent	100.0
Number	623

What Not Liked About Area (4.6)

Responses to the counter question, "What is it about this area which you do not like?" tended to be consistent with those listed above:

What Is It About This Area Which You Do Not Like?

	(percent)
Lack Of Economic Opportunities	24.4
Lack Of And/Or Poor Services (Municipal, Commercial, Educ.)	3.9
Nothing	33.9
Natural Factors (Snow, Black- flies, Long Winters)	16.0
Lack Of Social Activities	5.5
Other	16.3
	100.0
	381

With the exception of responses categorized as "natural factors" the construction of the dams would probably alleviate, at least temporarily, the sources of most of the negative type responses. The fact that 129 of the 358 respondents replied "nothing" to the question is an indication of the relative satisfaction with the area. If construction of the dams and the consequent increase in population would tend to destroy the natural advantages of the area, it is likely that established residents will develop a resentment toward the in-migrants.

There is no discernable pattern of difference between towns in response to the "like" and "dislike" questions. Perhaps the most significant relationship is that the Allagash respondents tended to be most positive and the Eagle Lake respondents were the most negative. Allagash will be the community most directly disrupted by the dam construction, and Eagle Lake, the town most distant from the dam site, will be the least disrupted.

Although the relationships are not completely consistent, persons with the higher educational attainments (9 and more years of schooling completed) tend to express more liking for the area than persons with less education. Those persons with the greater number of years of school completed especially tend to express their liking of the community in terms of "people" This factor may relate to a greater ease of interpersonal communication among persons of higher educational attainment. Such a relationship might indicate that those persons with the greater number of years of school completed will be able to accomodate to the in-migrants better than those with fewer years of schooling.

Effects on Churches (4.7)

Responses to the question, "What effect do you think the building of the dams will have on churches in the area?" were, in general, positively oriented. Of the 371 responses, 125 indicated that an expansion would take place in church congregations. Forty-five of these particular responses related church expansion with monetary factors -- that churches would be better off because of greater income. Just 10 respondents foresaw an increase in the number of denominations. There was little or no fear expressed relating to possible "religious" or church problems resulting from the influx of people to work on the dams.

The respondents in St. Francis were the most likely to believe churches would expand and Allagash residents were the least likely to express this type of position. This is probably a realistic appraisal. Much of Allagash will be flooded or inaccessible; St. Francis is the town closest to Allagash and also will be the site of the Lincoln School Dam. There is likely to be a significant population increase in St. Francis, and therefore a probable increase in church attendance.

There is little systematic variation between perceived effects of the dams on organized religion and income distribution. Respondents whose family income falls into the \$3,000-\$4500 category are the most likely to assume the fact that religion will expand because of the dam construction. Respondents whose family incomes fall into the \$1,500-\$3,000 category were the most likely to feel that the dams would have no effect on religion.

Ways Dams Will Affect Organizations and Activities (4.8)

Approximately five percent of the 350 responses to the question, "In what way will the presence of the dams affect the organizations and activities in the area?" were negative in their connotation. The balance were either positive or neutral. One-seventh of the respondents felt that the coming of the dams would have no effect on organizations and related activities. Thus the dams are not considered to be either a major threat to existing activities or as a means of greatly expanding organizations.

As might be expected the respondents from Allagash were most likely to perceive that the dams would have negative effects on organizations and activities. Respondents from St. Francis, St. John, Ft. Kent, towns in which there is likely to be an increase in organizational activity, tended to believe that the organizations and activities in their areas would be favorably affected by the building project.

Although the relationships are not always clear cut these and other data illustrate that the respondents attitudes are relatively self-centered: they will give a negative response if they feel the dams will in some way constrain or hurt them; a positive response is forthcoming if the affect is seen to be beneficial. The responses reveal very little of either a regional or a selfless orientation.

In general, the degree of positiveness in responses increases with rise in income. The one slight exception is that respondents whose family income is in the \$4500-\$10,500 range were overrepresented in the 13 responses which were categorized as 'would do hurt or damage.'

Effects on Stores, Services (4.9)

Responses to the question, "In what way will the presence of the dams affect the existence of stores and other services in this area?" were coded as being:

	<u>Percent</u>
Basically Optimistic	86.0
Basically Pessimistic	6.8
Neutral (No Change)	<u>7.2</u>
Total Percent	100.0
Number	277

This is another indication that, in general, the dams are looked forward to in a favorable way.

When the responses to the same question were submitted to a more broad content analysis the majority of them could be identified as 'will improve the number and variety of stores and/or the quality of product.' A total of 176 responses were so categorized.

As indicated earlier, there is a tendency in the data which indicates that the respondents answered the open-ended questions largely in terms of how their particular town would be affected. The responses as to the perceived effects of the dams on stores and services follows this pattern. For example the Ft. Kent respondents tend to be optimistic -- feeling that stores and services will locate in their town. In contrast the respondents from Eagle Lake, the town farthest from the dam sites tend to be the most pessimistic. While the Allagash respondents recognize that they will lose most of their already limited number of local stores and services they also recognize that the variety and number of commercial services available to them in the area will increase.

Effects on Local Government (4.10)

The question "In what way will the presence of the dams affect local government?" elicited a great diversity of responses. Fully a third of the responses were so varied that they were coded as 'other' Part of this diversity appears to be associated with both a misunderstanding of what was meant by "local government" and also a general apathy toward governmental relations.

Each of the towns included in the study is governed by the traditional New England town meeting. In the three larger towns, Ft. Kent, St. Francis, Eagle Lake a hired town manager supervises routine governmental operations. In each of the two smaller towns, Allagash and St. John, the selectmen collectively manage the town. Although there are issues which periodically arouse great interest and activity. local government, with the possible exception of Allagash, is not a major day-to-day concern of Valley residents. Thus, it is not surprising that the question on the future of government elicited relatively few (277) responses from the 358 respondents and that these responses were diverse in character

The responses to the question on the effect of the dams on local government were coded as follows:

<u>Effect</u>	<u>Percent</u>
No Change	31.0
Will Be General Improvement In Local Government	16.2
There Will Be More Work For Town Officials And/ Or More Town Services	17.7
Indifferent To What Will Happen	11
Other Responses	<u>34.0</u>
	Percent 100.0
	Number 277

The response patterns for each of the listed responses were relatively uniform by town with a few exceptions. There were some results which were at least mildly surprising. For example, proportionately more Allagash residents expressed a belief that the dams would effect no changes in local government than was true for the residents of towns which will be less physically affected by the project. Contrastingly it was also Allagash residents who volunteered the smallest proportion of responses categorized as 'will be general improvement in local government'. One could hypothesize that these two types of responses were consistent -- that the residents of Allagash are fatalistic about the caliber of their local government and fail to see how even a major event such as the hydroelectric project could change or improve it.

Respondents whose family incomes were relatively high were more likely than those with lower incomes to feel that the construction of the dams would provide more work for town officials and spur more town services. Although there were no great differences by income level in the proportion of respondents who felt there would be no changes in local government as a result of the coming of the dams, none of the 11 respondents with family incomes of \$10,500 gave this response.

INTEREST IN WORKING ON DAMS (5)

Human resource use adjustment is dependent upon ability and desire or motivation of the individual to change. In a preceding section, it was pointed out that the demographic characteristics of the population in the study area impose serious restrictions upon the ability of individuals in the area to improve their occupation and income situations. However, to some degree, their limitations can be overcome through desire and motivation.

In order to obtain some insight into this aspect of the problem, each respondent was asked the following questions:

Do you believe that any member of this household will be willing to work on the Dickey and Lincoln Dams if they are built?

What kind of jobs could they do?

Would any members of the household be willing to be trained for a job (on the dam)?

If the response to the first question was "yes", the name of the household member was obtained.

Willing To Work On Dams (5.1)

In the study area there is a high "willingness" to work on the Dickey-Lincoln Dams if they are built. In only 77 of the 358 households (21.5 percent) were there no persons reported to be willing to work on the dams. As would be expected from the type of questions, there were a large number of "don't knows" (58 households or 16.2 percent). Thus, in almost two-thirds of the households (223 or 62.3 percent) there are one or more individuals considered to be interested in working on the dams. The respondents indicated that in the households with some interest in working on the dams there was a total of 569 individuals considered to be interested or an average of 2.6 individuals per household. In 26 households it was reported that five or more individuals would be willing to work on the dams. In five households as many as eight individuals were said to be interested. As might be expected, interest in working on the dams was highest in Allagash and St. Francis -- the communities closest to the dam sites, but of equal importance is the finding that one-half of the households in Eagle Lake and Fort Kent had members reported to be willing to work on the dam.

<u>Town</u>	<u>Percent of Total Households With One Or More Members Reported Willing To Work On Dickey-Lincoln Dams.</u>
St. John.... ..	45.9
St. Francis.	69.4
Fort Kent.... ..	54.0
Allagash.	78.6
Eagle Lake... ..	50.0
	<hr/>
	Total Percent 62.3
	Total Number 358

Kind of Job (5.2)

The kind of job that the respondents felt household members could do on the dams appear to be consistent with both the type of job that would be available and the ability factors discussed earlier. Over one-third were in the laborer category, with only one percent in the professional, technical, and kindred worker classification. Responses to the open-ended question which asked what kinds of jobs persons seeking work on the dams could do were answered, using U. S. Census classifications, as follows:

<u>Occupation Classification</u>	<u>Percent</u>
Professional.	1
Manager	1
Clerical	10
Sales.. . . .	0
Craftsman...	27
Operatives.	13
Service....	12
Laborers.. . . .	36
Total Percent	100
Number of Responses	316

Desire For Training (5.3)

Indications are that a high proportion of individuals in the area would be willing to train for jobs on the Dickey-Lincoln Dams. Respondents felt that 565 of the 569 individuals considered by them willing to work on the dams would also be willing to train for the kinds of jobs which might come available.

Although the individuals in the St. John Valley have serious limitations in terms of their ability to take advantage of new employment opportunities as measured by age, education and other demographic factors, willingness to change occupations does not appear to be a factor limiting human resource use adjustment. Individuals in the area desire to work on the dams and they are willing to be properly trained for available work.

CHILDREN WHO HAVE LEFT HOME (6)

The extent to which society is able to meet the needs and aspirations of its citizens is an important indication of its health and vitality. If large numbers of citizens leave a community to seek employment, it is generally an indication of dissatisfactions with the existing socio-economic situation.

A total of 913 children were reported as having left the 358 sample households. Of this total, 37 percent (342 children) were living in Aroostook County; 10 percent (90 children) were living in other areas of Maine; and 53 percent (481 children) were living outside of Maine. In 35 families (10 percent), five or more children were living outside of Maine. Several families reported 10, 11, and 12 children living in states other than Maine.

In terms of investment in human capital, over one-half of the children who had been supplied with goods and services, i.e., education, medical care, by the community and the State of Maine are not now living in their home state, but have gone to other areas.

As is indicated below there is considerable variation among the towns in the Upper St. John Valley in patterns of migration:

Town:	<u>Children Not Living At Home Who Live In:</u>				
	<u>Aroostook County (percent)</u>	<u>Other Areas of Maine (percent)</u>	<u>Outside Maine (percent)</u>		
St. John.....	16.2	12.4	71.4		
St. Francis..	51.9	6.2	41.9		
Fort Kent.....	27.2	7.5	65.3		
Allagash.....	54.1	10.9	35.0		
Eagle Lake.....	<u>23.4</u>	<u>13.8</u>	<u>62.8</u>		
Total Percent	37.4	9.9	52.7	100.0	
Total Number	342	90	481	913	

Since the area is relatively small geographically, it is hypothesized that the difference in migration rate is positively correlated to both the awareness of opportunities outside the State of Maine and the availability of contacts outside the area. In terms of cultural orientation and other factors mentioned previously, Allagash children are believed to be not as aware of opportunities outside the area and do not have as many contacts in Connecticut and in other areas.

Data in the table also suggest that the well-known relative deprivation hypothesis might be tested in the planned future studies.¹ The proportion of children away from home living outside of the State of Maine is inversely correlated with the degree of physical and cultural isolation of their parental homes. For example, children from Allagash, the most isolated town, are the least likely to live out of state. In contrast, Ft. Kent, the most urban-like and most easily accessible town, and St. John which is contiguous to Ft. Kent and which shows evidences of suburbanization, have the highest rates of out-of-state migration.

¹Briefly stated the relative deprivation hypothesis suggests those who are the least deprived are most likely to attempt to better their situation.

SUMMARY

The foregoing, the first of three projected studies, is essentially a base line analysis of the population living in four towns (and part of a fifth one) which will be affected by the proposed Dickey and Lincoln School hydroelectric dams in northern Aroostook County, Maine. The main focus of the study was to determine the effects of a major building project (the 200 million dollar plus Dickey and Lincoln School dams) on a relatively physically and culturally isolated rural, natural resource-oriented area.

During the summer of 1966 an interview to obtain basic demographic data was held with a responsible adult in each household in the selected towns. A total of 643 interviews were obtained. By a random selection process a little over half (56 percent) of the interviewees also responded to a series of more probing questions, primarily of the opinion type.

The area under study, the Upper St. John Valley, is on the edge of the commercial potato producing section of Aroostook County. Although some farming still exists the majority of the population obtain their livelihood either directly or indirectly from the wood producing and using industries associated with the surrounding forest lands. Incomes are relatively low, dependence on public sources for non earned income is high; however, the rate of employment is low. Material levels of living are also low.

Except for Allagash where the major Dickey Dam (340 feet high, 9200 feet long) will be located at least 80 percent of the residents of the Valley have a French-Canadian heritage. The French language is spoken by the great majority of residents, both young and old. A Roman Catholic Church, except for Allagash, is the predominant cultural feature and force in the respective communities.

The relatively poor economic conditions in the Upper St. John Valley and a continuing high rate of out-migration have contributed, particularly among businessmen, to an aura of pessimism about the economic future of the area. The building of the dams and the consequent inflow of population have been looked upon as means to reverse the trends.

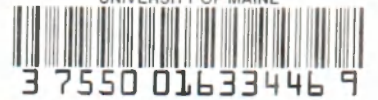
Responses to the opinion questions revealed that the majority of respondents value the valley highly as a place to live and they would be reluctant to leave it. Their only negative reaction to living in the area is the present lack of economic opportunities which they feel the dams will help to rectify. The consensus was that the dams will affect the area positively in terms of changes in economic services, churches, other organizations and activities.

While there was some difference in the responses by town of residence of the respondent, the majority of differences was between residents of the four French-oriented towns and Allagash whose population is mainly Scotch-Irish in ancestry. Allagash is the most physically remote town in the area, lacks all but the most necessary amenities, and relatively more of its population is occupationally related to woods and outdoor activities; it is also the area of lowest income.

The respondents indicated that a very large proportion of the population would be willing to work on the dams, primarily in craft, service, operative and laboring (36 percent) jobs. It is also felt that a considerable number of present out-migrants will return to take jobs during the construction phase of the project.

In general, except for Allagash where there will be considerable dislocation of the population, the residents of the Upper St. John Valley are looking forward to the construction of the dams. The second and third studies in the series will test this perception over time.

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