# NEW ENGLAND AGRICULTURAL ECONOMIC COUNCIL



# ECONOMIC DEVELOPMENT

PROCEEDINGS - JUNE 1965

AT THE

NOVA SCOTIA AGRICULTURAL COLLEGE

TRURO N. S.

# A REVIEW OF PRIMARY INDUSTRIES IN THE ATLANTIC PROVINCES

Norman Morse
Professor of Economics
Dalhousie University, Halifax

In the remarks that follow, primary industries will refer chiefly to agriculture, fisheries, and forestry, with emphasis on the first two, and only occasional reference will be made to Newfoundland. However, over a long period, Newfoundland and Nova Scotia have popularly been known for their fisheries, New Brunswick for its forest products, and Prince Edward Island, the Garden of the Gulf, for its agriculture. Yet all four provinces possess in some measure each of the industries, although forestry is minimal in Prince Edward Island and agriculture is small in Newfoundland. In short, Newfoundland's heavy dependence over so much of its history on its fisheries resulted in the saying that "Newfoundlanders were all at home at sea and all at sea at home". But this situation has changed in our time.

The history of the primary industries goes back to the days of exploration and settlement, and the development of each for a long time was associated with settlement. The fisheries is the oldest of the three, using as a criterion the existence of independent or autonomous economic activity when in the early days the dry salt cure was an important item of international trade.[1] The fur trade developed in the 1500's as an adjunct to the fisheries, but owing to the limited size of the Atlantic Provinces, and for other reasons, it never occupied the predominant position it held in the St. Lawrence and the hinterland to the west from the 1600's to 1821, and from Hudson Bay from 1670 to, say, 1869 or later. Forestry became significant in New Brunswick after the American Revolution when Britain shifted its purchases of tall pine for masts for naval ships to New Brunswick. Later, Britain drew on New Brunswick even more heavily in the timber trade despite a transfer of business to Quebec in 1804 in the Napoleonic period to take advantage of the large reserves in the St. Lawrence watershed.[2] The development of forestry stamped a pattern on the province and aspiring agriculturists in the early 1800's complained of the competition of the forest industries for agricultural labor. It was claimed that the habits of living young men acquired in logging camps made them dissatisfied with the more sedate and quiet ways of pioneer agriculture.

Agriculture began to take on the aspects of an industry in its own right around the middle of the century.[3] Letters of Agricola, published in the Acadian Recorder after 1818 are deemed to have had more immediate effect on the growth of farmer organizations than on agricultural output itself. But in the three decades from about 1820 to 1850, farmers were learning about the agricultural lines along which they perhaps enjoyed comparative advantages. There occurred a shift towards livestock

and away from cereals. J. F. W. Johnston's report on New Brunswick at mid-century envisaged the province as becoming, among other things, the setting for a two million acre sheep range that would provide lamb and mutton and wool for growing metropolitan centers in nearby United States and also in the United Kingdom.[4] Prince Edward Island perhaps afforded the easiest frontier for agricultural development, and Island farmers supplied horses, hay, oats, and foodstuffs to the logging camps, shipbuilding centers, and towns of Nova Scotia and New Brunswick. However, soil exhaustion hampered agriculture in Prince Edward Island until better crop rotations were developed towards the close of the 1800's with the introduction of Indian corn and expansion of dairying and the raising of livestock which made available more adequate supplies of manure in the place of musselmud gathered from the bottom of bays in the winter.[5]

The primary industries have tended to be regarded as slow moving, or slow to change, but they have not been static. Each of the industries, or significant parts of them, have experienced long waves of change over a period of approximately a century from 1850 to 1950, or to the present. If a lesson can be suggested by the past it is that present conditions cannot be expected to remain unchanged and that foresight and adaptability will be required of decision-makers in these industries in future. Changes in the past have been largely in response to external markets and this situation probably will persist in the future although it is possible that responses to the local market will increase, especially in agriculture.

Some of the main changes in the three primary industries over the last century can be summarized. In agriculture,[6] in the last quarter of last century, there was a rise and decline in the raising of cattle, chiefly for export to England, in the marshlands and areas surrounding the headwaters of the Bay of Fundy in both Nova Scotia and New Brunswick. Later with mechanization and decline in the number of horses as well as cattle, reduced demand for hay resulted in disrepair of the dykes and deterioration of the marshlands until marshland reclamation was instituted, mainly since World War II, under MMRA. From about the 1890's to World War II, the apple industry of the Annapolis Valley rose to a peak of production of 3,000,000 barrels annually in the early 1930's and then declined in the post-war period to about 1/3 its former size. Potatoes were grown in Nova Scotia in the young apple orchards and an export trade flourished to the Caribbean. After World War I, potato production shifted more to Prince Edward Island, and New Brunswick. The ranching of foxes, an industry which commenced in Prince Edward Island, began around the turn of the century followed by complete collapse after World War II. However, mink ranching has taken its place to some extent and is carried on in all four of the Atlantic Provinces. Since World War II, the production of low bush blueberries has expanded, especially in Charlotte County, New Brunswick, and Cumberland County, Nova Scotia, largely in relation to demand in

the United States. At present, the Maritimes are a surplus production area in blueberries, apples, and potatoes, but the Atlantic region as a whole is a net importer of most agricultural products. One exception is poultry products, which are produced in quantities approximately equivalent to local consumption. Expansion of the production of poultry products has been marked by the rise of large scale producers located chiefly in Kings County, Nova Scotia. The production of hogs, like that of poultry, has been encouraged, especially during and since World War II, by a policy of freight assistance on feed grains, but changes in the volume of production of hogs have been less pronounced than in poultry. The raising of beef cattle has been given attention also, but the region is still a net importer of red meats. Dairying has for a long time comprised a large segment of agriculture; it has had a rather unspectacular history generally, and has been associated with mixed farming and low incomes, especially during the 1930's. Nevertheless, good herds have been built up, and breeding stock is exported. Prince Edward Island exports cattle and swine for breeding purposes, and cattle are sold from Nova Scotia and New Brunswick. The production of milk approximates local demand, and cheese is produced in Prince Edward Island and New Brunswick. Other uses of milk include the production of butter, ice cream, and condensed milk. Fruit growing areas, especially for tree fruits, are situated mainly in the Annapolis and lower Saint John River valleys.

In the fisheries during last century,7 the Americal mackerel and cod fisheries in Canadian waters declined in the 1870's as United States producers shifted to fresh fishing for domestic markets. In the Maritimes there was, however, a rise in the production of salt cod and other species until 1886. Withdrawal of the Americans from the Gulf and banks off Nova Scotia and Newfoundland was followed in the last quarter of last century by the beginnings of the bank fishery from Lunenburg. Despite the decline in the total output of salt cod in Nova Scotia after 1886, Lunenburg production of bank cod increased in relation to sales in Puerto Rico and the Lunenburg bank fleet expanded to 150 vessels after the turn of the century. Later, as depression hit the industry, vessels were sold or converted to rum running.

The production of lobsters reached a peak of about 100,000,000 pounds annually in 1885, at the time the production of salt fish was at its highest, and the product was canned and sold in the United Kingdom. The canning of lobsters spread like a wave through coastal regions in the Maritimes in the space of a few years as lobster stocks were depleted along the cost of Maine and American producers shifted their activities to the Maritimes. With the growth of population in North America and improved means of transportation, the lobster trade has changed during the last four decades so that now canning comprises only a small part of the total industry. The bulk of lobster production is sold alive, fresh or chilled in North America. Unless additional lobster stocks are found in deeper offshore waters, it is expected that current levels of production can be maintained at around 40,000,000 pounds annually. The landed value of lobsters is $15-20,000,000

the highest of any species caught in the Atlantic Provinces. It is clear that lobsters are no longer considered a nuisance as they were a century ago.

Two other specialty fishery products can be mentioned also to indicate the nature of the effects of changes in technology, including transportation. The production of canned sardines began in Canada also in 1885 with the establishment of a plant by Connors brothers at Black's Harbor, New Brunswick. The rise of this enterprise was along lines similar to those which had occurred in Lubec and Eastport, Maine, in relation to the herring stocks in Passamaquoddy. Also, in the last decade of the century, the shipment of oysters from beds in the Gulf and Northumberland Strait to Montreal expanded until disease decimated the stock at the beginning of World War I, although stocks have been gradually re-established in the last quarter century. Another specialty, which depended largely on the finding, was the discovery of scallop beds in the Bay of Fundy in the early 1920's. The large beds on Georges' Bank in the Gulf of Maine were not discovered until the early 1950's.

In this century, the most significant change, though a gradual one that was marked by heated debate, known as the "Trawler controversy" which culminated in policies that resulted in built-in inefficiency in the ground-fishery, has been the shift from salted and cured products to the production of fresh and frozen. This shift has been associated with fundamental changes in techniques and structure of the industry. Technological changes have tended to accentuate the favorable geographical location of Nova Scotia. Since the mid-1940's, the technological revolution in the fisheries, has in a sense been even more striking than that which has occurred in agriculture. And the fisheries, like agriculture, have been assisted in changing by public measures of support, including the provision of credit, in all the Atlantic Provinces. The Province with the most drastic plan for change is Newfoundland which seeks to reduce the outports and concentrate the fishery in the more southerly parts.

In the forest industries, a major shift has been away from heavy dependence on lumbering and sawmilling to the production in this century of pulpwood, wood pulp, and newsprint until the latter has become the largest branch of the industry. The production of newsprint can involve large scale investment in plant and a close relationship between primary operations and secondary manufacturing. These relationships are also characteristic of the ground fishery, and, to a lesser extent, some branches of agriculture. The relationship is such that primary operations can reasonably be regarded as a backward linkage from secondary processing than the secondary stages as a forward linkage from the primary. As far as markets are concerned, for both lumber and newsprint from the Atlantic Provinces, sales are made in North America and in the United Kingdom and Europe. However, supply is limited by the geographic size of the Atlantic Provinces and the rate of growth of forests.

As a consequence of long run changes, the current position of the primary industries can be summarized briefly as in Table I, which contains data pertaining chiefly to value of production and employment in primary production and closely related secondary manufacturing.

The data indicate that in terms of gross value of primary products in 1961, agriculture ranked first in the Atlantic Provinces with gross income of $136,146,000 although net farm income was only $33,537,000. Primary forest products stood in second position with a gross value of $101,472,000, and fisheries third with value landed of $54,882,000. However, if value added in secondary manufacturing also is included in order to obtain a figure suggestive of the value of primary and secondary production without double-counting, the position of agriculture and forestry is reversed. On this basis the forest industries stood first with a value of $216.8 million, agriculture second with $153.2 millions, and fisheries third with $120.1 millions (marketed value of fishery products).

In general terms, also, it can be said that New Brunswick led in the forest industries followed by Newfoundland; Nova Scotia led in the fisheries, followed by Newfoundland; and Nova Scotia led in agriculture, followed by New Brunswick. In Prince Edward Island, agriculture was the leading primary industry; forestry in New Brunswick and Newfoundland; while in Nova Scotia, agriculture showed figures larger than those for fisheries.

Employment figures pertaining to primary production are rather unsatisfactory owing to the seasonal nature of the three industries. It is difficult to show the extent to which persons are engaged seasonally in one or more of the industries. Nevertheless, agriculture is shown as affording employment to 58,000 persons and fishing to 41,000 persons. Processing of agricultural products gave employment to 3,365 persons, fish processing to 9,688, pulp and paper mills to 8,903, and sawmills to 4,068 persons, or to a total of 26,024 persons, equivalent to 4.87% of the non-agricultural labor force of the Atlantic Provinces.

If the figures in agriculture in 1961 were to be compared to earlier statistics, the decline in the area of farm land, particularly in Nova Scotia and also in New Brunswick, would be noticeable. In 1911, total area of improved land in the Maritimes was nearly 3.5 million acres.[8] In 1961, the area of improved land was only 1.8 million acres, approximately 50 per cent of the 1911 figure. There has been a decline also in farm population and in farm labor force as a consequence of the combined effects of farm abandonment and of mechanization. On the other hand, the index of farm production shows gains in real output in the last quarter century.

An analysis of the composition of farm cash income over the same period would show the following features. In Prince

TABLE I.

PRIMARY INDUSTRIES, ATLANTIC PROVINCES, 1961

| | Nfld. | P.E.I. | N.S. | N.B. | TOTAL |
|---|---|---|---|---|---|
| **Agriculture** | | | | | |
| 1. Total Gross Income [1] | | 28,271 | 55,691 | 52,184 | 136,146 |
| 2. Total Cash Income [2] | | 23,913 | 45,498 | 42,311 | 111,722 |
| 3. Farm Net Income [1] | | 6,808 | 14,819 | 11,190 | 33,537 |
| 4. Area of Farm Land [3] | | | | | |
| a) Improved | 20,455 | 579,558 | 497,521 | 734,107 | 1,831,641 |
| b) Unimproved | 34,106 | 380,599 | 1732,874 | 1465,568 | 3,613,147 |
| c) Total | 54,561 | 960,157 | 2230,395 | 2199,675 | 5,444,788 |
| 5. Farm Population [3] | 11,090 | 34,753 | 58,020 | 63,334 | 167,197 |
| 6. Processing of Ag. Products [4] | | | | | |
| a) Gross V.P. | | 8,569.9 | 32,342.5 | 28,546.7 | 69,459.1 |
| b) Net V.P. | | 1,582.3 | 8,951.9 | 6,527.2 | 17,061.4 |
| 7. Employment | | | | | |
| a) Primary [9] | | | | | 58,000 (est.) |
| b) Secondary [4] | | 326 | 1,901 | 1,138 | 3,365 |
| **Fisheries** | | | | | |
| 1. Value Landed [5] | 14,921.8 | 4,489.1 | 27,741.3 | 7,729.8 | 54,882 |
| 2. Marketed Value [5] | 33,119 | 6,046 | 54,688.7 | 26,273.6 | 120,127.3 |
| 3. Leading Species [5] | | | | | |
| Value Landed- | | | | | |
| a) Lobster | 1,251.7 | 3,218.8 | 8,783.8 | 3,876.7 | 17,131 |
| b) Cod | 9,028.2 | 225.6 | 3,443.2 | 1,138.1 | 13,836.1 |
| c) Haddock | 1,052.2 | 70.5 | 3,350 | 159.1 | 4,632.1 |
| Value Marketed- | | | | | |
| a) Cod | 19,377.1 | 615.6 | 12,470.7 | 2,625 | 35,088.4 |
| b) Lobster | 2,137 | 3,736. | 8,999.9 | 11,092.6 | 25,966.3 |
| c) Herring | 503.6 | 123.9 | 2,859.4 | 8,388.9 | 11,875.8 |

| | Nfld. | P.E.I. | N.S. | N.B. | TOTAL |
|---|---|---|---|---|---|
| 4. Employment | | | | | |
| a) Primary[6] | 18,756 | 3,464 | 12,578 | 6,228 | 41,026 |
| b) Secondary[7] | 2,978 | 392 | 3,924 | 2,394 | 9,688 |
| Forestry | | | | | |
| 1. G.V. of Products[8] | 25,961 | 1,637 | 19,777 | 44,097 | 101,472 |
| 2. Value of L.& B.[8] | 1,702 | 326 | 8,889 | 16,675 | 27,592 |
| 3. Value of Pulpwood[8] | 21,707 | 438 | 6,996 | 24,176 | 53,313 |
| 4. G.V. of P.& P.M.[7] | 73,725 | | 25,963.4 | 108,467.8 | 203,891.4 |
| 5. N.V. of P.& P.M.[7] | 39,224.9 | | 13,476.3 | 49,454.9 | 100,287.6 |
| 6. Employment in P. & P.M.[7] | 3,196 | | 1,449 | 4,258 | 8,903 |
| 7. G.V. of S.M.[7] | 1,765.8 | 331 | 11,568.4 | 20,790.5 | 34,455.7 |
| 8. N.V. of S.M.[7] | 826.4 | 172.1 | 5,080.1 | 8,999.6 | 15,078.3 |
| 9. Employment in Sawmills[7] | 293 | 86 | 1,552 | 2,137 | 4,068 |
| 10. Employment | | | | | |
| a) Primary | | | | | |
| b) Secondary | | | | | |

## SOURCES AND NOTES

Sources

1. D.B.S.; Farm Net Income, 1963, Tables 3, 4, and 5.

2. D.B.S.; Farm Cash Income, 1963, Table 1.

3. D.B.S.; 1961 Census of Canada, Agriculture, Series 5.1, Bulletins 5.1 -2, 5.1 -3, 5.1 -4, 5.1 -5, Page 2-1, Table 2.

4. D.B.S.; Manufacturing Industries in Canada, P.E.I., Page 31, Table 12.

   D.B.S.; Manufacturing Industries in Canada, N.B., Page 62, Table 24.

   D.B.S.; Manufacturing Industries in Canada, N.S., Page 48, Table 19.

5. D.B.S.; Fisheries Statistics, Newfoundland, 1961. Pages 7 & 8, Tables 1 & 2.

   D.B.S.; Fisheries Statistics, P.E.I., 1963, Pages 6 & 8, Tables 1 & 2.

   D.B.S.; Fisheries Statistics, Nova Scotia, 1962, Pages 8 & 12, Tables 1 & 2.

   D.B.S.; Fisheries Statistics, New Brunswick, 1962, Pages 6 & 10, Tables 1 & 2.

6. D.B.S.; Fisheries Statistics, Newfoundland, 1961, Page 26, Table 5.

   D.B.S.; Fisheries Statistics, P.E.I., 1963, Page 23, Table 11.

   D.B.S.; Fisheries Statistics, Nova Scotia, 1962, Page 45, Table 11.

   D.B.S.; Fisheries Statistics, New Brunswick, 1962, Page 33, Table 11.

7. D.B.S.; Manufacturing Industries of Canada, Atlantic Provinces, Pages 24, 36, 48, 62; Tables 9, 14, 19, 24.

8. D.B.S. Logging, 1961, Page 6, Table 1.

9. A.P.E.C.; The Atlantic Provinces Statistical Review, 1963, Page 22.

Notes:

a) Under "Processing of Agricultural Products" no values are given for Newfoundland because the components making up the figures shown could not be found separated from some other total. The figures given include butter and cheese, and pasturizing for all the Maritime Provinces, fruit and vegetable processing for N.S. and P.E.I., and slaughtering and meat packing for N.S. and N.B.

b) Abbreviations:
V.P. - Value of Product
G.V. - Gross Value
N.V. - Net Value
P. and P.M. - Pulp and Paper Mills
S.M. - Saw Mills
L. & B. - Logs and Bolts

c) All monetary values in $'000's.

Edward Island, potatoes have been the dominant part of agriculture, accounting for approximately one-third of farm cash income. The importance of cattle, calves and hogs has increased along with dairy products, while eggs have declined. In Nova Scotia, the outstanding changes have been the reversal of positions occupied by the fruit and poultry industries in the last two decades. Perhaps in the place of Evangeline and apples the Province should feature a story of "The Little White Hen". In Nova Scotia, also, there has been a relative increase in livestock and livestock products by about 25 per cent. In New Brunswick, on the other hand, livestock and livestock products have comprised the chief source of cash income, and potatoes have usually remained below dairy products. The production and sale of poultry and eggs is relatively about twice as significant as in the pre-World War II period, but the most noticeable expansion in this industry has been in Nova Scotia.

In the fisheries, the first three species in terms of value landed in 1961 were lobsters, cod, and haddock respectively; and in terms of marketed value, cod, lobsters, and herring. The effects of processing on marketed value caused cod to exceed lobsters and herring (sardines) to exceed haddock. In the old days, say a century ago, the "big three" were cod, herring and mackerel, to which were added lobsters. Over the last three decades and longer, the major changes, as mentioned above, have been associated with the shift to fresh, frozen, and pre-cooked products following the development of the filleting process in the early 1920's.

Data on forest industries are rather incomplete over a long period, but they show the importance in this century of the production of pulp wood and the rise of pulp and paper mills in New Brunswick and Newfoundland, and to a lesser extent in Nova Scotia. Much of this production, as along the North Shore of the St. Lawrence, occurred in relation to markets in England, but some production, as in South Western Nova Scotia, expanded in relation to the United States. So far as lumber products are concerned, the decline in the square timber trade of the first half of the last century was followed by shipments of lumber in varying annual amounts both to England and United States, and even to Central Canada. In the last three decades, the Maritime Lumber Bureau has sought to improve the grading and to increase the sale of lumber from the Maritimes.

---

Any consideration of the current and future position of the primary industries of the Atlantic Region must take into account the total economic situation comprising both the supply and demand sides of the equation relevant to these industries. The Atlantic Provinces have to be regarded as an open economy from the standpoint of interregional trade within Canada and of

international trade with other countries. The open economy aspects of the situation have been beneficial to the region in that they have meant that external demand has impinged on domestic resources, leading to their utilization and the creation of employment in the Atlantic region. On the other hand, suppliers outside the Atlantic Region frequently have shipped their products--such as meats, flour and butter--into the area in competition with local suppliers, and have reduced the size of the local market, or the effective domestic demand, for the products of the local primary industries.

Given the open market feature which affects demand, the size of the primary industries is determined by supply conditions. Of course, if local demand were larger, that is, if the population of the region were larger, then even with the open market feature, the primary industries probably would be larger. But just as Canada has thrown up metropolitan centers with greater difficulty than has the United States, so the Atlantic Provinces have developed metropolitan centers with greater difficulty than has Central Canada. It is recognized that the growth of cities, like Montreal and New York, depended on many facturs, including the servicing of a vast hinterland, yet it is suggested here that the absence of a metropolitan center of, say, 1,000,000 persons in the Atlantic region at this stage in their history is in a measure a consequence of real supply conditions, or the total resource base of the Atlantic region. Although each of the primary industries considered in this paper could be larger in terms of output, the limited extent of local effective demand for their products as measured by the size of population, can be regarded as a reflection of the limited resource base itself, relative to other areas. The situation has the appearance of a vicious circle, especially since it is reasonable to presume also that the application of advanced techniques together with a greater degree of rationalization would make it possible to produce as much or greater output with lower employment than is presently afforded. Thus, under forseeable conditions, the three primary industries appear not by themselves to be direct engines for significant growth of employment, population, and effective demand in the Atlantic region.

Without entering into a discussion of theories of economic growth, and the place of primary industries in the process, the supply conditions in each of the three industries can be summarized.

Having regard to the general need for limestone on soils, agricultural land resources are rather scattered geographically and vary from marshlands receiving rather heavy public and private expenditures for drainage and maintenance to uplands which can be rather dry and, therefore, costly also. For a number of crops, irrigation is needed. In addition, rolling topography, combined with the historical fact that in the course of settlement the size of farms has turned out to be small in terms of the area of improved land per farm, have

created obstacles to the economic use of machinery. It is easy for farms to be over-capitalized in terms of machinery and equipment. Owing to difficulties of an institutional nature to adjust supply to demand, some lands are used extensively which, owing to the character of investment, economic theory would suggest ought to be used more intensively. Without an agricultural base sufficiently rich or of sufficient extent to permit the Atlantic region to make a breakthrough to become a predominantly agricultural exporting region, the agricultural industry has in this century, as in other parts of North America, gone through a process of adaptation as indicated by statistics pertaining to declining farm area, farm population, and farm labor force. On the other hand, agricultural output has not declined in the last quarter century, and has shown greatest gains in New Brunswick and Prince Edward Island.

In the fisheries, although much has been said and written elsewhere about the richness of the Northwest Atlantic, which from Greenland to the Gulp of Maine has been yielding in the last few years upwards of two million metric tons of fish annually, the fact remains that the sea fisheries beyond the three-mile limit are a common property resource exploited internationally and cannot be considered solely the property of Canada or the Atlantic Provinces. In the domestic fisheries, such as for lobsters and oysters, there are limited supplies unless new stocks are found or new cultural techniques developed. In the sea fisheries generally, the only cultural practices that are practical or economic are those associated with harvesting practices rather than with the rearing of fish stocks. Uniformity in harvesting practices requires international co-operation which is being undertaken under the direction of the International Commission for the Northwest Atlantic Fisheries, established in 1949, and which is forced on the participating countries by the depletion of fish stocks and the increasing costs associated with the exploitation of a common property resource. Nevertheless, the Northwest Atlantic fishery is still the richest fishery in the North Atlantic in terms of yield per unit of fishing effort.9 Yet as a country such as Canada also moves to higher levels of per capita income and output per worker in various lines of economic endeavour, there is difficulty in maintaining a comparative advantage in the fisheries despite the political-economic change that occurred during World War II in Nova Scotia which led to general acceptance among fishermen of the use of trawlers as more powerful devices for capture than dory vessels and inshore motor boats and hastened a solution to the former built-in inefficiency in the industry as a consequence of the "trawler controversy".

In the forest industries there are problems associated with the amount of forest land and the quality of the forests. Certain species of trees, especially hardwood, have been attacked by disease and damage caused by the spruce bud worm

in New Brunswick is well known. Nevertheless, it is estimated, as expansion of the pulp and paper industry shows, that the rate of growth of trees is such that the annual cut in the Atlantic region can be increased, and some mills have adopted techniques that will enable them to use a wider range of species in the production of newsprint.

However, despite limitations of resources with respect to the three primary industries which may cause the Atlantic region to look in other directions such as to secondary manufacturing or even the tertiary industries for broad avenues to economic growth, the problems in the primary industries considered here are as yet more relative than absolute. Both the value and the volume of output of three renewable resource industries can be expected to expand through time as has been the case in the past, with diminishing returns being offset by technologocal advances and with new sources of income being sought by resort to the production of special products such as saddle horses, the purchase of which Thorstein Veblen would regard as a manifestation of conspicuous consumption but the consumption of which, like yachts, speed boats or the second of third car in the family, are a mark of the affluence of our age - even in the Atlantic Provinces.

---

REFERENCES

[1]H. A. Innis, The Cod Fisheries, (Toronto, 1954).

[2]W. T. Easterbrook and H. G. J. Aitken, Canadian Economic History, (Toronto, 1956).

[3]V. C. Fowke, Canadian Agricultural Policy, (Toronto, 1947).

[4]J. F. W. Johnston, Report on Agricultural Capabilities of the Province of New Brunswick, (Fredericton, 1850).

[5]H. A. Innis and A. R. M. Lower, Select Documents in Canadian Economic History, 1783-1885, (Toronto, 1933).

[6]V. C. Fowke, op. cit.; Report of the Royal Commission on Rural Credit, Province of Nova Scotia, (Halifax, 1957); and Annual Reports of the Departments of Agriculture for the various Provinces.

[7]H. A. Innis, op. cit.; R. F. Grant, The Canadian Atlantic Fishery, (Toronto, 1934); and F. W. Wallace, Canadian Fisheries Manual, 1945, (Montreal, 1945).

[8]Census data.

[9]W. R. Martin, "Trends in Canadian Atlantic Mainland Fisheries Past, Present and Future", Trade News, Vol. 16, No. 2, August, 1963.