# chapter seven

## DAIRY

#### INTRODUCTION<sup>1</sup>

The Canadian dairy industry is beset with problems, both natural and man made. Climatic conditions for milk production are less favourable in Canada than in most countries; per capita consumption of milk and milk products is falling in Canada as it is in most countries; even with a rapid increase in population Canadian consumption of milk in all forms is increasing only slightly; substitutes threaten fluid milk producers' markets, the devaluation of the British pound has reduced Canadian cheese exports; high support prices in many countries have led to a world-wide surplus of dairy products.

Federal dairy policies have supported manufacturing milk and cream prices by offers-to-purchase programs, by embargoes on virtually all dairy imports except specialty cheeses and by other forms of subsidization. To some extent these subsidies have slowed down adjustments. Support programs have provided seasonally stable prices but the year-to-year changes in dairy programs have created uncertainties for investment in the entire industry. Some milk producers use modern methods and technology in highly efficient operations but many are appallingly out of date.

There are about 110,000 manufacturing milk and cream shippers of whom about 78,000 ship less than 100,000 pounds of milk (equivalents) annually and about 21,000 fluid milk shippers of whom nearly all ship over 100,000

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<sup>&</sup>lt;sup>1</sup>This paper draws heavily with frequent unascribed quotes from a study done for the Task Force "Canadian Dairy Policies" by B. B. Perkins, J. H. Clark and R. G. Marshall, of the University of Guelph.

pounds of milk.<sup>2</sup> Except for those small scale producers who have little alternative use for the few resources they devote to dairying and the largest scale producers (predominantly fluid shippers) who have attained substantial economies of size, dairy farmers have high costs. The dairy income problem revolves around those small and medium sized dairy farms whose operators have few alternatives either off-farm or on-farm and who have not managed to up-grade their milk production technology. Given their lack of modernization the majority of producers would not be able to cover their operating costs and obtain a return on their labour and investment in dairying if federal subsidies were significantly reduced. In such an event many producers who derive a large part of their income from dairying would face income problems varying in severity and duration with their farm and off-farm alternatives. Milk processing and distributing firms have serious problems too. Their numbers have fallen by one-third in six years (from 1,600 plants in 1963 to 1,100 in 1969) and of those remaining about one-third are so small as to have annual sales of less than \$250,000. Among both farms and milk plants there are wide differences in costs and use of technology and the smaller farmers, processors and distributors face serious financial problems.

Currently the Federal treasury costs of support programs for manufacturing milk and cream amount to \$125 million per year and the consumer costs (through higher dairy product prices) to about \$100 million. There are no developments in the offing which offer any prospect of improved incomes to producers. Indeed high prices for fluid milk are providing incentives for the use of substitutes which could erode dairy product markets.

This chapter attempts to do six things: first, to present a brief description of the structure of the milk producing sector indicating in particular the degree of relationship between rural poverty and dairying; second, to present some projections to 1980; third, to discuss problems within the processing sector; fourth, to comment on the implications of fluid milk substitutes; fifth, to explore the main issues and policies in the dairy industry; finally, to make a number of recommendations.

#### THE MILK PRODUCING SECTOR

In 1966<sup>3</sup> about 190,000 farmers in Canada produced milk; almost one-half of the Census count of farmers had income from the sale of milk or milk products. The majority of dairy farmers were cream shippers with small operations. Cream shippers were a majority of the total in all provinces except for Quebec, Ontario and British Columbia (Table 2). Shippers of

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<sup>&</sup>lt;sup>9</sup> Many dairymen, especially in the Central Provinces gain substantial additional income from the sale of dairy cows and heifers to the United States. Sales amounted to \$12 million in 1967. As noted in the chapter on Livestock a very considerable number of veal calves are exported from Quebec and Ontario.

<sup>&</sup>lt;sup>a</sup> Because of rapid structural change in the sector one must pay particular attention to the year quoted. The 190,000 dairy farmers of the 1966 Census had shrunk to almost 130,000 at time of writing this Report.

manufacturing milk were numerically important only in Quebec, Ontario and Prince Edward Island. Not surprisingly, the number of fluid shippers varied roughly in proportion to the provincial population.

Province	Cream	Manufactured	Fluid	Total			
Prince Edward Island	3,042	1,007	110	4,159			
Nova Scotia	2,350	201	1,287	3,838			
New Brunswick	2,847	428	720	3,995			
Ouebec	16,571	41,748	5,494	63,813			
Ontario	15,466	22,203	7,525	45,194			
Manitoba	15,803	716	1,234	17,753			
Saskatchewan	23,453	12	776	24,241			
Alberta	23,389	1,950	1,423	26,762			
British Columbia	614	294	2,079	2,985			
- Total	103,535	68,559	20,648	192,740			

TABLE 1

The Distribution of Dairy Farms by Type of Shipper and Province, 1966

SOURCE: Mackenzie, W., Canadian Dairy Industry, ARDA Project No. 15033, Canada Department of Forestry and Rural Development. Mackenzie's data for numbers of fluid shippers were adjusted by use of data from the 1966 Census of Agriculture. Mackenzie's data on manufacturing milk and cream shippers double counted about 7,000 producers who shipped both milk and cream. Since most of these shippers probably shifted from cream to manufacturing milk during the dairy year, it is primarily the number of cream shippers which was overestimated.

A vast majority of the dairy enterprises on Canadian farms are small. In 1966 at least two-thirds of the producers in the Maritimes and the Prairies shipped less than 48,000 pounds per year, which represents the output of about eight average cows and yields less than \$2,500 in gross returns per dairy enterprise (Table 2). Even in Quebec and Ontario fully one-third of the shippers were of this small size; only British Columbia was an exception and even then one-quarter of its shippers were of this size. The great majority of these smallest scale producers were cream shippers; the relative importance of cream shipping declines markedly with increases in output per farm. By contrast fluid milk shippers were heavily concentrated in the 96,000 pounds and over output class and almost none of them produced less than 48,000 pounds per year. Only Quebec, Ontario and to a lesser extent, Prince Edward Island had a substantial proportion of manufacturing milk shippers. These shippers were intermediate in scale of output between cream and fluid shippers.

## Shippers of Fluid Milk

All provinces have legislation which provides for restricted entry into the fluid market but while prices received for quota sales are higher than those in manufacturing markets, fluid shippers must ship on a year-round basis and meet higher standards of milk quality. Because of the location, land and

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labour costs are typically higher on fluid milk farms. These factors have resulted in above-average dairy farm managers who make fluid milk production a major enterprise. Appendix A to this chapter gives farm management data on a considerable number of dairy farms across Canada.

Province	Shipping Volume	Cream	Manu- facturing	Fluid	Total
	(lbs. milk equivalent per annum)	(1	per cent of all	dairy farm	ns)
Prince Edward Island	under 48.000	54	14	(—)	69
	48.000-95.999	15	7	È	22
	96,000 and over	4	3	2	9
	 Total	73	24	3	100
Nova Scotia	under 48,000	55	3	4	62
	48,000–95,999	5	1	7	14
	96,000 and over	1	1	22	24
	Total	61	5	34	100
New Brunswick	under 48,000	56	6	1	63
	48,000-95,999	12	3	3	18
	96,000 and over	3	2	14	19
	– Total	71	11	18	100
Quebec		18	23	()	41
•	48.000-95.999	7	20	ì	28
	96,000 and over	2	22	7	31
	Total	26	65	9	100
Ontario	under 48,000	22	10	()	33
	48.000-95.999	9	12	ì	21
	96,000 and over	3	<sup></sup> 27	16	46
	 Total	34	49	17:	100
Manitoba	under 48,000	75	2	()	78
	48,000-95,999	12	1	(—)	13
	96,000 and over	2	1	7	9
	– Total	89	4	7	100
Saskatchewan	under 48,000	90	(—)	()	90
	48,000-95,999	6	(—)	()	6
	96,000 and over	1	(—)́	3	4
	- Total	97	(—)	3	100
Alberta	under 48,000	69	2	(—)	71
	48,000-95,999	15	2	(—)	17
	96,000 and over	4	3	<b>`</b> 5́	12
	 Total	87	7	5	100

 TABLE 2

 Volume of Milk Shipped by Type of Shipper and Province, 1966

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Province	Shipping Volume	Cream	Manu- facturing	Fluid	Total
	(lbs. milk equivalent per annum)	6	per cent of all	dairy farr	ns)
British Columbia	under 48,000 48,000–95,999 96,000 and over	18 2 (—)	4 3 3	(—) 16 54	23 20 57
	Total	21	10	70	100
Canada	under 48,000 48,000-95,999 96,000 and over	43 6 2	11 10 14	() 1 9	54 20 26
	- Total	54	36	11	100

TABLE 2	
Volume of Milk Shipped by Type of Shipper and Province, 1966	5

(--) less than .5 per cent. Percentages do not add exactly to totals in some cases because of rounding.

Source: see Table 1.

Data on over 750 fluid milk farms in Ontario indicate that in the mid 1960's the average cost per hundredweight of milk produced declined sharply up to 300,000 pounds per year but only modestly beyond that level. These data indicate that the minimum size for a viable dairy enterprise is 25 to 30 cows with an annual production of close to 10,000 pounds of milk per cow. Smaller enterprises can be expected to have considerably higher costs. In 1966 there were fewer than 3,000 fluid shippers who shipped less than 96,000 pounds (located mostly in Quebec and the Maritimes) but there were probably another 5,000 in the 96,000 to 192,000 class and both of these. groups would have had higher costs and lower net incomes than the average fluid shippers. Production costs and technological improvements increase the size of fluid milk enterprise necessary to have a profitable unit and the smaller shippers will find it increasingly difficult to compete. As a class they are not considered to have had serious income problems and their adjustment out of the industry or into larger size operations is made easier by the opportunity in most provinces to sell their fluid quotas or to acquire additional quotas.

#### Shippers of Cream and Manufacturing Milk

A special survey of shippers of cream and manufacturing milk in 1966<sup>4</sup> revealed that only 36 per cent of them derived one-half or more of their cash receipts from sales of milk and cream and that a similar proportion obtained less than one-quarter of their cash receipts from this source (Table 3). Moreover, even this degree of dependence is characteristic only of produc-

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<sup>&</sup>lt;sup>4</sup>W. J. White and V. A. Heighton, The Structure of the Canadian Manufacturing Milk and Cream Industry, Canada Department of Agriculture, March 1968.

	Less than 25%	25-49%	50-74%	75–100%
		(perce	ntage)	
Canada	. 37	27	19	17
Prince Edward Island	31	46	16	7
Nova Scotia	47	27	14	12
New Brunswick	30	36	21	14
Aushec	6	31	28	25
Ontorio	25	28	22	25
Manitoha	58	25	9	8
Saskatcheuran	77	16	4	4
Alberto	62	24	8	6
British Columbia	41	24	14	21

 TABLE 3

 Receipts from Sales of Milk and Cream as Percentage of Total Receipts on Farms Shipping Manufacturing Milk and Cream; Canada and Provinces, 1966

SOURCE: W. J. White and V. A. Heighton, The Structure of the Canadian Manufacturing Milk and Cream Industry, Canada Department of Agriculture, March 1968.

ers in New Brunswick, Quebec, Ontario and British Columbia. Quebec had the highest percentage of producers with at least one-half their income from dairy products (53 per cent); Ontario had the second highest (47 per cent). In the Prairie Provinces the great majority of producers derived less than one-quarter of their cash receipts from dairy products.

The special survey also showed that only 15 per cent of the producers with one to seven cow herds obtained most of their income from sales of cream and manufacturing milk (Table 4) but that dependence on dairy sales increased rapidly with increases in size of herd. This is as one would expect; in fact it emphasizes how small some producers are when the sales from seven cows or fewer produces over one-half of their cash income.

Sales per cow averaged just under 6,000 pounds from the enterprises shipping cream and manufacturing milk; sales in Saskatchewan averaged only

of Total Receipts, by Number of	of Cows Mil	ked, Canad	a 1960	
Number of Cows Milked	Less than 25%	25-49%	50-74%	75-100%
		(perce	intage)	
1 7	65	20	8	7
1 - <i>7</i>	22	37	24	17
8 - 17 18 - 25	10	27	31	32
76 <b>-</b> 50	. 10	18	27	45
Over 50	. 11	11	24	55

TABLE 4

Receipts from Sales of Manufacturing Milk and Cream as Percentage of Total Receipts, by Number of Cows Milked, Canada 1966

Source: As with Table 3.

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4,084 pounds per cow. Low yields per cow help to explain low incomes from milk production. Nearly one-half of all non-fluid shippers milked by hand; only 36 per cent of producers uses artificial insemination; only 37 per cent had either a bulk or can cooler. The data of Table 5 tell the sad story of the low level of technology on most non-fluid dairy farms. These facts must be borne in mind when discussing future dairy policy.

on Manufacturing Milk and Cream Enterprises, by Province 1966										
	Per cent of dairy farms									
Farms Using	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Can.
Electric milking machines	42	30	51	63	74	21	14	41	47	54
Pipeline milker	5	1	5	2	5	1	x	2	4	3
Bulk Tank	1	x	2	13	12	х	x	2	10	8
Can Cooler	20	12	15	40	34	13	6	15	28	29
R.O.P. or D.H.I.A	. 14	4	7	7	7	4	4	4	7	6
Artificial Insemination	72	52	41	24	59	35	26	35	64	36

TABLE 5 Levels of Dairy Technology: The Incidence of Modern Equipment and Practices on Manufacturing Milk and Cream Enterprises, by Province 1966

\* Less than one per cent.

SOURCE: W. James White, "The Adoption of Modern Dairy Practices," Canadian Journal of Agricultural Economics, Vol. 16, No. 1, p. 30.

Those producers who have small or medium sized dairy enterprises and do not have other enterprises to provide reasonable net farm incomes represent the hard core of the dairy income problem. To increase their dairy incomes requires both managerial skills and enough capital to enlarge the herd to at least 25 to 30 cows and output per cow to at least 9,000 pounds per year. This is not a feasible solution for the majority, given supply and demand conditions. Even since 1966, the year on which much of the analysis in this section has been based, large numbers have left the industry altogether. Between 1966-67 and 1968-69, 25,000 dairymen producing less than 50,000 pounds of milk went out of production and another 25,000 producers were cut off direct payments from the Canadian Dairy Commission and most of them presumably are no longer shipping milk or cream. It is not surprising that the rate of change has slackened in the past year.

Those producers who currently have quotas of 12,000 to 50,000 pounds are less dependent on dairy income than the shippers sampled in 1966. Over 50 per cent of these small producers derive less than one-quarter of their income from milk and cream sales (Table 6); three-quarters of them derive less than one-half of their income from dairy sales. One-tenth of all these quota holders had year-round off-farm employment and nearly 20 per cent had some off-farm employment.

Region	Less than 26%	26–50%	51-70%	More than 70%	Total
Maritimes Quebec Ontario Prairies British Columbia	842 1,788 2,402 16,317 77	1,020 2,164 1,477 3,516 52	661 2,258 656 1,118 24	625 3,200 877 1,142 39	3,148 9,410 5,472 22,093 192
- Canada	21,486	8,229	4,717	5,883	40,315

TABLE 6
Number of Farmers with Quotas of 12,000 to 50,000 Pounds by Per Cent of Farm Cash Receipts from Dairy Products, Canada, 1968–69

SOURCE: Unpublished Canadian Dairy Commission data; distributions adjusted for about 3,000 shippers who did not provide income information.

To quote from the conclusions of the Perkins Study done for the Task Force.

1. Much of the primary dairy sector is characterized by poor management, archaic technology and small scale enterprises but the majority of producers with such enterprises do not depend on them as a major source of income and the dairy enterprise makes use of pasture, labour and building resources which have low opportunity costs (i.e. low returns in the next best use, such as producing beef or other livestock.) However in much of Quebec and in marginal farming areas in other provinces, low output dairy enterprises make a significant contribution to the relatively low total incomes of farm families. Moreover on most enterprises shipping between 50,000 and 150,000 pounds milk equivalent, production cannot be based on otherwise under-utilized resources and production costs are high. The demands of the medium to large dairy enterprise limit the ability of the operator to take off-farm employment.

2. The rate of structural change in the sector has been extremely high and we do not expect that this rate of change will abate. In our estimation there are currently no more than 15,000 producers shipping less than 50,000 pounds who are experiencing serious income problems.<sup>8</sup> In addition, there may be up to 25,000 larger shippers who are facing income problems but generally less severe problems. Among cream shippers there is a marked trend to convert to shipping whole milk or quit dairying and we expect that cream shipping will virtually disappear during the 1970's, with the possible exception of Saskatchewan.

The estimate of 40,000 milk producers "facing problems" out of 110,000 non-fluid shippers may be low. In the Chapter "The Low Income Sector", it is estimated that a minimum of 100,000 farm families were living below the poverty line in 1966 and it could well be that at least one-half of them are milk producers.

<sup>\*&</sup>quot;There are approximately 19,000 shippers in this class in the current dairy year who have depended on sales of milk and cream for more than 25 per cent of their farm cash income. Allowing for off-farm employment earnings and other sources of family income (including pensions and income received by other members of the farm family) the estimate of 15,000 producers in this class in poverty was considered a reasonable upper limit." (Part of quote from the Perkins Study).

#### PROJECTIONS TO 1980

Projections as to future consumption of milk in all forms depend upon the assumptions made and type of analysis used. Two forecasts were made for the Task Force. The study by Perkins forecast an increase of nine per cent in total Canadian consumption in the 15 years 1964-66 to 1980; a Canada Department of Agriculture<sup>6</sup> study forecast a 14 per cent increase in the same period. The main source of this fairly modest discrepancy arises from differences in the treatment of Two-Percent fluid milk. The rate of market growth of Two-Percent sales has been rapid; in Toronto it accounted for 11 per cent of total fluid milk sales in 1958 and for 37 per cent in 1967. As a proportion of all commercial sales of fluid milk in Canada, Two-Percent milk accounted for 15 per cent in 1964 and 24 per cent in 1967. In provinces east of Ontario it was ten per cent or less in 1967, while in other provinces it ranged from 19 per cent in Saskatchewan to 34 per cent in Ontario.

The Perkins estimates appear in Table 7. They indicate that between 1964-66 and 1980 per capita consumption of milk in all forms will decline by 18 per cent but that total consumption will rise by nine per cent because of population growth. Cheese consumption by 1980 is expected to be more than double that of 1964-66 but total consumption of other milk products will fall. To the dairy farmer and indeed to many milk processors, this is a depressing but nevertheless realistic forecast.

The Perkins report projections of supply appear in Table 8, based on the assumption that current policies would continue to 1980. Between 1963 and 1969, the number of milk cows in Canada declined by 11 per cent and output per cow rose by 9 per cent. These data must be treated with caution: "Milk cows" may be defined quite arbitrarily; "output per cow" and "sales per cow" are not identical. The unfavourable comparisons of Canadian output per "milk cow" with that of milk cows in other countries may be partly because of different interpretations as to what constitutes a "milk cow."

## THE PROCESSING-DISTRIBUTING SECTOR

The processing-distributing sector of the Canadian dairy industry in 1966 consisted of almost 1,300 factories or plants owned by nearly half as many companies. They employed about 33,000 persons and had a total "value added" of approximately \$350 million. A large part of the sector is still made up of small local fluid milk distributors and of companies processing butter or cheese in small single plants. Large scale and multiproduct plants, operated

<sup>&</sup>quot;Supply-Demand Projections to 1980," CDA, 1968. In this publication, consumption in all forms was forecast to be 19.9 billion pounds compared with the forecast of 18.8 billion in Table 7. Because consumption of butter (the main form in which milk is consumed) varies considerably with price, one must make his assumptions explicit as to price. If butter prices remain at 1969 levels (relative to margarine only) per capita consumption in 1980 might be 15 pounds rather than 13.1 (Table 7). This higher figure would account for 1.1 billion pounds of milk, or exactly the difference between the CDA and the Perkins forecasts.

Per Capita Consumption in Pounds of Products	1964-66	1967	1975	1980	1980 as per cent of 1964-66
			(pounds)		
Fluid milk <sup>1</sup>	275.0	267.5	246.0	233.0	84.7
Butter	18.5	16.9	14.0	13.1	70.8
Cheese	9.0	9.9	12.8	14.4	161.1
Other milk products <sup>2</sup>	114.4	114.5	102.8	99.6	89.4
Total Consumption in Milk Equivalents	1964-66	1967	1975	1980	1980 as per cent of 1964-66
		(1	million pound	ds)	
Fluid milk <sup>1</sup>	5,263	5,325	5,703	5,943	115.3
Butter	8,372	7,933	7,773	7,973	95.2
Cheese	1,714	1,971	2,945	3,653	213.1
Other milk products	2,178	2,337	2,438	2,594	119.1
- Total <sup>3</sup>	17,230	17,149	17,809	18,831	109.3

#### TABLE 7 Per Capita and Total Consumption of Dairy Products, 1964-66 1967, and Projections for 1975 and 1980, Assuming Constant Real Prices

<sup>1</sup> Includes fluid milk sales and milk consumed on farms; excludes Newfoundland population. Cream included in other milk products.

<sup>2</sup> In milk equivalents.

<sup>3</sup> Adjusted to avoid double counting sales of Two-Percent milk and the butterfat separated off in preparing the product. Adjustment in terms of millions of pounds of whole milk amounted to: 297 (1964-66), 416 (1967), 1,050 (1975), and 1,332 (1980)

Source: Perkins.

	C	ow number	rs	· 5	ales per co	rw	Milk Sales		
Region	1964-66	1975	1980	1964-66	1975	1980	1964-66	1975	1950
<u></u>	(000's)			(Tbr.)			(mi	llion pour	dı)
Atlantic	149	107	100	5,504	7,300	8,000	\$20	796	800
Ouchec	1.047	935	873	5,510	7,300	8,200	5,769	6,826	7,159
Ontario	915	\$17	776	6,107	8,400	9,200	6,367	6,863	7,139
Manitoha	107	13	63	4,715	7,500	8,200	771	622	558
Saskatchewan	175	45	34	4,114	7,100	7,100	720	320	265
Alberta	260	147	125	5,363	8,300	8,800	1,393	1,220	1,100
British Columbia	86	77	72	9,356	11,100	11,700	805	\$55	842
Canada	2,822	2,213	2,048	5,907	7,907	8,722	16,672	17,502	17,863

TABLE 8	**
Projected Changes in Milk Cow Numbers	, Yield Levels, and Milk Sales
by Regions, 1975 at	nd 1980

No allowance is made in this series for the overestimation of sales in the period 1964-66 due to double counting of Two-Percent milk.

SOURCE: Perkins.

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by major corporations which sell a wide range of dairy products and have their own brand names are integrating the sector across product lines. The degree of concentration in the sector is increasing markedly. Apart from the fluid milk distributors, which in size and number vary largely in proportion to the distribution of population, the processing sector is located mainly in Ontario and Quebec. Nearly three-quarters of all processing plants are in Quebec and Ontario and these provinces account for a similarly large proportion of total sector sales.

The regional distribution of plants classified according to the processing product differs considerably. Of the 545 butter plants operating in 1965, 35 per cent were in the Western provinces and 60 per cent in the Central Provinces, whereas of the 202 cheese factories, 92 per cent were located in Ontario and Quebec. Condenseries and processed cheese plants were also heavily concentrated in the Central Provinces, while ice cream manufacturing, which is commonly associated with the pasteurizing operation, was more widely distributed across the country.

In 1965 average output of butter per plant was 264,000 pounds but ten per cent of the plants produced 40 per cent of the butter. The decline in farm-separated cream production has forced small local creameries either to go out of business or to collect cream from a wider geographic area, thus increasing their costs. Offer-to-purchase programs for skim milk powder in the 1950's and again in recent years have favoured combined butter-powder plants over creameries and there has been a rapid structural change from creameries to industrial milk plants receiving whole milk. Today most butter is made from whole milk. Recent studies have indicated that processing costs fall rapidly (per unit) with increased output. A synthetic model employed in a study undertaken for the Canada Department of Industry indicated that processing costs alone declined from 8.9 cents per pound for creameries with an output of 250,000 pounds to 5.2 cents for creameries with an output of 1 million pounds of butter. For plants using whole milk, the processing costs allocated to butter production were estimated to decline 5.4 cents per pound at an output of 750,000 pounds to 2.5 cents at an output of 4 million pounds.7 Above an output of 700,000 pounds it was estimated that cream processing would result in higher unit costs than whole milk processing.

A study in Alberta based on the operations of plants in 1966 revealed similar substantial economies of size; plants with less than 200,000 pounds output had average processing costs of over 11 cents per pound of butter, wheareas plants producing more than one million pounds had unit costs below five cents.<sup>8</sup> The study provided the interesting information that the small creameries through competition for supplies paid more per pound of butterfat input than the larger butter plants.

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<sup>&</sup>lt;sup>1</sup>Economies of Scale in Canadian Butter and Skim Milk Powder Production, a study undertaken by Stevenson and Kellogg Ltd., for the Canada Dept. of Industry, 1967.

<sup>&</sup>lt;sup>4</sup>Walter B. Rogers and Horace S. Baker, "An Economic Analysis of the Alberta Butter Industry," Canadian Journal of Agricultural Economics, Vol. XVI, No. I.

Much the same conclusions about economies of size in butter manufacturing were drawn in a recent Quebec study.<sup>9</sup> This study also found that the investment costs required to receive cans were much higher than those required for bulk receiving. In the case of cheese, the Quebec study indicated that economies of size, though evident, were much less marked in cheese made from raw milk than in butter production. Processing costs per pound averaged 7.2 cents for plants with less than 200,000 pounds output and 6.3 cents for plants with output of 600,000 pounds and over.

Changes in technology and industrial structure have favoured large volume plants. New forms of packaging and merchandising and changes in competition arising out of the development of the retail food chains have had a direct impact on the number and size of these processing firms. Condenseries, process cheese plants and the larger ice cream plants, which typically have been operated by major corporations with wholesaling operations, are faced with countervailing power of the retail chains.

The development of retail chains has had an important impact on fluid milk distributors most of which were typically small firms serving local markets, generally through home delivery routes. The retail chains have offered consumers lower prices for milk and other dairy items and a greater choice of container sizes. Competition at the retail level has been heightened by the emergence of milk specialty stores in many major cities which, by means of high volume sales and longer store hours, offer milk in two and three quart jugs at lower prices. The large capital requirements for modern pasteurizing and bottling plants, the need to meet the demand for diversified sizes and types of containers and types of products and the bargaining strength of the supermarkets which are accounting for an increasing proportion of their sales have combined to put great pressure on dairies to expand their businesses or to sell out to other distributors.<sup>10</sup>

The degree of concentration in the ownership of dairy plants in Ontario (which "is less than in any other province, except perhaps Quebec"<sup>11</sup>) has increased considerably in the post-war period; the "Big Three" (Silverwoods, Bordens and Dominion Dairies) accounted for 30 per cent of sales of fluid milk, cream and chocolate drink in 1945 and for 35 per cent in 1961; more significantly, over the same period, the number of independents required to account for 15 to 20 per cent of total sales declined from about 55 to 12 firms. Many independents were acquired by or merged with larger dairies.

Current trends indicate that in the long run the processing-distributing sector will be completely integrated, producing most of the range of dairy

"See Duncan Allan's excellent paper, "Concentration and Competition in Ontario's Fluid Milk Industry," Ontario Economic Review, November 1965.

<sup>\*</sup>Gilles Lebel and Armand Lacasse, Economic Study of Manufacturing Costs of Dairy Products in Quebec, 1967.

<sup>&</sup>quot;The ultimate threat posed by the retail chains to the dairies is that the former will integrate back into the processing field as Loblaws has done in Ontario and as Safeway has done in the West. Such integration along with growth in independent jug stores could result in the traditional dairies losing their markets altogether. Some large dairy companies have entered the jug store markets themselves.

products and operated by a small number of large corporations and co-operatives. At the present stage the degree of competition is high and margins low.

In 1957, the Royal Commission on Price Spreads of Food Products found no evidence that the rate of return on net worth in this sector was abnormally high. A similar conclusion can be drawn from data for 1963 which indicate that the profit on net worth after tax for corporations manufacturing dairy products averaged 9.5 per cent and was below the average of other types of corporations. A Task Force survey of agribusiness produced similar conclusions for more recent years.

When provincial milk boards administer retail prices<sup>12</sup> they effectively determine the marketing margin for fluid milk products. It is likely that these margins are set to cover the costs of the least efficient distributors and thus serve to reduce price competition and to encourage advertising and other forms of promotion of questionable value to consumers and producers. The most obvious instance of such provincial protection is in Alberta where identical store and home delivery prices for fluid milk products prevent consumers from having the option of lower prices through store purchases. The existence of fixed margins for distributors provides considerable incentive for backward integration by chain stores into this field.

There has been a similar problem in Ontario for manufacturing milk products. In 1968 the Canadian Dairy Commission publicly stated that it viewed a price of \$3.54 per 100 pounds of manufacturing milk as the producer level equivalent of the support prices of 63 cents and 20 cents for butter and powder respectively and that it was up to the provinces to secure this manufacturing milk price. The Ontario Milk Marketing Board was the only provincial authority to fix a price of \$3.54 for manufacturing milk and by this action it effectively set the margin for processors. Processors with high operating costs have undoubtedly found this margin too low, whereas the more efficient processors may be able to gain profits which would not exist if margins were determined by market competition.<sup>13</sup>

Federal price supports for dairy products have undoubtedly reduced shortrun uncertainty for processors and to this extent the support programs have lowered processing costs. On the other hand the Federal programs have increased processing costs because seasonally stable prices encourage seasonal instability of milk and cream production, which in turn results in excess plant capacity throughout most of the year and in higher costs for processing. By contrasts, the year-to-year vagaries of Federal dairy programs have been a source of uncertainty for plant planning and investment. Federal and provincial policies have contributed to heavy investment in butter-powder plants in recent years. The current costly surplus of skim milk powder is a result.

<sup>&</sup>lt;sup>12</sup> In the Prairies, Quebec and parts of the Atlantic region.

<sup>&</sup>lt;sup>11</sup>This corresponds to the position taken by G. R. MacLaughlin, Chairman of the Ontario Milk Marketing Board who argues "... our processing industry for industrial milk is behind the times... Ontario processors maintain they need a gross margin of at least 75 cents per cwt.... However, in some other areas of Canada and the northern United States, 40 cents to 50 cents is accepted as a satisfactory gross margin." Reported in Ontario Milk Producer, Nov. 1969.

#### FLUID MILK SUBSTITUTES

Substitutes for *fluid milk* (i.e. regular whole milk) are either (1) *filled milk*, a product that contains non-fat milk solids in either fresh skim milk or reconstituted skim milk combined with a vegetable fat in place of milk fat or (2) *synthetic milk*, a product in which no component of natural milk is used.<sup>14</sup> Because of lack of experience with the marketing of either filled or synthetic milk in Canada, the Task Force is limited to an analysis of experience in various states of the United States and to conjecture concerning developments in Canada. Appendix B to this chapter gives considerable detail concerning the American experience. In this section<sup>15</sup> we merely summarize some of the findings discussed in Appendix B and then go on to assess the possible implications of filled and synthetic milks to the Canadian dairy industry and Canadian dairy policies.

#### Filled and Synthetic Milk in the United States

In the United States, the only fat used in both filled and synthetic milk is coconut oil, which has more saturated fatty acids than butterfat has. A survey of consumers in California and Arizona indicated that over half of those interviewed were of the mistaken opinion that filled milk contained less cholesterol than did regular milk and an even larger proportion held the mistaken belief that there were fewer calories in filled milk than in regular milk.

Through its Federal Milk Orders, the United States Department of Agriculture has insisted that the non-fat milk solids used in filled milks be paid for at Class I (the highest) prices. A study by USDA indicated that the cost of ingredients, per U.S. half-gallon, would be 27.2 cents for regular fluid milk, 20.7 cents for filled milk and 13.0 cents for synthetic milk. Several other studies gave rough confirmation to these differentials (See Appendix B of this chapter). Filled or synthetic milks have been sold in at least 20 states but only in Hawaii and Arizona have they taken over a substantial share of the market (Hawaii, 20 per cent, Arizona, 10 per cent). In Hawaii the retail price of filled milk is about 20 cents per half gallon (U.S.) less than that of regular fluid milk. The ability of filled and synthetic milks to take over part of the fluid milk market is not merely a matter of their price differentials compared with fluid milk. Promotional activities, length of time the new products have been available to consumers, and misconceptions about relative calorie and cholesterol contents, may be as important as the actual price differentials. In the United States, many states prohibit or regulate the sale of filled milk but few states have barriers to the production and sale of synthetic

<sup>&</sup>lt;sup>14</sup> Synthetic milk may contain sodium cascinate, a milk derivative, as an ingredient. However, in the United States the Food and Drug Administration considers sodium cascinate as not falling within the meaning of dairy products as defined by the Filled Milk Act.

as not falling within the meaning of dairy products as defined by the Filled Milk Act. <sup>15</sup> This section and Appendix B are drawn largely from work on the subject of milk substitutes done for the Task Force by Professor Marshall of the University of Guelph.

milks. Perhaps more important, the Filled Milk Act of the Federal government prohibits inter-state commerce in filled milk but not in synthetics. This Act is likely to be challenged in the courts and the whole legislative-administrative position for both filled and synthetic milks is in a state of flux.

# Assessment of the Possible Impact of Fluid Milk Substitutes in Canada

A discussion of the market development of fluid milk substitutes and their impact on the Canadian dairy industry can proceed only after making assumptions concerning legal and administrative restraints and relative ingredient costs of the competitive products involved.

## (a) Legal and administrative restraints

Most provinces have legislation or regulations prohibiting the blending of ingredients of dairy origin with those of non-dairy origin although in some provinces these restraints are ambiguous and subject to different interpretations.<sup>16</sup> The Ontario Edible Oils Act and the Quebec Dairy Products Act both seem to prohibit the manufacturing and sale of filled products. Changes in provincial legislation would be necessary before filled milk could take over very much of the fluid milk market.

Synthetic milk seems to be in the same position as does margarine in terms of provincial legislation.<sup>16</sup> Some provinces prohibit the manufacture and sale of substitutes but with exclusions made for individual products such as dessert toppings or coffee whiteners. Others permit the manufacture and sale of synthetic products under license. Although existing federal legislation does not prohibit the manufacture and sale of synthetic products, a restraint rests with the Federal Food and Drug Directorate pending their approval and development of nutritional standards.

### (b) Relative ingredient costs in Canada

Various estimates have been made of the relative ingredient costs of filled, synthetic, and fluid milk in Canada. These are, of course, based on assumptions concerning the pricing of solids-not-fat and regular milk, the butterfat differential and the prices of non-dairy ingredients. In general, prices of the non-dairy ingredients in filled and synthetic milk are higher in Canada than in the U.S. and the butterfat support level lower. Skim milk powder prices are similar in both countries. If skim milk used for filled milk is priced at Grade A or Class I prices, the fact that the Canadian butterfat differential is lower than in the United States would raise the value of the solids-not-fat component in Canada relative to that in the U.S.A.

The Ontario study<sup>17</sup> cites the ingredient costs of regular fluid milk at 15.47 cents per qt. (at \$6.00 per cwt) as compared to 13.12 cents per quart for filled milk using Grade A skim (8.05 cents per quart using skim milk

<sup>&</sup>lt;sup>16</sup>See The Impact of Edible Oil Products on the Dairy Industry, Farm Economics, Statistics, and Co-operatives Branch, Ontario Department of Agriculture and Food, June, 1968, Pages 5, 7, 35, 36.

<sup>&</sup>quot;The Impact of Edible Oil Products on the Dairy Industry, op. cit.

powder) and 9.36 cents per quart for synthetic milk. Perkins<sup>18</sup> estimated the ingredient costs of filled milk (using liquid skim) at 11.71 cents per quart and of synthetic milk (using soya flour) at 5.27 cents per quart.

Table 9, which indicates the relative cost of ingredients in the United States and Canada, has been constructed from the U.S.D.A. study previously cited (with U.S. costs converted to an imperial quart basis) with particular assumptions concerning relative ingredient costs in Canada. One assumption is that the non-fat component of filled milk would be priced at Class I or Grade A prices; this is a reasonable assumption given the present milk control legislation in the different provinces.

	Filled	I Milk				
	or Grade A Fluid Skim Milk		Synthetic Milk		Whole Milk	
-	U.S.	Canada	U.S.	Canada	U.S.	Canada
		(Cci	nts Per Im	perial Quart	)	
Fluid Skim <sup>1</sup>	9.26	10.58			9.26	10.58
Vegetable Oil <sup>2</sup>	1.65	1.88	1.65	1.88	—	-
Milk Fat <sup>1</sup>					7.32	6.75
Protein (soy Protein) <sup>2</sup>	-		3.47	4.16		
Emulsifiers, Stabilizers	1.71	1.71	1.71	1.71		
Sweeteners, body agents	-		1.09	1.09	-	-
Cents per qt	12.62	14.17	7.92	8.84	16.58	17.33

TABLE	9
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Estimated Ingredient Costs for Filled, Synthetic and Regular Fluid Milk in Canada

1 Based on a fluid price of 56.56 cwt. (3.5%) with a butterfat differential of 74 cents in Canada and on a fluid price of 56.35 US/cwt. with a butterfat differential of 80 cents in the U.S.A.

\*Assuming prices of vegetable fats and soy proteins 20 per cent higher in Canada than in the U.S.

SOURCE: Data for U.S.A. converted from Table B-2 (Appendix B of this chapter); data for Canada estimated by R. G. Marshall.

Pricing the non-fat component at powder prices would widen the cost differential between regular milk and filled milk by approximately four cents per imperial quart.

Other influences in Canada could be: (1) the possible application of a 12 per cent federal sales tax to filled and synthetic products (there is currently a 12 per cent federal sales tax on margarine) and (2) the fact that partly skimmed milk, offered at a price lower than regular milk, has become more widely accepted in Canada than in the United States. The latter would tend to narrow the price advantage of filled or synthetic milk.

<sup>18</sup> Canadian Dairy Policies Appendix IVA, p. 152.

## Policy Implications of Milk Substitutes

#### (a) Filled milk

Assuming that legal and administrative barriers to the manufacture and sale of filled milk are removed or circumvented in particular provinces and assuming that the pricing of the solids-not-fat component of filled milk falls under provincial jurisdiction with respect to classified pricing, then the price differential between regular fluid milk and filled milk will depend upon two policies: (1) federal price support policies concerning butterfat and (2) provincial policies on the pricing of solids-not-fat. The latter might be set by the provincial milk administrative body at regular fluid skim prices, or alternatively, manufacturers might be free to use skim milk powder at market prices. These would be set currently by the offer-to-purchase level. High butterfat prices and low solids-not-fat prices would increase the differential between regular fluid milk and filled milk and expand consumption of the latter.

### (b) Synthetic Milk

Policy implications concerning the completely synthetic product are of a somewhat different order. Again assuming technological improvement with respect to taste and other product attributes and assuming that nutritional and composition standards are established such that a relative cost advantage still accrues to the synthetic product, displacement of fluid sales by a non-dairy product presents a threat to both provincial classified pricing arrangements and to federal dairy policies.

The implications concerning displacement of dairy resources, the loss of revenue from fluid milk sales, the restraints on the level of prices for Grade A milk and the added burden of disposal of manufacturing milk products are self-evident. In addition, although future developments in this regard are, as yet, completely hypothetical, should legislative and administrative restraints on the production and sale of synthetic milk (e.g. outright prohibition, taxation, restrictive composition and labelling regulations) not be imposed or prove to be ineffective, the competitive price level of solids-not-fat as established at both provincial and federal levels could be completely undermined.

In the projections of Chapter 10 we have assumed that fluid milk substitutes would have minimal impact by 1980. However there is potential for substantial change and this assumption could be entirely too optimistic from the point of view of the milk industry.

#### THE PRESENT SITUATION—A SUMMARY

There does not appear to be any great advantage to be gained from duplicating here a detailed review of the dairy policies of the past few years; the Perkins study for the Task Force reviewed them in some detail to 1968-69. Instead, we shall attempt to put the present situation into perspective and in doing so also put current dairy policies into perspective and then indicate promising approaches in policy.

#### Consumption and Promotion

Per capita consumption of milk in all of its forms has been falling for many years and there appear to be no likely developments which would reverse that trend. On the other hand it might easily be speeded up by filled or synthetic milks or by larger butter-margarine price differentials. In the export market it appears that only cheddar cheese offers any prospect of exports and these prospects are tied almost entirely to the United Kingdom market. Devaluation of the pound sterling in 1967 affected the market adversely; entry of the UK into the EEC is likely to bring even more unfavourable effects. Thus dairymen, like wheat producers but in contrast to beef producers, face gloomy prospects on the demand side.

#### Fluid Milk Producers

There are about 20,000 fluid milk producers mostly with large dairy enterprises and specializing in milk production (other enterprises, if any, are minor).

The prices these farmers receive for the milk they sell for fluid consumption (about 70-90 per cent of their production) is much higher than for industrial milk because of provincial government regulations. These regulations, along with the high cost of hauling fluid milk for long distances, give fluid milk producers such a favoured (monopoly) position that they apparently require no further government assistance.

The fluid milk producers affect the industrial milk sector by producing in excess of market requirements for fluid milk. They gain from the offer-topurchase programs of the Canadian Dairy Commission by receiving the local equivalent of 65 cents per pound for butter and 20 cents per pound for (spray) skim milk powder.<sup>19</sup> They can receive CDC direct payments subsidies but only on their output in excess of 125 per cent of their fluid milk sales.

The differential between fluid milk prices and industrial milk prices increases the gross revenue of milk producers as a whole for any given level of production. This is one of the two-price systems discussed in Chapter 12 on Marketing Boards.

The negotiability of fluid milk quotas in British Columbia and Ontario and the use of an organized system of pooling have brought an increased level of order and understanding to fluid milk production and marketing in those provinces.

<sup>&</sup>lt;sup>10</sup> The question of "hold-backs", which have become sizeable is ignored. These are sums held back to assist in subsidizing exports of dairy products. In 1969-70, the hold-backs amount to 26 cents per hundredweight on quota milk and 52 cents on non-quota milk. Export subsidies on skim milk powder and cheese are expected to amount to about \$45 million in 1969-70, about double the sum collected in hold-backs. Thus hold-backs may have to be increased.

The favoured position of fluid milk producers is threatened by substitutes but substantial adverse effects should not be experienced before 1972 at least.

#### Fluid Milk Distribution

The number of distributor firms has been falling rapidly, partly because of the economies which accompany larger operations and partly because of relaxation in the regulations by provincial governments' regulatory agencies. There is, fortunately, a tendency to reduce those parochial influences which prevented expansion and amalgamation of firms. The process of amalgamation must include co-operatives as well as corporate enterprises. Some provinces continue to establish farm-consumer margins.

Far-reaching changes are coming about in kinds of containers, in dairyretail vertical integration and in multi-product operations and these should not be discouraged by provincial regulations.

#### Federal Government Subsidies

In 1969-70 the Canadian Dairy Commission operates an offer-to-purchase program for butter at 65 cents per pound and for skim milk powder (spray) at 20 cents per pound.

These prices:

- (a) should allow plants to pay \$3.60 per hundredweight of milk,<sup>20</sup>
- (b) keep domestic production and consumption of butter in balance or with a very slight surplus of production,
- (c) encourage farmers to sell whole milk rather than cream,
- (d) encourage processors to expand butter-powder facilities and to contract creameries,
- (e) produce a surplus of 220 million pounds of powder in 1969 (production 380 million, consumption 160 million pounds).

The data of Table 10 indicate that the major cost of the dairy subsidy has been through direct payments which in 1969-70 amount to \$1.25 per hundredweight. This payment is made on most industrial milk<sup>21</sup> and cream. In the past year the rapidly rising cost of the powder price support has made price support operations almost as important as the direct subsidies. Funds are shifted to the price support operation by substantial "hold backs" retained by the CDC from the direct payments.

The treasury payments for dairy programs far exceed those provided to any other sector of agriculture and now approach \$1,000 per shipper of cream or manufacturing milk per year. Compared with these subsidies the Temporary Wheat Reserves Act (\$35 to 65 million), Feed-Freight Assistance Act (\$20 million), ARDA and other agricultural programs appear small.

<sup>&</sup>quot;This price is realized in Ontario but the price in other provinces is normally lower.

<sup>&</sup>lt;sup>n</sup> Paid only for milk and cream for which the producer has a CDC subsidy eligibility quota. There are a number of CDC rules concerning minimum and maximum outputs which are eligible for subsidy and concerning transfer of subsidy eligibility quotas. There are also regulations concerning hold-backs. (see Footnote 19)

	1962-3	1963-4	1964-5	19656	19667	1967-8	1968-9	1969-70
			(1)	nousand do	llars)			
Oirect payments1	58,796	45,133	38,229	44,597	93,861	98,229	101,105	88,7004
Dffer to purchase losses <sup>2</sup> Export subsidization	3,223 2,838	2,922 876	3,014 1,005	664 2,541	1,443 7,770	4,784 10,1533	4,941 30,902	7,0004 47,0004
- Total	64,857	48,931	42,248	47,802	103,074	113,236	136,948	142,0004

TABLE 10

Total Treasury Costs of Dairy Programs, Canada, 1962-63 to 1969-70

Includes all direct subsidies

2Losses for 1965-6, 1966-7 and 1967-8 include estimates of losses on end of year inventories.

<sup>3</sup>Total export subsidy fund including any unused portion which would be paid as a direct subsidy bonus to producers.

4Canadian Dairy Commission estimate. Other years do not include allowance for program administration costs

SOURCE: Annual Reports, Agricultural Stabilization Board and Canadian Dairy Commission.

#### The Crisis in Skim Milk Powder

The bigger the CDC losses on powder, the less is available for its direct subsidy program, since the CDC budget is fixed. Losses on powder are growing rapidly and this trend cannot be reversed without a drastic reduction in powder price supports. This might slow down the trend from cream shipments to whole milk shipments but will not reverse it.

In order to bring powder supplies into balance with demand, milk production would have to decline by as much as 2.5 billion pounds, which might then involve butter imports of up to 100 million pounds per year. In other words we now find ourselves in one of these awkward situations of jointproduct output in which one of the products is in vast over-supply. We continue to buy powder at 20 cents per pound, store and transport it and sell it to non-Canadian users at five to eight cents per pound. With production of 380 million pounds and consumption of 160 million, the outlook is indeed serious and deteriorating.

#### Protection

While direct payments from the treasury are the largest form of subsidy to milk producers, they are not the only one. Embargoes on the importation of all important milk products except for specialty cheeses resulted in Canadian consumers paying about \$100 million more in 1967 than would have been the case if imports had been permitted without tariffs. This calculation is by no means clear-cut. Column 4 of Table 11 shows one way of calculating the consumer cost of price supports for butter; the price differential between Canadian and New Zealand butter (in London) is multiplied by Canadian consumption and the consumer cost shown to be \$77 million in 1967. This calculation assumes that we could have imported our entire requirements without affecting the New Zealand prices (or at least world market prices); this overstates the consumer cost because such an increase in imports would have strengthened world prices. This calculation also assumes constant con-

## CANADIAN AGRICULTURE IN THE SEVENTIES

Year	1st grade, Montreal	New Zealand finest, London	Montreal price as % of London	Montreal price less London price multiplied by Canadian domestic disappearance
	(c per lb.)	(c per lb.)	%	(\$millions)
1950	56.9	21.8	261	107.5
1951	62.6	28.0	264	102.9
1952	61.6	30.6	201	92.8
1953	60.0	37.1	162	70.2
1954	59.3	44.8	133	45.2
1955	58.9	44.4	133	46.1
1956	57.5	38.5	149	62.7
1957	59.5	35.2	169	81.8
1958	63.1	28.6	221	112.6
1959	63.6	41.1	155	71.2
1960	63.5	38.6	164	75.4
1961	63.0	33.5	188	88.7
1962	54.9 (62.9) <sup>1</sup>	40.2	137 (156)1	48.8
1963	50.8 (62.8)	44.0	115 (143)	24.6
1964	51.8 (63.1)	45.2	115 (140)	24.2
1965	54.3 (63.9)	44.9	121 (142)	34.3
1966	59.0 (62.0)	40.7	145 (152)	65.2
1967	62.5	40.0	156	77.5

 TABLE 11

 Producer Protection and Consumer Cost of Dairy Supports Butter 1950-67

<sup>1</sup> Based on support prices to producers. Other subsidies served to reduce wholesale and retail market prices between April, 1962 and March, 1965.

SOURCE: Dairy Statistics, D.B.S. Cat. 23-201, and data supplied by the Canada Department of Trade and Commerce.

sumption in Canada, whether of Canadian butter at 62.5 cents or New Zealand at 40 cents per pound and this assumption causes understatement of consumer cost. Given the present and prospective dairy surpluses in Western Europe it appears that Table 11 understates the size of the consumer subsidy in recent years.

To the consumer cost of butter embargoes must be added those for cheese (estimated by Perkins at \$10 million in 1967) and skim milk powder, making a total of about \$100 million in 1967. Let us be clear on one point concerning subsidies whether they come from the treasury or by way of trade protection—subsidies are not to be condemned merely because they are subsidies. If they were, of course, almost all government action would stand condemned because one way or another almost every industry and person received some form of direct or indirect subsidy from government action. The important questions are not "Are they subsidies?" but "Are the purposes of the subsidy of high priority?" Who benefits and by how much? Are benefits worth the cost? and "Are the methods of subsidizing the most effective way to achieve the desired goals?" It appears that the present program of the Canadian Dairy Commission cannot meet the test imposed by these questions. If the purpose of the subsidies is to expand or strengthen an industry in which Canada has a competitive advantage over other countries, then manufactured milk products are obviously the wrong commodities to have chosen. If the purpose is to provide a larger income for those with very low incomes, then the dairy subsidy program is an extremely expensive and inefficient way to do so. If the purpose is to promote adjustment among producers, then the CDC policy of opposition to trade in subsidy eligibility quotas has been undesirable. If the purpose has been to strengthen the processing-distributing phase then provincial and federal policies have been spotty—some good, many bad. Finally if the purpose has been to create an industry capable of withstanding the threats of fluid milk substitutes and of offsetting a continuing decline in per capita consumption, the results do not appear particularly favourable.

#### Industrial Milk Producers

There are about 110,000 producers of cream and industrial milk. While some of these are efficient low-cost producers, the majority are so small and have adopted so few of the modern techniques available that the industrial milk producing sector cannot be desribed as a modern, efficient part of Canadian agriculture. Canadian industrial milk producers could not compete with producers in New Zealand, Australia, Denmark and the Netherlands, partly at least because of climatic disadvantages, but also because of technological factors (See Table 5 above). Compared with producers in France and West Germany and much of the United States, Canadian industrial milk producers compare fairly well. Yet it is not greatly encouraging to be able to say that one is at least as good or perhaps better than those who are lowest on the scale. Thanks largely to her policy of subsidization the EEC has a dairy surplus of unpleasant proportions. In fact the world surplus of dairy products is almost as serious as that of wheat especially when one considers the more difficult storage problems involved. World prices for butter and powder may be as distorted by subsidies as are wheat prices.

The basic question facing those connected with the dairy industry in Canada is "Are we to continue to rely upon protection and subsidies to remain self-sufficient in milk production?" This assumes, rightly, that any thought of exporting dairy products without substantial subsidies would be a non-starter (except for our best cheddar cheese). In the case of milk production the notion of a continental market (U.S.-Canada) is neither particularly appealing nor likely, and would have fewer benefits for both sides than would free trade in livestock, feed, oilseeds and manufactured inputs. An open U.S. market for Canadian cheddar cheese would be attractive but it is perhaps unrealistic to anticipate any rapid and substantial opening of the U.S. cheese market just as it is for the Canadian butter market.

The number of producers has declined very rapidly in recent years, with an estimated decline of 55,000 shippers in two years. In 1968-69 the Commission initiated its first major move toward quota reallocation by granting larger quotas to about 37,000 shippers of whom the great majority had had quotas

in excess of 50,000 pounds. The increment in quota which they received was equal to the excess of their shipments over their quota in 1967-68 up to a total quota limit of 300,000 pounds. In 1969-70 the maximum quota eligibility was increased to 400,000 pounds for one individual and to 700,000 when several persons own the dairy enterprise. The minimum quota is 12,000 pounds for existing shippers and 100,000 pounds for new shippers.

#### The Poverty Problem Among Milk Producers

To the extent that dairy programs have been implemented to improve the incomes of many poor farmers, current subsidies (which are proportional to market sales) are an indirect and inefficient means of dealing with the problem of rural poverty. Low income farmers are much less closely associated with dairying than they used to be and the Dairy Commission now places little emphasis on poverty problems as a rationale for its policy. Nevertheless, a significant proportion of industrial milk and cream producers would face serious income problems without present subsidies.

As discussed in Chapter 16, the Low Income Sector, it may well be that when all farm and non-farm alternatives for a 55-year-old low-income milk producer have been considered, the most desirable course for him and for the economy would be for him to remain more or less as he is in milk production. This would probably not be the case for younger men and certainly not for their children. As we have suggested in Chapter 16, perhaps the best course is for him to make a few minor changes and for ARDA to stand prepared to purchase his farm (and lease back the house) when he can no longer operate it.

#### Efficiency in Processing Industrial Milk and Cream

The number of dairy processing and distributing plants declined from about 1,700 in 1961 to 1,300 in 1966 and probably to about 1,100 in 1969—a rate of decline paralleling that among producers. A great deal more consolidation is necessary. The major issue here is whether federal and/or provincial governments should be taking an active role in promoting consolidation through grants, "forgiveable loans" and low interest loans, or whether provincial governments in particular should remove those regulations and institutions which have prevented the full impact of competition among processors and distributors. There can be little doubt that costs vary greatly among plants.

#### Federal-provincial Jurisdiction and Responsibilities

Federal-provincial relations become more involved in the dairy industry than in any other sector. Provincial governments take responsibility for fluid milk pricing, quotas and pools and the Federal government operates price or income subsidies, import controls and export promotion and subsidies. Both programs affect the other. Responsibility for dairy policy cannot be compartmentalized precisely among federal and provincial jurisdictions. The required co-operation among government agencies responsible for dairy policies includes consultation on policy formulation, consistency among programs and removal of inequities arising out of discrimination between fluid and other milk shippers. In the latter regard, provincial governments should undertake to establish regional price pools for grade A milk and provide non-fluid shippers with the opportunity of entry into such pools providing they meet quality standards. Manufacturing milk shippers transferring into the pool under this program should be permitted to continue receiving direct payments on their federal quota subject to the same restrictions as other fluid shippers and all fluid shippers should be permitted to purchase federal quotas.

The long term objective of the Canadian Dairy Commission is, according to the Act, to provide efficient producers of milk and cream with the opportunity of obtaining a fair return for their labour and investment. Obviously, a great deal depends upon the criteria for "efficient" and "fair return". The Chairman of the CDC has also enumerated two related objectives. One is rationalization of the industry, which is generally interpreted to mean the improvement of its productivity and efficiency so that it can become increasingly self-sufficient. The other is to tailor the production of dairy products to the requirements of our normal markets.<sup>22</sup>

#### The Altantic Provinces

Regional impacts of national policies always provide important and controversial issues and never more so that in the Atlantic region. The present policy of the Dairy Commission seems to create adverse effects in parts of the Maritimes where a large proportion of milk is sold as fluid milk, a considerable amount as cream and only very small amounts for manufacturing into butter and skim powder. With CDC rules concerning the eligibility of fluid shippers for federal subsidies and with only small amounts qualifying for the direct subsidies, some officials in the Maritimes feel that some exceptions should be made in the application of national policy. Since special rules have been created for provinces in which there are pooling arrangements (British Columbia and Ontario) there are precedents for some regional flexibility in C.D.C.'s policy.

#### The Milk Industry 1980

In this chapter we propose fairly drastic treatment for the dairy industry between 1969 and 1976. The result would be an industry of lower output, lower costs and vastly fewer problems. We anticipate that the number of milk cows, which has been falling steadily from 3,006,000 in 1957-61 to 2,668,-000 in 1967 to 2,584,000 in 1969 will have declined to 1,667,000 by 1980. Production per cow has been rising for years and we anticipate that it will reach 9,000 pounds by 1980. This would be a tremendous achievement and one of which everyone concerned with the dairy industry could be proud.

<sup>22</sup>Address to Dairy Farmers of Canada, January 1969.

If these projections prove correct and there were 1,667,000 milk cows averaging 9,000 pounds per cow, total Canadian production would be 15 billion pounds of milk. Consumption in Canada may be about 19.9 billion in 1980 and thus imports of butter would be required. There seems no likelihood of imports of skim milk powder or cheddar cheese by 1980, but specialty cheeses will undoubtedly continue to be imported. The consumption estimate is based on the assumptions that filled and synthetic milks will be of minimal importance and that the 12 per cent tax will continue to apply on margarine.

These changes in the dairy industry should produce a much trimmer, more advanced industry. Compared with the findings of Table 5, which shows the astonishingly low level of technology used (36 per cent of industrial milk producers using artificial insemination, 37 per cent with coolers of any kind etc.) the milk producing sector will be viable in 1980.

#### RECOMMENDATIONS

1. The Canadian Dairy Commission should be renamed the Canadian Dairy Adjustment Commission. Its objective should be to assist milk producers to adjust their dairy enterprises so that the latter become profitable without extensive subsidies or to assist milk producers who have little prospect of financial success as dairymen to phase out of milk production and into other operations with the least possible personal and social dislocation.

2. The C.D.A.C. and provincial regulatory bodies must provide the kind of economic climate for processors and others involved in the dairy industry so that marketing efficiency may be improved. Such measures include:

- (a) Programs to bring about more stable milk production, especially seasonally,
- (b) Ending those regulations that inhibit the expansion and merger of processors and distributors.

3. The C.D.A.C. should announce its general programs at least five years in advance including ranges of prices or physical targets to provide flexibility in the later years. Quota policies and payments should be made explicit for a five-year period in order to allow rational planning and action.

4. The C.D.A.C. should revise its subsidy eligibility quota policy as follows:

- (a) All holders of quotas should be offered a cash payment and if they accept, their quotas should be retired by the C.D.A.C. A payment of two or three times its current annual value is suggested.
- (b) All quotas not retired by purchase should be made openly negotiable. There should be no upper limit to the amount of quota held by any one producer. The lower limit should be raised from the current 12,000 pounds to 30,000 in 1970-71 and progressively higher in subsequent years. This program should be announced in early 1970.

- (c) The unit value of direct payments should be reduced progressively so as to disappear in 1976. The unit values per year and the terms under which quotas may be held and exchanged should be announced during 1970 for each year until they are phased out in 1976.
- (d) The objective should be for C.D.A.C. to be out of its present subsidy programs by 1976.

5. The C.D.C., which has been buying skim milk powder at 20 cents per pound and exporting it at five to eight cents, should make powder available to livestock feeders at prices competitive with substitute ingredients. Presumably the C.D.A.C. would have to denature the powder by using a harmless vegetable dye and thereafter might sell it at prices close to those net prices currently received in export markets.

6. No public funds should be made available (with or without subsidy) for the expansion of skim milk powder processing facilities until the serious oversupply of powder has been overcome. Economic opportunities are available, however, for the production of specialty cheeses and limited assistance for initiatives in this direction should be considered.

7. Some of the funds currently made available to the C.D.C. should be used by the C.D.A.C. to provide positive encouragement for dairy farmers who wish to enter beef cattle production. These would take the form of adjustment grants during the two years or so required to establish a beef operation. Other assistance might take the form of temporary subsidies for artificial insemination by beef breeds. The principle here is the same as that enumerated in Chapter 5, Wheat, Feed Grains and Oilseeds in which the Task Force recommends that funds currently used under the Temporary Wheat Reserves Act should be used to promote adjustment from wheat production to forage. In addition, there are some areas in which assistance to dairy farmers who have profitable opportunities in cash crops would be justified.

8. The level of price supports for butter and cheddar cheese should be continued at current levels for several years but the offer-to-purchase level for skim milk powder should be reduced progressively each year until it is considerably closer to international prices. Since per capita consumption of butter in Canada is responsive to price, some of the reductions in expenditure on skim milk powder might be used to reduce the price of butter to consumers through a deficiency payment. It appears that the result of all of these adjustments could be a shortfall in butter production relative to consumption at prices to farmers of about 65 cents per pound. If this occurs the Task Force recommends that the C.D.A.C. stabilize the price at about 65 cents per pound by importing butter and selling it at 65 cents. The profits so derived should be used to promote adjustment in the industry or out of it.

9. Other provinces ought to give serious consideration to adopting the fluid milk quota systems (including methods of transferring quotas) currently followed in Ontario and British Columbia.

10. Provincial and regional milk marketing boards should discuss with provincial departments of education the feasibility of initiating school milk programs in certain municipalities. A national policy concerning school milk programs is ruled out on constitutional grounds.

11. All provinces should abolish resale price control on milk.

12. Increased emphasis on programs such as milk recording (perhaps by Provincial Marketing Boards) and mastitis control is desirable in order to reduce costs of production at the farm level. Many Canadian milk producers are extremely efficient, using their resources skillfully and keeping abreast of scientific developments related to their industry. There should never be any doubt raised in the minds of such people that they contribute productively to the well-being of the nation. It is a great responsibility for provincial extension specialists, for credit agencies, for marketing board officials and for the C.D.A.C. to ensure that more farmers move into this elite of low cost efficient operators and that facilities and information be provided to keep them highly productive. Recent trends have been in the right direction, with rapidly increasing output per enterprise. Expansion of bulk hauling and raising of milk quality standards will speed this desirable trend; those without milk coolers have little place in a modern industry. The dairy industry has a number of years of rapid transition ahead of it and the speed of transition should remain almost that of the last three years.

## APPENDIX A

#### TABLE A-1

#### Costs and Returns on Fluid Milk Farms, by Province

		Nova	Quahas	Ontario		Saskatchewan		Alberta		British Columbia
		1965	1966 -	1966	1967	1966	1967	65/66	66/67	1967
Number of farms Cows per farm Milk sold/cow (lbs.)		99 24.4 7,276•	86 28.0 8,755	207 33.1 9,077	118 35.1 9,759	28 29.4 9,664	13 32.2 10,472	51 44.8 9,452	61 44.0 9,847	140 28.0 9,229
Income per cwt. sold Milk Livestock credit	(S) (S)	5.14• .66	4.74	5.28 1.10	5.59 1.27	5.66 .95	5 5.67 1.04	4.74 .66	4.93 .81	4.7
Total	(S)	5.80	5.41	6.38	6.86	6.61	6.71	5.40	5.73	5.2
Expenses and net returns per cwt. sold Feed and other direct	(S)			3.81	3.61	3.15	5 3.26	3.32	3.27	2.7
Gross margin Labour charges	(S) (S)		_	2.57 1.20	3.25 1.19	3.46 1.71	5 3.45 1 1.57	2.07 1.15	2.47	2.5
Contribution to overhead <sup>2</sup>	(S)			1.37	2.06	1.75	5 1.88	.92	1.39	.7
Dairy investment/cow	(S)			942	1,056	1,087	975	717	776	789
investment Aver. total farm investment Aver. net farm income	(%) (S) (S)	27,865 . 3,196	37,044 5,656	13.2 59,646 5,329	19.0 75,114 8,763	15.5 99,343 14,524	20.2 102,171 14,278	12.1 97,037 8,019	17.6 95,700 7,832	8.9 57,708 4,368

Not exclusively fluid milk farms.
 Includes dairy overhead plus return to management.

\*Estimated.

SOURCE: Nova Scotia Department of Agriculture & Marketing; Ministère de l'Agriculture et de la Colonization Québec; Ontario Department of Agriculture and Food; Saskatchewan Department of Agriculture; Alberta Department of Agriculture; Canada Department of Agriculture.

#### APPENDIX B

## EXPERIENCE IN THE UNITED STATES WITH FILLED AND SYNTHETIC MILKS<sup>1</sup>

## (a) Composition and characteristic

According to a United States Department of Agriculture publication<sup>2</sup> filled milk is defined as a "product made by combining fats or oils other than milk fat with other milk solids and the resulting product is in semblance of milk" and "synthetic or non-dairy milk . . . would be made with a combination of fats or oils other than milk fat combined with other food solids, excluding milk solids."

In most instances the only fat used in filled and synthetic milk is coconut oil, a fat source low in polyunsaturated fatty acids, although a combined soybean and cottonseed oil relatively high in polyunsaturated fatty acids has been used. Filled milk also contains a "basic mix" consisting of emulsifiers, stabilizers in a few cases, and body agents. The major non-fat ingredients in the completely synthetic product are protein—usually sodium caseinate although a soy protein isolate has also been used—emulsifiers, buffers, stabilizers, body agents and sweeteners. Both products may also contain added vitamins, minerals, and coloring agents.

Nutritionally, it appears that there are only minor differences in the major nutritional elements of natural milk between filled and whole milk. However, Table B 1, indicates that synthetic milk, in the form marketed in the United States over past months, is deficient in major nutrients particularly protein and calcium Another study indicated a complete absence of riboflavin in synthetic milk.<sup>3</sup>

Estimates have been made that a nutritionally equivalent synthetic milk would have little or no ingredient cost advantage over the filled product depending on the pricing arrangement for the solids-not-fat component in the latter product.<sup>4</sup> A Michigan State University study also indicated that to raise the protein content of synthetic milk would cost approximately 1.5 cents for each percentage point (.1 per cent) increase per half gallon.

Studies indicate that regular and filled milk are not significantly different with respect to flavour and palatability. A consumer survey conducted by

<sup>&</sup>lt;sup>1</sup>This appendix is a somewhat edited version of a memorandum prepared for the Task Force by Professor R. G. Marshall, Department of Agricultural Economics, University of Guelph. Professor Marshall visited a number of American centres in January, 1969 on behalf of the Task Force to obtain up-to-date information on milk substitutes. Along with Professor Perkins (project leader) and Professor Clark of the University of Guelph, Professor Marshall also helped to produce a major report "Canadian Dairy Policies" for the Task Force.

<sup>&</sup>lt;sup>a</sup>The National Food Situation, Economic Research Service, U.S.D.A., November 1968, p. 28.

<sup>&</sup>lt;sup>a</sup> The Relative Nutritional Value of Filled and Imitation Milk, Dairy Council Digest. It is estimated that U.S. consumers obtain 76 per cent of their total calcium and 43 per cent of their total riboflavin from dairy products. The National Food Situation, U.S.D.A., November, 1968.

<sup>\*</sup>The Impact of Filled or Non-Dairy Products, op. cit, p. 22.

	Fluid Mi	ilk (3.5%)	Synthetic Milk		
Nutrient —	%	Gm/qt.	%	Gm/qt.	
Cash abudratas	49	48.00	6.8	66.00	
Carbonyurates	3.5	34.00	3.1	30.00	
Fal Drotoin	3.5	34.00	0.8	7.3	
A ab	0.7	7.00	0.5	4.9	
Calaium	0.12	1.15	0.02	0.18	
Dheenhorous	0.09	0.91	0.05	0.46	
Phosphorous	0.05	0.49	0.07	0.68	
Potassium	0.14	1.41	0.36	3.50	

TABLE B-1 Nutrients in Fluid Milk and Synthetic Milk

SOURCE: The Dairy Situation, Economic Research Service, U.S.D.A., May 1968, Pages 33-34.

Cornell University<sup>5</sup> indicates that 62 per cent of all users of filled milk reported no difference in taste between filled and fluid milk, 12 per cent reported a taste preference for filled milk and 24 per cent a taste preference for fluid milk. This does not, as yet, appear to be true for the synthetic product, although technological developments in the future could well permit this product to more closely approximate the flavour, texture, and palatability of regular milk.

## (b) Relative Ingredient Costs

A U.S. Department of Agriculture study of ingredient costs indicates that fluid milk cost 14.2 cents per American half gallon more than filled milk (Table B-2). An Arizona market study<sup>6</sup> of February 1968 showed ingredient costs per half gallon of 28 cents for fluid, 15.44 cents for synthetic and 18 cents for filled milk. A Wisconsin report showed fluid milk costing 9.4 cents more than synthetic and from 4.4 to 12.4 cents more than filled milk, per half gallon.<sup>7</sup>

Since the U.S. Department of Agriculture through Federal Milk Orders, appears to have taken the stand that non-fat milk solids utilized in filled milks are to be priced at Class I levels, (i.e. highest prices) all costs of filled milk would be at the higher levels cited above (e.g. Col. 2 rather than 1 in Table B-2). This policy widens the cost differential between filled milk and the completely non-dairy substitutes, but lowers it between regular fluid milk and filled milk. The differential between fluid milk and filled milk (Class I prices) on the one hand and synthetic milk on the other is considerably lower in Wisconsin than in Arizona or in the U.S.D.A. estimates. This is apparently

<sup>\*&</sup>quot;An Analysis of the Milk Substitute Situation", Call, D. L., and Wilkerson, L. J., Department of Agricultural Economics, Cornell University, October 1968.

<sup>•</sup> The Impact of Filled or Non-Dairy Products, A special study for the Milk Industry Foundation, May 1968.

<sup>&</sup>lt;sup>\*</sup> The Filled and Imitation Milk Story and What to Do About These Products, talk given by Dr. Truman F. Graf, University of Wisconsin, at the Illinois Milk Producers Association Annual Meeting, Chicago, Illinois, November 1968.

	(1) (2) Filled milk using:			
-	Non-fat <sup>1</sup> dry milk	fluid <sup>1</sup> skim milk	Synthetic (hypothetical)	Whole milk <sup>1</sup>
	í,	n Cents per U	J.S. Half Gallon)	)
Fluid skim		15.2		15.2
Non-fat (dry milk)	9.4			
Protein (soy protein)			5.7	
Milk fat		_		12.0
Vegetable Oil	2.7	2.7	2.7	
Emulsifiers and Stabilizers	2.8	2.8	2.8	
Buffer, body agents sweeteners		—	1.8	
Total cost per half gallon	14.9	20.7	13.0	27.2

TABLE B-2					
stimated Ingredient	Costs of Fluid	and Substitute	Milks,	U.S.A.	

1 Whole milk priced at \$6.33/cwt., 3.5% bf. with a bf. differential of 80 cents. Dry milk priced at 24.5 cents/lb., vegetable oil at 21 cents/lb., base mix at \$3.00/lb.

SOURCE: The Dairy Situation, Economic Research Service, U.S.D.A., May, 1968, Pages 33-34.

due to regional differences in the pricing of regular milk and has undoubtedly been a major influence in the variable penetration of milk substitutes in different markets.

#### (c) Administrative and statutory influences

Currently, administrative and statutory barriers to both filled and synthetic milk appear to be in a state of flux. Over 30 states have laws or regulations prohibiting or regulating the sale of filled milk products within the state. In addition, the Federal Filled Milk Act prohibits shipment of filled milk products in interstate commerce. However in many states filled milk acts have been and are being challenged in the courts. The opinion has been expressed that the Federal Filled Milk Act will be challenged in the near future.<sup>8</sup>

In the states in which filled milk is permitted, a variety of regulations concerning composition standards and labelling exist or are being clarified.<sup>9</sup>

Few states have statutory barriers pertaining to the manufacture and sale of the completely synthetic product. Non-dairy products can move freely in interstate commerce and are legal in at least 35 states. However, it is expected that regulations concerning standards of composition and labelling will be introduced at both federal and state levels.

<sup>&</sup>quot;A Realistic Approach to Milk Pricing" Dr. T.F. Graf, Dept. of Agricultural Economics, University of Wisconsin.

<sup>\*</sup>See "Federal and State Standard for the Composition of Milk and Certain Non-Milkfat Products", Agricultural Handbook No. 51, Consumer and Marketing Service, U.S.D.A. For example, New York State designates as "melloream" any substance, mixture or compound which contains vegetable fat or oils and proteins derived from animal or vegetable sources and where appearance, odor, and taste is similar to cream, half and half, milk or a mixture of milk and cream to a point of rendering these products difficult to differentiate from each other".

In the United States there are more restrictions on the production and marketing of filled milk which contains non-fat dairy solids than there are for the synthetic product which contains no dairy ingredients.

#### (d) Market penetration

Filled and/or synthetic milk have been marketed in about 20 states with significant market penetration of the filled product only in Hawaii (over 20 per cent of total milk sales) and Arizona (over 10 per cent of the milk market); penetration in other markets has amounted to less than 2 per cent in every case. Data compiled by the U.S.D.A. on filled and synthetic milk sales in Federal Order markets are summarized in Table B-3 for the 12 months November 1967 to October 1968. Neither filled nor synthetic milk sales would appear to have made a major inroad into the total fluid market and account for only about 0.5 per cent of the total Class 1 sales in the 30 Federal Order markets in which they are sold. Market growth has been slower in most recent months.

	Filled	Synthetic Milk	
-	using Fluid Skim	using Non-fat dry	Non-dairy fat and protein
Nov. 1967			
No. of markets	13	9	3
No. of handlers	30	11	3
Volume '000 lbs	1,787	581	n.a.
Fcb. 1968			
No. of markets	19	8	12
No. of handlers	37	22	10
Volume '000 lbs	3,480	1,078	n.a.
May. 1968			
No. of markets	20	10	7
No. of handlers	45	17	10
Volume '000 lbs	4,202	879	n.a.
August, 1968			
No. of markets	16	9	8
No. of handlers	40	15	8
Volume '000 lbs	4,428	846	n.a.
October 1968			
No. of markets	16	8	8
No. of handlers	41	15	8
Volume '000 lbt.	4.888	753	n.a.

TABLE B-3 Filled and Imitation Milk Sales in Federal Order Markets, U.S.A. 1967 and 1968

Source: The Dairy Situation, Nov. 1968, U.S.D.A. data for October, as yet unpublished.

The failure of synthetic milk to match the taste of regular milk has undoubtedly been a major factor influencing consumer acceptance of this product. In addition, the nutritional deficiencies of synthetic milk and the uncertainties of nutritional and composition standards to be adopted by the U.S. Food and Drug Administration appear to have inhibited wide-spread market development. Reports indicate that it has been market tested in several regional markets. The following observations appear to be typical of the marketing developments and the synthetic product.

Imitation Milk was sold in at least 17 stores of four chains in Connecticut from January to March 1968 with the time period of sales for each chain ranging from 21 days to 47 days . . . in New York State, synthetic milk sales have been small or non-existent <sup>10</sup>

Three non-dairy milks have been offered for sale in Michigan . . . it is my understanding that consumer acceptance and sales have been low and that at least one of these products has been removed from the market and the others will be removed soon.<sup>11</sup>

Filled milk sales have increased phenomenally in Hawaii and Arizona and very modestly in other markets. A Cornell University study on the status of milk substitutes in three U.S. markets disclosed that filled milk has not reached the acceptance level in New York State that it has in other markets even though priced at a wider retail price differential relative to regular milk. This indicates that the intensity of the initial promotion of the substitute product, the length of time consumers have been aware of and their attitudes towards the substitute product may also be influences contributing towards different sales levels among different markets.

Concerning these other variables the Cornell University study indicates that there is no significant difference between consumers of filled milk and of regular milk with respect to family size or family income. The study does point out, however, that in a survey of consumers who purchase filled milk in California and Arizona, between 60 and 70 per cent of those interviewed mistakenly associated a lower calorie content with filled milk than with regular milk and that between 50 and 60 per cent expressed the opinion that filled milk produced less cholesterol — even though all the products being marketed contained coconut oil as a substitute fat ingredient. As previously noted, coconut oil is reported to be higher in saturated fatty acids than is butter-fat. This study then leaves the impression that at least part of the consumer acceptance of filled milk could be based on faulty premises concerning the attributes of competitive products. On the other hand the rapid market penetration of filled milk in the Hawaii market is generally attributed to a retail price advantage of approximately 20 cents per half gallon.

<sup>&</sup>lt;sup>10</sup> Correspondence with members of the Department of Agricultural Economics, University of Connecticut.

<sup>&</sup>lt;sup>11</sup> Letter from member of the Department of Agricultural Economics, Michigan State University, April, 1968.

			the second s
	New York (Niagara Frontier)	Arizona (Central)	California (State)
Length of time substitutes have been available	6 months	several years	12-21 months
Substitute as percent of relevant class.	1.02	10.80	1.25
Recent trend in sales May to August	down 1.1%86%	up 9.1%-11.7%	steady 1.27%–1.34%
Type of label	Melloream	Trade name	Imitation
Typical price differential per American half gallon	13 cents	8–10 cents	8.9 cents

TABLE B-4	
Status of Milk Substitutes in Three Markets, U.S.A. 1967-68	

Source: Call, D. L., and Wilkerson, L. J., op.cit.

# chapter eight

# FRUITS AND VEGETABLES

#### INTRODUCTION

The fruit and vegetable growing industry confronts the country with important and difficult policy issues. These are far out of proportion to the seven per cent of Canada's cash farm income and less than four per cent of the value of agricultural exports for which the industry accounts. The Canadian harvest is very much limited to the June-October period and the industry is in competition with American fruits and vegetables harvested over a much longer season. The earlier United States product sold in Canada brings higher prices to American farmers and takes the edge off Canadian consumer appetites. It is common for the early harvest season of a Canadian crop to coincide with mid-season or even end-of-season harvesting in the United States. The early season advantage of the United States has persistently troubled this sector of agriculture.

The fruit and vegetable industry provides 45 per cent (by weight) and accounts for about one-sixth of the value of food consumed in Canada. In terms of value added, the fruit and vegetable processing industry contributed some \$200 million in 1966 to national income.

The many products of the fruits and vegetables industry complicate any analysis of the sector. The production and distribution conditions of some products are quite similar but others entirely different. In addition to dozens of less important horticultural crops there are almost thirty individual fruits and vegetables grown in Canada, each with a farm value of \$1 million or more per year. Thus we have chosen to consider the problems of only the most important commodities or commodity groups.

FRUITS AND VEGETABLES

## Products and Regions

The farm value of vegetables sold by Canadian growers over the period 1962-66 averaged about \$180 million annually. Of this, potatoes accounted for almost \$98 million, or nearly 55 per cent; tomatoes for processing were valued at \$12.9 million; mushrooms at \$7.9 million; fresh market tomatoes, \$6.3 million; onions, \$6.2 million; and peas for processing, \$5.8 million. Thus six crops accounted for more than 75 per cent of the cash farm income from vegetables.

The situation is much the same for fruits. Of the average annual farm value of sales of \$68.5 million over the period 1962-66, apples accounted for \$30.7 million; strawberries and peaches were each valued at \$6.8 million; grapes at \$5.7 million and cherries at \$4.9 million. These five crops thus accounted for 80 per cent of all farm marketing of fruits.

Data for 1962-66 show 40 per cent cash farm income in the Maritime Provinces was derived from these crops. Corresponding figures for other regions were: British Columbia, 22 per cent; Quebec, ten per cent; Ontario, nine per cent and the Prairie Provinces, one per cent.

Geographic distribution of important commodities and/or commodity groups in this sector is presented in Table 1. These data reveal the importance of potatoes in the Maritime Provinces; of other storable vegetables in Central Canada; of processing vegetables, tender fruits and grapes in Ontario and of apples of British Columbia, Ontario and Quebec. They also point to a wide regional distribution of small fruits.

	\ \	egetables,	1963-66			
Commodity Group	Maritimes	Quebec	Ontario	Prairies	British Columbia	Canada
Potatoes	. 39	16	22	16	б	100
Storable Vesetables	5	32	44	8	10	100
Fresh Vegetables	4	22	57	4	11	100
Processed Vegetables	5	17	72	n.a.	9	100
Vegetables, Sub-total	26	19	36	12	7	100
Apples	. 11	23	29	0	38	100
Tender Fruit	1	0	72	0	27	100
Small Fruit	22	24	18	0	35	100
Grapes	. 0	0	95	0	5	100
Fruits, Sub-total	. 10	16	43	0	32	100
Fruits and Vegetables Total	. 22	18	38	8	14	100

I ABLE I		
Regional Percentages of Cash	Farm Income by	Groups of Fruits and

SOURCE: C.D.A., Crop and Seasonal Price Summaries, various years.
#### **Consumption**

The demand for, or requirements of fruits and vegetables in 1980 depend on projected changes in per capita consumption (reflecting changes in incomes and tastes) and population. The response of expenditures on food to changes in income is small but is slightly higher for fruits and vegetables, particularly in the processed form. Demand is stimulated by a shift from raw to processed forms, these representing convenience foods. Thus per capita consumption of processed fruits is projected to increase by 15 per cent from 1964-66 to 1980; and processed vegetables, except potatoes, by 22 per cent in the same period.

With the combined effects of both population and incomes, the Canada Department of Agriculture projects domestic consumption of major fruits and vegetables to increase as indicated in Table 2. This represents a basis for substantial expansion of the industry over the coming decade.

Commodity or Group	Consumption 1964-66 (Millions of Pounds fresh equivalent)	Consumption 1980 (Millions of Pounds fresh equivalent)	Percentage Change
Fruits			
Fresh	1.916	2,605	36.0
Processed	1,690	2,579	52.6
Total	3,606	5,210	44.4
- Vegetables except potatoes			
Fresh	1,684	2.500	48.5
Processed	1,674	2,709	61.8
Total	3,358	5,210	55.1
Potatoes, Total	3,063	3,829	25.0

 TABLE 2

 Canada Fruit and Vegetable Consumption 1964-66 and Projection 1980

SOURCE: Z. J. Yankowsky, Frank Shefrin, J. P. Cavin, Demand Supply Projections For Canadian Agriculture—1980. Economics Branch Canada Department of Agriculture.

### Processing Industry

Fruit and vegetables are highly seasonal in production and many of them are highly perishable. The processing industry performs the important service of transforming seasonal fresh market surpluses into more even annual flows of canned or frozen products, at the same time reducing heavy dependence on imports.

The average proportion of the Canadian commercial crop of the various commodities and/or commodity groups which was processed over the period 1962-66 was as follows: potatoes, 11 per cent; processing vegetables (asparagus, beans, corn, peas and tomatoes), 85 per cent; other vegetables, 12 per cent (over the years 1962-64); apples, 33 per cent; tender fruits, 46 per cent; small fruits, 61 per cent. There has been a rapid increase in the

proportion of potatoes and apples processed over recent years; the former rose from seven to 14 per cent over the 1962-66 period and the latter from 29 to 35 per cent. These trends are expected to continue.

There is a heavy concentration of the fruits and vegetables processing industry in Central Canada. In 1966 there were 314 establishments, over 75 per cent of them located in Ontario and Quebec. Twenty-nine per cent of these establishments with 1966 shipments over \$1 million accounted for more than 85 per cent of shipments by the industry, (\$470 million of which value added was \$200 million). The industry employed 20,558 paying salaries and wages of \$81 million.

## International Trade

An examination of the position of this industry in its international trade context provides a good background for consideration of major policy issues. Canada imports far more fruit and vegetables than she exports (Table 3). Among the imports are bananas, citrus fruits and other horticultural crops not grown in Canada and those products such as fresh lettuce which are produced only in greenhouses except for a period of five months during the summer. Thirty per cent of Canada's agricultural imports are fruits and vegetables (\$291 million out of \$991 million, average of 1962-66); horticultural imports are also almost six times as large as exports, a striking contrast to that of the other sectors of Canadian agriculture.

The industry's international trade raises the question of how competitive it is or could become. Much is located close to large Canadian centres of population. The industry produces many bulky, often highly perishable commodities expensive to transport. It appears to have a ready-made opportunity for expansion. Furthermore, per capita and total demand for fruit and vegeta-

TABLE	3	
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Canada, Trade in Fruit and	Vegetables, and Agricultural Products
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Period	Total Agri. Exports	Total Agri. Imports	Fruit and Vege- table Exports	Col 4 Col 2	Fruit and Vege- table Imports	Col 6 Col 3	Net fruit and Vegetable Exports- Imports	Net Trade in Fruit and Vegetables of a kind Grown in Canada <sup>*</sup>
	Emilian	f million	Smillion	~	Smillion	~	Smillion	
<i>(</i> 1)	3million	2million	3million	10	3mm0n (6)	ĉ	(8)	(9)
(1)	(4)	(5)	75 0	27	241	17 8	-208.2	-152.7
Aver. 1930-00	900	001	\$1.6	14	200.0	79 4	-219.2	-181.5
Aver. 1902-00	1,232	991	10 6	14	767 6	11 2	-228.0	- 166.8
1902	1,157	1 006	39.0	3.4	770 4	77 8	-210 4	-170.4
1903	1,339	1,005	47.1	11	788 6	77 6	-216.4	- 181.0
1904	1,702	1,047	52.2	3.1	101 1	10 1	-245 8	-188.8
1903	1,393	1,011	28.3	3.0	114.0	10 4	- 256 6	- 200.6
1967	1,862	1,036	70.8	4.8	322.7	29.8	-251.9	- 191.9

SOURCE: C.D.A., Economic Branch, Annual, Canada Trade in Agricultural Products.

•Excludes only the imports of oranges, bananas, grapefruit, lemons and those nuts for which precise trade figures are available.

bles in the domestic market is expanding. More than one-half of the Canadian industry also, is located close to large American metropolitan markets, which apart from tariffs and other trade restraints represent attractive outlets for products Canada can produce competitively. On the other hand, the climate is unfavourable. This cuts down the growing season, interferes with much-wanted continuity of supply and causes highly seasonal and therefore high-cost processing operations. In every part of the fruits and vegetables industry international competitiveness, particularly with the United States, is an important issue. This is considered in the commodity and policy sections of this chapter.

Protection is necessary to permit Canada to have a wide commodity range within its fruits and vegetables industry. For many years protection for most commodities has consisted of periods of seasonal free trade within each year, periods when seasonal duties apply and the use of *ad valorem* duties for periods not covered by above arrangements. These vary from product to product, depending on the Canadian harvesting period and storability of the product. Fresh tomatoes for instance are imported without duty from 1st January through 31st March; the tariff is one and one half cents per pound for 32 weeks maximum, the period to be selected by grower representatives in each of the tariff zones and conveyed to government by the Canadian Horticultural Council; during the balance of the year, the tariff is ten per cent *ad valorem*. In addition to the above basic protective structure, there are available (and seldom used) anti-dumping<sup>1</sup> and other measures to protect Canadian producers against injury.

The Task Force does not consider the protection given this industry to be excessive. It is much lower than that accorded growers in the United States or in almost all other countries. The most significant success in the Kennedy Round tariff negotiations with respect to agriculture was achieved in the fruit and vegetables commodity area. Duties on many fruits and vegetables were reduced and five products (apples, blueberries, parsnips, squash and endives) will be on the free list by 1972. The Task Force commends the achievements of the Kennedy Round negotiations.

There are a number of vegetable crops for which Canada has a seasonal comparative advantage vis-a-vis American growers. Thus Canada has been able to export increasing quantities of carrots and onions to the United States from October through April, in the face of U.S. duties from 10 to 11 per cent in the case of carrots and 14 cents per pound on onions. Free trade with the United States would allow exports of these crops to expand substantially. Turnips and the cole crops are in the same category. Year round free trade would permit Canadian growers to exploit their seasonal advantage. It would also permit Canadian consumers lower cost access to imported fresh products in the period when high quality fresh Canadian produce is not available.

<sup>&</sup>lt;sup>1</sup>Dumping, a much misunderstood term, means selling in a foreign market at a lower price than in the home market. See chapter 4 on International Trade.

## COMMODITY ANALYSIS

## Potatoes

Potatoes are the most important of the vegetables produced in Canada, accounting for almost two-thirds of the value of all vegetables produced and about three per cent of Canadian farm cash income. Regionally, income from potatoes is more important in the Maritimes, where it represents 30 per cent of farm cash income. The potato is identified with the economic difficulties of the Maritime Provinces in the same manner as the difficulties of the Nova Scotia coal industry, both sources of low income in the region. In other provinces potatoes account for one to four per cent farm cash income (Quebec, four per cent; Ontario, two per cent; Prairie Provinces, one per cent; British Columbia, four per cent).

Canada normally exports and imports potatoes with net exports averaging about seven per cent of production between 1962-63 and 1966-67. Per capita consumption in the 1960's has been quite stable. The decline in consumption in the fresh form was roughly offset by the increase of consumption in the processed form. Over the four-year period, 1963-66, per capita consumption of processed potatoes bounded from 20.6 pounds to 36.1 pounds. With increasing population, total consumption of potatoes increased from 2,255 million pounds in 1949-51 to 3,063 million in 1964-66. Projected consumption for 1980 is 3,829 million pounds.<sup>2</sup>

The Provincial distribution of potato production is set out in Table 4. Production and marketing is generally separated into two areas, the dividing

TABLE 4		
Potatoes: Production in Canada by Province (Crop Year July 1 to June	, 1957-1958 : 30)	to 1968-69

(thousa	nd hun	dredwe	ights)
---------	--------	--------	--------

Province	1957–1958 to 1961–1962	1962-1963 to 1966-1967	1967-1968	1968-1969
		(annual	averages)	<u></u>
Drince Edward Island	7.677	8,450	9,607	10,611
Non South	1.207	862	693	612
New Bronwick	8,743	11.772	12,585	12,261
Oucher	9.578	8,983	7,938	9,716
Ostario	8,109	9,860	7,344	8,604
Manitoht	1,123	2.576	2,900	3,000
Sachatcheunn	680	770	576	700
Alberta	1.895	2.927	3,200	3,300
British Columbia	2,142	1,947	1,900	2,100
Canada	41,154	48,147	46,743	50,904

SOURCE: Canada Department of Agriculture.

<sup>a</sup>Data from Yankowsky and others, op. cit.

point being the Lakehead. Production west of that point is about 22 per cent of the national total with most of the marketing there controlled by two marketing boards in British Columbia and two marketing commissions, one in Alberta, the other in Manitoba. There are no effective producer marketing controls in Ontario, Quebec or the Maritimes which account for more than three-quarters of total Canadian marketings.

Data on supply and disposition of potatoes for Canada in recent years presented in Table 5 illustrates the rapid increase in the use of processed potatoes. The import-export position of the industry is also shown.

A recent Canada Department of Agriculture study on the variability of production, marketing and prices of ten important commodities (apples, potatoes, wheat, oats, barley, corn, soybeans, eggs, hogs and cattle) established that production of potatoes was relatively stable, ranking eighth in magnitude of production variability. But in terms of variability of price, potatoes ranked first, reflecting a demand situation in which a small change in the quantity of potatoes offered on the market sharply affects price. It follows then that a small crop brings a larger gross income than a large crop. The severe price and income fluctuations observed throughout Canada, are greater still in the Maritimes. The instability of prices and incomes poses exceedingly difficult and intractable problems for potato growers. It is patently obvious therefore that growers should employ every means at their command to reduce price and income instability.

	Average 1957-58 to	Average 1962-63 to	10/7 /9
	1961-62	1900-07	1907-08
		(000 cwt.)	
Production	41,154	48,147	46,743
Imports	1,979	1,514	2,266
	43,133	49,661	49,009
Used for Seed the following year	2,829	2,844	2,912
Processed	2,583	5,703	7,340
Exports			
Table Potatoes	1,131	1,637	715
Certified Seed	1,655	2,515	1,823
Shrinkage (20 per cent of crop)	8,231	9,630	9,349
Available for Fresh Use	26,704	27,332	26,870
Net Trade	+ 807	+ 2,638	+ 272

TABLE 5 Potatoes: Fresh Supply and Disposition, Canada, 1957-58 to 1967-68 (Crop Year July 1-June 30)

SOURCE: Compiled from Crop and Seasonal Price Summaries, Canada Department of Agriculture, various issues. The problem of widely fluctuating and frequently low prices and incomes becomes more serious on large farms and more highly capitalized farms since cash operating and overhead costs are proportionately greater than for smaller units. This does not prevent the Task Force later arguing that larger units are required to realize economies of production providing there is greater price and income stability. Table 6 records the very wide annual price fluctuations, particularly in the Maritime Provinces. Monthly data would show even wider fluctuations.

	Year				
Province -	1963	1964	1965	1966	1967
	(Dollars per Hundredweight)				
Prince Edward Island New Brunswick Quebec Ontario Manitoba British Columbia	1.50 1.40 1.85 2.00 1.33 2.50	2.90 2.85 2.50 2.70 3.00 4.20	2.55 2.20 2.46 2.85 2.70 3.40	1.09 1.05 1.72 1.56 1.60 3.00	1.30 1.20 1.82 1.85 1.50 3.20
Canada	1.72	2.89	2.59	1.49	1.69

		TABL	ЕĆ	5	
Farm	Price of	Potatoes	by	Provinces,	1963-67

SOURCE: Crop and Seasonal Price Summaries, Ottawa, Canada Department of Agriculture, 1968.

There is exceedingly high variation in net income from year to year and returns to the resources employed are satisfactory only for those farmers who have large-scale, efficient operations and/or those who perform a superior marketing job.

The major markets for Maritime potatoes are in Central Canada. About three-quarters of the Prince Edward Island crop and an even larger proportion of that of New Brunswick, are marketed in Ontario and Quebec. More of the New Brunswick crop goes to Quebec than to Ontario and for the Island crop the reverse is true. Most of the Ontario and Quebec crops are sold in nearby markets.

Acreage in Ontario and Quebec dropped nine per cent between 1958-62 and 1963-67; but yields increased about eight per cent. For the same periods, acreages, yields and production in Prince Edward Island and New Brunswick increased 11.4 per cent, 14.8 per cent and 26.9 per cent respectively. Production of fall crop potatoes in Maine, has been stable for more than 25 years.

The increase in production in New Brunswick and Prince Edward Island went largely to export markets, mostly as seed potatoes to countries other than the United States and as table potatoes to the United States.

The high volume and capacity for production of potatoes in the Maritimes cries out for an export outlet in the United States but the United States tariff and quota and/or the American production level prohibit or restrict the export flow of Canadian potatoes with a consequent lowering of Canadian producer prices. Canadian exports to the United States are also sometimes adversely affected by Import Regulations under United States Potato Marketing Orders. Conversely, higher Canadian price levels which would normally be expected with a shortage of domestic potatoes are frequently not attainable because of imports or the threat of imports from the United States.

The existing tariff structure is to Canada's disadvantage. Canada has an all-year tariff of 37<sup>1</sup> cents per hundredweight on all potatoes. The American tariff is at the same level but this is applicable to annual quotas of 45 million pounds of table stock and 114 million pounds of seed. A duty of 75 cents per hundredweight applies on all imports over the quotas. Exports of potatoes are very largely from the Maritime Provinces and the dependence of this region on the U.S. market means that prices in the Maritimes tend to be less than American prices by the amount of the tariff.

By use of marketing boards and commissions the potato industry in Western Canada has achieved greater stability and higher returns than would otherwise have prevailed. Nonetheless, Western growers face stiff competition from the growing areas immediately to the south. Low-priced imports from high-yield and early-harvest areas impose a ceiling on Canadian prices. Downward pressure on Canadian producer prices is set and sustained, not necessarily by actual imports but by the threat implied in the lower shipping point prices and even quotations in the United States.

A speedy system ensuring the application of emergency protection offered by the new surtax provisions of the Customs Act would improve the position of Western potato growers. One of the chief disadvantages of the former protective measure, value for duty, was the slowness with which it was applied.

A speedy procedure would keep injury to a minimum, stabilize prices and result in a higher net income.

The Maritime potato industry has, or potentially has, a comparative cost advantage vis-a-vis Central Canada and the Eastern United States, because of advantageous soil characteristics, lower labour costs and land values. The regional and national benefits from that advantage would be realized with a move to free trade in potatoes with the United States. The Task Force recommends the Canadian Government take the required initiatives in that direction.

To continue over the next decade to hold a competitive position in the Central Canada and United States markets, regardless of the outcome of the tariff and quota issue, Maritime farmers and their potato marketing agencies must proceed with a vast re-structuring of the industry. For instance, the 1966 Census of Agriculture showed that only eight per cent of the growers in Prince Edward Island and New Brunswick having more than three acres of potatoes actually grew more than 67 acres. (Both university horticulturists and prominent growers consider acreages from 100 to 200 and upward per farm are required to realize an efficient use of modern technology). And while rapid progress is being made in expanding potato acreage per farm more than half the farms in the two provinces are still as small and technologically irrelevant as the five-to-ten-cow dairy farm.

Marketing potatoes is equally badly handled. Evidence presented to the Task Force pointed to patternless and almost meaningless price fluctuations. This system involving Maritime shippers and brokers in the wholesale markets of Montreal, Toronto and American cities is clearly inefficient. The irregular and unattractive pack of Maritime potatoes is partly to blame. It is difficult for the Task Force to understand why growers in this important sector of agriculture have not themselves attempted to market or at least to control the marketing of their products. Growers could have obtained these marketing powers over the last 30 to 40 years for the asking, under the same type of legislation successfully used by growers in British Columbia and the Prairie Provinces. The Task Force notes with satisfaction that Prince Edward Island is now moving toward comprehensive marketing controls.

A few large Maritime grower-shippers are doing an excellent marketing job. They offer a uniform product grading well over Canada No. 1 and offer it with continuity of supply. The few are well paid for their efforts. These same gains are equally available to all farmers provided they perform or control their own marketing of a reliable quality product.

Experiences in Ontario which could very well be repeated in Quebec accentuate the need for rapid improvement in the industry in the Maritime Provinces. Cash crop farming in Ontario is making rapid advances in technology. Potato production is no exception. Under the "protection" afforded by transportation costs from the Maritimes to Ontario and Quebec, the numbers of large, highly mechanized farm units are increasing rapidly. These large farms produce a superior product and are able to perform their own marketing through direct contacts with nearby chain stores and other outlets. Without a rapid change in the Maritimes, these Ontario and Quebec farmers will increase their share of the Central Canadian market.

The recent introduction of futures trading in Maritime potatoes on the Winnipeg Grain Exchange (with contracts deliverable in Montreal) has raised considerable controversy. The Task Force feels that for the Maritime product which has a very high degree of price instability and where shipperbroker relations have been open to wide-spread questioning, the introduction of futures trading is advantageous. The trading brings many new buyers and sellers into the market and the futures market may be used as a genuine hedge (or price guarantee) by growers. The only criticism of the existence of futures trading in potatoes which the Task Force encountered came from a marketing specialist in Maine. He stated farmers, observing the apparent spreads between cash and distant futures at harvest time would not deliver any substantial part of their crop in the last three months of the calendar year. This withholding action has reduced the Maine share of the Boston and New York markets substantially over the post-World War II period.<sup>3</sup>

<sup>&</sup>lt;sup>4</sup>University of Maine potato marketing specialist. We have already noted that production in Maine has not increased over the past 25 years.

The potato grade standards under the Canadian Agricultural Products Standards Act are primarily for trading in large quantities rather than for consumer purposes. It is possible, for instance, that from a carload of No. 1 potatoes a package may possess no grade defects while another may have 100 per cent defects and still the carload may be properly graded under existing standards. Furthermore, grade standards are not rigidly enforced, particularly in Quebec and New Brunswick. The laxity has led to considerable consumer complaint. Better grading must be oriented to consumer demand. We should make it perfectly clear that Canada and United States first grade are identical. But the quality of American potatoes in retail packs is higher than in Canada. This is attributable to American shippers packing to a standard well above U.S. No. 1.

Present grade standards are largely based on visible characteristics of potatoes but for some markets further criteria such as starch content, specific gravity and chipping or cooking colour are required to measure suitability. Measurable indicators of quality for particular uses should be considered.

Lack of reliable supplies of quality potatoes has led potato processors to ask for duty-free entry of potatoes for chipping purposes during the May-August period. The processors claim suitable potatoes are not available in Canada at that time but that they are available in the United States. They claim Canadian storage facilities are not capable of maintaining potatoes in proper condition, that microwave processing which might handle older potatoes is too expensive and that potato chips cannot be made much in advance of consumption. On the other hand, growers argue they will produce the proper potato and store it if the processor will contract at the beginning of the season. This issue will probably be resolved by the development of new varieties suitable to meet these special needs. This research is in progress.

# Other Storable Vegetables

The most important storable vegetables other than potatoes are carrots and onions. The former accounted for annual average value of \$6.6 million over the period 1962-66 and the latter for \$7.0 million. What is more important is that production of these crops is expanding rapidly and further rapid expansion may be projected. In contrast, other storable vegetables (turnips, cabbage, beets and parsnips) produce relatively small incomes and production of the latter two is declining.

Carrots are produced in every province, with Quebec being the largest producer, followed by Ontario. Acreage in Quebec (8,550 in 1967-68) has been consistently larger than in Ontario (3,226 in 1967-68), but yields per acre in Ontario have exceeded those in Quebec. The two provinces account for about 90 per cent of Canadian commercial production, averaging 352 million pounds over the past four years. Table 7 presents data on the supply and disposition of carrots over the past eleven years.

Consumption of both fresh and processed carrots is also increasing. Between 1957-61 and 1962-67, domestic disappearance of fresh carrots rose 15 per cent and of carrots for processing by 33 per cent. (About 17 per cent of the crop is processed). The 1967 per capita consumption of fresh carrots was 17.7 pounds. Domestic carrots supplied 76 per cent of the market the remainder was imported.

Imports of fresh carrots largely from March through to July, when domestic carrots are either in short supply or not available, dropped slightly over the ten years 1957 to 1967. Exports of fresh carrots during the last five years have ranged from 37 to 56 million pounds with a tendency for increased exports. Since the loss of carrot market in Britain in the early 1960's nearly all Canada's international trade in fresh carrots is with the United States. Producers in both Ontario and Quebec have demonstrated their ability to compete successfully in the north-eastern states despite a tariff of about ten per cent.

1	ABLE	1	

Carrots: Fresh Supply and Disposition, Canada, 1957-58 to 1967-68 (Crop Year July 1-June 30)

Item	Average 1957–58 to 1961–62	Average 1962–63 to 1966–67	1967–68
		(000 pounds)	
Production	244,399	351,838	355,060
Imports	80,441	76,885	89,184
Total Supply	324,840	428,723	444,244
Fresh Exports	19,498	46,441	45,501
Available for Domestic Use	305,342	382,282	398,743
Processed	39,916	60,074	52,000
Available for Fresh Use	265.426	322,208	346,743
Net Trade	-60,943	-30,444	-43,683

SOURCE: Crop and Seasonal Price Summaries, Ottawa, Canada Department of Agriculture, 1968.

A large proportion of the Canadian crop is already produced on organic soils, but Quebec has some 200,000 acres of undeveloped organic soils in an area only a few miles from the United States border and less than 300 miles from the Boston market. Private and co-operative shippers are now well established in the Boston market and others in the north-castern United States, despite the duty. These exporters sell a washed, attractively packaged, uniform product in contrast to the unsatisfactory marketing practices over much of the Canadian vegetable industry. With the tariff reduced to six per cent by 1972 and particularly under conditions of free trade, the Canadian industry and especially the Quebec industry, would expand rapidly but Canada would continue to depend on imports during late spring and summer months. Credit for development of the organic soil areas of Quebec promises a high pay-off and should be made available.

Onions, like carrots, are a vegetable of special interest since they have a potential for further rapid expansion, especially if the industry could be placed on a free-trade basis with the United States. Supply and disposition data on a national basis are presented in Table 8. The data point to rapid expansion in production and exports, to some contraction in import and a

moderate increase in consumption in the fresh form. While the expansion of the industry in the 1960's occurred under increased protection (the duty was raised from one to 1.5 cents per pound in 1959) technology in the industry has improved to such an extent that production would expand under free trade.

Item	Average 1957–58 to 1961–62	Average 1962–63 to 1966–67	1967–68	
	(thousand pounds)			
Production	139,192	239,154	224,627	
Imports	74,392	62,017	86.508	
Total Supply	213,584	301,171	311,135	
Fresh Exports	12,263	56,187	26.235	
Available for Domestic Use	201,321	244,984	284,900	
Processed	8,044	8,853	6,660	
Available for Fresh Use	193,277	236,131	278,240	
Net Trade	-62,129	-5.830	-60.273	

TABLE 8
Dnions: Fresh Supply and Disposition, Canada, 1957-58 to 1967-68
(Crop Year July 1—June 30)

SOURCE: Crop and Seasonal Price Summaries, Ottawa, Canada Department of Agriculture, 1968.

Production of onions is concentrated in Ontario and Quebec, with the former having twice the acreage of the latter. The major areas of commercial production in Ontario are the Bradford Marsh, the London area and the countries of Essex and Kent. These areas produce over 90 per cent of the production in Ontario. In Quebec onions are grown largely on the organic soils south of Montreal on a relatively small number of fairly large farm units.

Canadian onion production has been quite variable but prices even more so. The fluctuation results in a high degree of income instability which could be moderated if a continental free trade area were established since farm prices in the United States show greater stability.

The present high tariff, 1 3/4 cents per pound applied by the United States and 1 1/2 cents by Canada (for 44 weeks, otherwise, ten per cent), accentuates price and income instability for Canadian onion producers. Nor has the tariff afforded much protection since U.S. prices generally exceed Canadian. Over the years 1962-66 imported onions accounted for more than 20 per cent of Canadian consumption in the 44-week high duty period. Free trade would remove the incentive (and costs) of striving for early season production and would reduce storage costs. While Canadian exports have gone largely to Britain and the British West Indies, Quebec producers are now shipping into the northeastern United States and are confident they can hang on to that market, even with the present high tariff. Again quality and packaging of the onions are excellent. Without a tariff, Canadian onions would be assured a strong position in Boston and other eastern United States markets. Tomatoes are another important vegetable. Over the period 1962-66 the average annual farm value of tomatoes for processing was \$12.9 million and that of field grown fresh tomatoes was \$6.3 million. Greenhouse or glass-house tomatoes had an average farm value of \$3.9 million over the same period.

Eighty to 85 per cent of all tomatoes produced in Canada are processed and the remainder sold at considerably higher farm prices for consumption in fresh form. Ontario produces 97 per cent of all tomatoes-for-processing; within Ontario, production is concentrated in Essex and Kent Counties where yields are high. Tomato production for the fresh market is located close to large urban centres. Consumption in all forms has run from 54 to 64 pounds per capita in recent years.

Canada is a substantial net importer of tomatoes, fresh and processed. During the period 1962-66, imports (fresh equivalent) were 360-370 million pounds, or about 30 per cent of Canadian consumption. Of total consumption of 1,160 million pounds, about 300 million was in the form of fresh tomatoes, of which about 170 million were imported; the remainder of Canadian consumption was processed tomatoes (860 million pounds, fresh equivalent) of which about 200 million pounds were imported.

Canada has had large and growing imports of canned tomatoes and of pulp, paste and purce. Only in the case of soups and juice does Canada have any exports. Canadian tariffs are two cents per pound on whole canned tomatoes, 1.5 cents on tomato paste and 20 per cent *ad valorem* on juice. Although moderately high, these tariffs, have not prevented imports. Tomato paste imports from Portugal have been increasing in recent years.

A disadvantage for Canadian processing plants is the very short harvesting period during which this perishable crop must be processed. Even though other crops such as peas, corn or carrots may be processed using some of the same facilities, the interchangeability of equipment among processed vegetables is limited. Thus over-capacity tends to be a cost-increasing factor in Canada's fruit and vegetable processing industry.

Net farm income from the production of tomatoes for processing varies greatly from year to year, not because of the wide fluctuations in price, as is the case for many farm commodities but because of fluctuations in yield per acre, with acreage and prices remaining fairly stable. The relative price stability is imposed by marketing board negotiations.

The Ontario Vegetables-for-Processing Marketing Board has managed to negotiate prices so high as to promote vertical integration by processors or to inhibit growth in the industry itself. Average farm price per ton paid over the years 1962-66 was \$39 and has been over \$40 in the last three years. In 1968 the average farm price was \$47.40 per ton, compared to \$37.10 in Michigan.

An Ontario study showed that labour costs represented over 40 per cent of total costs even in 1961-62. Mechanization of tomato harvesting is making progress in the United States but is of limited use in Canada because its efficient use requires much larger farm operations than prevail in Canada. The economies available through mechanized harvesting may force a major

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re-structuring of the Canadian industry. Since 1967 West Indian labour has been flown to Canada to help during the fruit and vegetable harvesting period. In importing seasonal farm labour Canada is moving in the opposite direction from the United States, which has imposed severe restrictions on the migration of Mexican harvest labour to that country.

Among other vegetables, mushrooms, corn, cucumbers and peas are most important. But singly they represent negligible proportions of Canadian farm income and very small proportions of the income of commercial vegetable production. The average annual values of farm sales of these vegetables in the 1962-66 period was (in thousands of dollars):

Mushrooms	7,915 (1963-66)
Corn for processing	3,903
Peas, processing	5,579
Corn, fresh market	2,742
Cucumbers, field grown	3,141

These, as other vegetable crops, are of interest in an economic evaluation of the industry because of their very high per acre input requirements, particularly of hired labour.

#### Apples

Apples are grown commercially in all regions of Canada except the Prairies. They are the most important single fruit grown in Canada accounting for 45 per cent of the farm value of all fruit produced, 13 per cent of all fruits and vegetables and just under one per cent of total cash farm income. British Columbia is the leading province in apple production, producing onethird of the Canadian output over the crop years 1962-63 to 1966-67. Ontario ranked second, producing about one-quarter of the crop in the above period. Quebec followed with production close to the Ontario level. Nova Scotia produced 13 per cent of this crop and New Brunswick two per cent. Data on production by provinces are presented in Table 9.

(Crop Year July 1–June 30)							
Province	1957-58 to 1961-62	1962-63 to 1966-67	1967–68	1968-69			
	(thousand pounds)						
Nova Scotia New Brunswick Quebee Ontario British Columbia	108,261 20,025 154,395 196,344 237,285	127,197 20,700 241,920 255,492 313,551	157,500 22,500 232,200 267,390 303,165	125,550 22,500 252,180 273,600 229,545			
Canada	716,310	958,860	982,755	903,375			

TABLE 9	
Apples, Production in Canada by Provinces 1957-58 to 1968-6 (Crop Year July 1-June 30)	59

SOURCE: Quarterly Bulletin of Agricultural Statistic, various numbers, Ottawa, D.B.S.

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Apple consumption in Canada has been increasing on a per capita basis in both fresh and processed forms. The following tabulation presents 1964-66 data as well as 1980 projections respecting per capita consumption:

Product	1964-66	1980
	(pounds p	er capita)
Fresh Processed (fresh equivalent)	26.5 13.5	27.0 19.0
- Total	40.0	46.0

SOURCE: The D.B.S., in Reference Paper 25, shows per capita consumption in fresh form at 19.8 pounds and in processed form at 9.3 pounds annually for 1958-59. However, these date are not strictly comparable with those in the above table.

The rapid increase in per capita consumption of processed apples is very significant. However, it must be recognized that apples for processing have a lower unit value at farm level than those going to the fresh market. In considering per capita data, it must be noted that in the United States there has been a six-pound decline in consumption in the fresh fruit form over the past 20 years. However, consumption habits are different in Canada enabling the Task Force to accept the Canadian data, including the projections to 1980. Apple consumers demanding specific varieties, and the production and marketing sectors of the industry are adjusting to these demands. Controlled atmosphere storage and new apple products, (e.g. frozen apple crisp) are important factors in expanding consumption.

Supply and disposition data presented in Table 10 show a rapid expansion in production, fresh exports, processing, and in consumption of fresh apples over the 1957-67 period. Imports are five to six per cent of total supply, but exports are two to three times as large as imports. The major processed products are apple juice, canned apples and apple sauce amounting in total to an average of 320 million pounds fresh equivalent over the years 1962-63 to 1966-67. Over those years consumption of processed products were about 75 per cent of consumption of fresh apples.

Item	Average 1957–58 to 1961–62	Average 1962–63 to 1966–67	(1967–68)
	(millions of pounds)		
Production	716	959	983
Imports	55	51	66
Total Supply	772	1,010	1,049
Fresh exports	112	138	169
Processed, fresh equivalent	210	320	350
Waste	104	130	130
Available for fresh use	346	422	400
Net trade	+56	+87	+103

		TABLE	10			
Apples.	Supply and	Disposition,	Canada	1957-58	to	1967-68

SOURCE: Economics Branch, C.D.A.

#### CANADIAN AGRICULTURE IN THE SEVENTIES

Apple exports increased from an annual average of \$7.1 million in 1957-58 to \$14.7 million in 1967-68, mainly to the United States' market which has been expanding very rapidly. Increasing shipments have gone to some 15 to 20 other countries. Almost all the small new export markets are the result of the excellent export market development and selling job done by the British Columbia Tree Fruits Limited, a producer-controlled marketing agency. The same organization has in the past five years accounted for more than one-half of the exports to Britain and for 80 per cent of shipments to the United States. The implications of increasing import restrictions by Britain and the coming free trade with the United States are examined in the policy section at the end of this chapter. An analysis of the annual variability of production, marketings and farm prices shows that compared with nine other farm commodities apples ranked about the middle for production and marketing variability but second after potatoes for farm prices variability. With this product also there is a need for a re-assessment of marketing policies, for market research and development and for greater producer control over marketing.

#### Strawberries

Strawberries are the largest and fastest growing of the "small fruit" group which also includes raspberries, blueberries etc. Among the fruits, the crop ranks second to apples in terms of farm income. Commercial production occurs in all regions except the Prairies and is most important in British Columbia. Over the years 1962-66 average annual farm values by regions were: Maritimes \$1.2 million; Quebec \$1.5 million; Ontario \$1.8 million and British Columbia \$2.3 million for a Canadian total of \$6.8 million.

The average acreage of strawberries in the above period was almost 13,000 acres. Yields average less than 3,000 pounds per acre. This compares with an average yield of 6,800 pounds in the United States over the past ten years. Average farm prices over the past five years ranged from 24 to 31 cents per pound. Because strawberries are extremely perishable even in cold storage and because harvesting in each area is confined to a short period of about one to three weeks, there is usually great pressure to market the fruit. As a result, the price of the fresh produce is relatively unstable although processing provides an important and stabilizing outlet, especially in British Columbia. In 1962-66, nearly one-half of Canadian production was processed but in British Columbia the proportion was more than 80 per cent.

Per capita consumption in fresh form is constant but consumption in frozen form is increasing. Over the years 1962-66 average per capita consumption was only three pounds, with 1.9 in fresh form and the balance in processed form. Canadians consume about 65 million pounds of strawberries annually of which about one-half are imported either fresh or as frozen berries.

The Canadian strawberry industry is vigorous and growing. Between 1957-61 and 1962-66 production increased from an average of 27.7 to 32.1 million pounds annually, and increased to more than 41 million pounds in both 1967 and 1968. Imports have declined by 15 to 20 per cent in the 1960's.

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The present Canadian Most Favoured Nation tariff on fresh strawberries gives producers the right to opt for a rate of 1.6 cents per pound for a maximum of six weeks between April and August; entry is free from September 1 to March 31 and ten per cent *ad valorem* at other times.

The U.S. tariff on fresh strawberries, applicable from June 15 to September 15, is being reduced from 0.4 cents per pound in 1969 to 0.2 cents per pound by 1972. If North American strawberry prices continue to rise, the relatively low specific duty will present no obstacle to competitive Canadian exports to the U.S. market by 1972. There is a great need and an opportunity for improvement in yield technology through greater use of irrigation, better cultural practices, the use of higher yielding varieties and the use of improved marketing techniques. Growing earlier and later varieties will also lengthen the marketing season for Canadian producers.

#### Peaches

Peaches are the most important of the tender fruits, (peaches, cherries, pears, plums and prunes) produced in Canada, representing about 40 per cent of the value of this group. They are grown commercially only in Ontario and British Columbia. For the period 1962-66, Ontario produced 80 per cent of Canadian output with the balance in British Columbia. Numbers of trees declined by 15 per cent over the period 1956-60 to 1962-66 while production declined by 12 per cent over that period. The land area devoted to peaches decreased by 15 per cent from 1951 to 1961 and by a further 19 per cent from 1961 to 1966. Yields increased sharply during the 1950's and moderately in the 1960's. Much of this however was the result of taking the less productive areas out of this crop.

Per capita consumption of peaches in fresh form reached a peak in 1952 at seven pounds and has declined continuously since, now being less than five pounds. Consumption in processed form has varied from 4.2 to 4.5 pounds per capita, with no trend. Because of rising population, total consumption of peaches, both fresh and processed, rose by five per cent during the six year period 1956-60 to 1962-66.

The foregoing data point to an industry in slow decline. Exports have been negligible and imports have grown as a proportion of total supply in the Canadian market. Prices and gross incomes, however, have risen. Price increases have generally been consistent with those in the United States, which supplies most of Canada's imports.

Ontario Department of Agriculture and Food studies show that farmers in the industry have made sweeping changes in farm organization and practices as a means of fighting spiralling costs. (The studies covered the periods 1954-56 and 1965-66). By far the most rapidly rising cost was that for use of land and buildings. The value of peach land doubled from 1955 to 1965 rising from about \$1,000 to \$2,000 per acre. The peach area generally is highly subject to the influences of urbanization and some properties to be used for housing subdivision recently changed hands at prices

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ranging from \$3,000 to \$6,000 per acre. Short of zoning regulations, much of the present peach area could pass into other uses in one or two decades.

About 55 per cent of Canadian production is consumed in fresh form and 45 per cent is processed. Domestic peaches have encountered serious problems in the processing market. Imports, which in 1956-60 claimed 29 per cent of the Canadian market, expanded their share to 53 per cent in 1962-66 and to 68 per cent in 1968. Australia, a traditional supplier was virtually out of the Canadian market (one per cent of canned imports in the period 1958-62) yet by 1967 Australian imports supplied 38 per cent of the market. In 1967 Canadian producers and the processing industry alleged that the great increase in imports was a result of Australian government export subsidies. They asked (1) that representations to the Australian government be made; (2) that the question of the alleged subsidy be examined; and (3) that failure to secure satisfaction from the Australian government should be met with protection and/or subsidies to the Canadian industry. While the above allegations were never conclusively proven, after negotiations between the two governments, the Australians early in 1968 raised the price of shipments to Canada. Later that year the Canadian government introduced a program providing for the remission of seasonal duties on tender fruits for processing if domestic supplies should not be adequate.

It is important to tender fruit growers and to consumers that peaches account for 40 per cent or more of the volume of processed tender fruit. If the Canadian peach-processing industry were to be eliminated, it would have serious effects on the continued viability of the processing of other tender fruits. A sharp decline in volume handled by this processing sector would require a drastic restructuring of the industry.

## Other Fruits

While there are a large number of other fruits of economic importance, none accounts for as much as one-fifth of one per cent of Canadian cash farm income. We note here those fruits which in the period 1962-66 produced average annual cash farm incomes in excess of one million dollars. These were, in thousands of dollars:

	1962-66	1967
- Grapes	5,634	7,196
Cherries	4,870	7,493
Blackberries	3,860	n.a.
Raspberries	3,820	3,475
Pears	3,663	4,814
Plums and Prunes	1,267	1,365

## POLICY ISSUES

In the introduction to this chapter we noted that policy problems in the fruits and vegetables industry had occasioned far more concern than its economic importance would suggest. These arise at provincial, national and international levels. The Task Force has considered some of the leading international trade problems.

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Maritime potatoes, vitally important to New Brunswick and Prince Edward Island, have actual and potential comparative cost advantages over other Canadian and North Eastern United States areas. The development of the industry and thus of the farm economies of these two provinces, is frustrated by the level of the United States tariff and the accompanying quota arrangements. The Task Force recommends as a matter of urgency that the Federal Government move to negotiate reductions on tariffs both ways and elimination of the U.S. quota. In spite of the difficulties in achieving reductions the target should be the total removal of both.

The Task Force recommends that the Federal Government take strong initiatives toward serious discussions of free trade for a further group of vegetables and fruits in which Canada has comparative advantage including carrots, onions, cole crops, turnips and cranberries. Apples are virtually on a free trade basis now and will be completely free in 1972. For those crops placed on a free trade basis an increase in resources invested and substantially higher incomes can be projected. Trade would develop on the basis of serving particular geographic areas of the United States during the harvest and normal storage periods. The scope of the U.S. market is enormous and very large population concentrations live close to important Canadian producing areas.

The proposal to move to free trade on the products named above would leave some of the Canadian potato industry exposed in a non-viable position. The Task Force recommends that any move toward freer or free trade be accompanied by the provision of adjustment assistance to those sectors adversely affected by any such move.

The poor prospects for exports of apples to Britain and Europe and our success in exporting to the United States leads the Task Force to recommend that the Nova Scotia apple industry concentrate its sales efforts on the American market.

### DUMPING, DISTRESS AND INJURY

Canadian farmers must compete with low priced imports entering at cyclically or seasonally depressed prices. Horticultural producers feel it particularly, since the harvest season in the United States is earlier by up to two or three months compared to Canada. For the Task Force general position on trade policy, trade strategy and adjustment assistance the reader is referred to Chapter 4 on International Trade.

## MARKETING BOARDS

In Ontario there are eight fruit or vegetable marketing boards and an apple commission; in British Columbia two vegetable boards and a tree fruits board; in Alberta and Manitoba there are commissions which control potato marketing; and in Prince Edward Island there is a potato marketing board

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which imposes neither production nor marketing controls, although comprehensive marketing controls may be set up in 1970.

While the business conducted by some of these boards is so small they could scarcely do an efficient job, others particularly the boards in British Columbia, do an effective job. The British Columbia success is based on strong market development and merchandizing emphasis. Some of the Ontario boards, e.g. the peach marketing boards, provide very useful marketing services. But why have two boards for peaches and two for grapes? Consolidation of some boards is desirable. The Task Force notes with approval the single board created to control the marketing of all vegetables for processing in Ontario. The Ontario Onion Producers Marketing Board on the other hand ceased operation in 1969. A stronger commercial orientation may permit more aggressive exploitation of the American market.

While vegetables for processing in Quebec are under generally satisfactory contract arrangements, producer marketing of fresh vegetables is most unsatisfactory. Producer marketing boards for the more important fresh vegetables would result in improved grading and pricing. Quebec has the potential to increase production considerably both on the black organic soils and generally in areas within 40 miles of Montreal. Funds from the Canadian Dairy (Adjustment) Commission should be used to aid in this development. However, we stress that in the development of the latter area marketing is even more important than production. Without continuity of supply, high quality, and attractive packaging Quebec products could not replace American and Ontario imports which presently dominate the Montreal market. Produce marketing controls would be required to replace the present unsatisfactory marketing structures.

Inter-provincially, there are problems of competition and unco-ordinated action between provincial boards. Also board-marketed fruits and vegetables in some provinces compete with the products marketed privately or by co-operatives in other provinces. The best example of the variation is in apples. British Columbia uses comprehensive board controls and aggressive marketing and merchandizing. Ontario uses less stringent marketing controls through its Commission. Quebee has provincial grading which is not adequately enforced so culls and windfall apples find their way to the fresh fruit market. Nova Scotia has a strong co-operative which performs limited functions well but there are no marketing controls. The result is that there is much unproductive competition which tends to erode prices on a national basis. This is a prime example of the need for co-ordination across provincial borders, whether it be secured by a national apple marketing board plan or something short of that. No such organization can be established without strong all-producer marketing organizations in Quebee and Nova Scotia.

Just as the need exists for producer controls over potato marketing in the Maritimes, there is also a need for co-ordination across provincial borders probably through a national potato marketing board. In proposing extension of marketing controls either for potatoes or apples, precautions must be taken as stated in Chapter 12 on Marketing Boards, to ensure against the use of boards to restrict inter-provincial trade.

It is to the detriment of growers that with some very notable exceptions, senior management personnel of producer marketing boards, having come up

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through agriculture, have not had the training and experience in marketing essential to success. Marketing and management specialists must be recruited from business firms outside agriculture, besides exchanging successful marketing specialists between marketing boards, irrespective of commodities. Personnel from the British Columbia producer marketing boards and co-operatives could make very useful contributions to improved marketing in Eastern Canada.

Some marketing boards, such as those marketing vegetables and fruit for processing, negotiate with processors for uniform conditions and terms of sale and for minimum prices. The major problem of such bargaining is that there is no legal possibility of an aggressive producer forcing himself into the industry by offering to produce and sell at prices lower than those negotiated. Selection of growers becomes one of the functions of each processor and must be performed without price as a guide. There is a dilemma here; producers need the assurance of contracts before committing large sums to the production of specialized crops, and processors too, need to be assured of at least a basic supply through contracts. Yet the pattern of negotiations eliminates price competition among producers within the board's area, with a consequent adverse effect on production efficiency.

The emphasis on an orientation toward exports in the earlier part of this chapter suggests the need for sectors of the fruits and vegetables industry to undertake export promotion. This should be on a national basis with producer-marketing boards providing leadership but it must involve all groups concerned with the product, including governments. Considerable success has attended such efforts in the United States. Producer marketing organizations should have a central role in export promotion because only such groups can make the necessary "check-off" at the farm level. It must be recognised that promotion activities on behalf of some products, e.g. carrots, onions and turnips may have little or no value, for with these commodities price and quality rule.

Deriving from the foregoing commodity analysis, we state very bluntly that in the fruit and vegetable sector marketing institutions or machinery, marketing methods, in fact in the whole conceptual approach to marketing, Canada is far behind the United States. And yet in every part of the industry very strong competition comes from that country. The Canadian industry must make an aggressive approach to improving this situation in all its aspects from the farm to retail levels. We note with approval that the federal manpower training program has established courses for workers at the wholesale and retail levels. These very successful efforts should be expanded and extended to other market functions. But this is only a beginning. Growers, the trade and governments must work together for the improvement of all aspects of marketing of these products. This of course requires much more research on marketing and market development.

# PROCESSING INDUSTRY

The fruits and vegetables processing industry is exceedingly competitive and yields low returns on equity capital while making a very important

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contribution to Canadian agriculture and consumers. A major public policy issue arises from the increasing domination of the industry by American companies in the same business. Research for the Task Force estimates that over 70 per cent of the pack of fruits and vegetables is processed in American owned plants. The parent company of some of these Canadian firms appears reluctant to use in Canada the advanced machinery and technology used in its American plants. The American investors may have good private reasons for such practices but such a policy means that technology in Canada advances more slowly than would otherwise be the case.

Perhaps more important is the fact that some American parent companies restrict their Canadian subsidiaries in the export field, preferring to handle this business from U.S. plants. In the case where the American companies have world-wide operations, they generally refuse to allow Canadian subsidiaries to export to any country where the parent company has a local plant. The restriction has happened in situations where the Canadian company, before acquisition, had successfully penetrated markets in third countries. The Task Force suggests the Department of Industry, Trade and Commerce attempt to devise a system of economic measures or incentives to encourage foreign companies in Canada to allow their Canadian subsidiaries to participate in export trade.

## QUALITY AND GRADING

Consumers frequently make unfavourable comparisons between Canadian products and those of the United States. While grade standards and lax enforcement of government grading regulations are in part responsible for these criticisms, it is not a general situation. For many commodities American packers sell under a brand name rather than on the basis of government grade. The usual practice is for the packer to set his own standard significantly above the U.S. No. 1 grade. The same practice is occurring in Canada.

The Task Force concludes that, in general, grading is well done at the time the actual grading takes place. But, again in general and recognizing some notable exceptions, packaging and merchandizing of the Canadian product falls far short of American standards. This was brought out clearly at the Canadian Agricultural Congress with respect to lettuce. In the discussion on potatoes the specific suggestion was made to change the grading system to introduce more relevant bases than that of size and visual characteristics. Throughout the range of fruits and vegetables there is need for establishing higher requirements in the Canada No. 1 grade standard. Producers and shippers should welcome a review of grading standards. More important still is that grading be rigidly enforced. It is the industry as a whole which suffers from poor inspection.

## **CROP INSURANCE**

The commodity section of this chapter has sketched the wide fluctuations which characterize yields in many of the fruits and vegetables crops grown in

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Canada. The hazards of committing large amounts of resources to annually purchased inputs, at an unusual rate of risk not knowing whether they will be recoverable from sale of the crop, is a heavy risk burden for growers to carry. It is surprising that the provinces have not moved more quickly toward embracing the output insurance provided under the federal Crop Insurance Act of 1960. (Under the Act the Federal and provincial governments share equally in the administrative costs of any approved plan, while the Federal government contributes 25 per cent of the premium costs for all plans). Only British Columbia has made comprehensive use of this legislation for fruit and vegetable production. The annual yields of 13 fruits are covered, as well as strawberry plants, grape vines and fruit trees. Prince Edward Island, Ontario and Manitoba make insurance available on potatoes. Three provinces provide insurance for a single vegetable crop for processing.

The Task Force is convinced the federal-provincial schemes under the Crop Insurance Act are highly advantageous to farmers. Therefore we recommend that farmers and provinces make expanded use of the Crop Insurance Act. Although endorsing the present program, the Task Force sees advantage in expanding the geographic area of insurability for some crops beyond the boundaries of a single province because it is generally desirable to use the largest possible base for any particular crop insurance scheme. Some of the provinces may have only one hundred or less growers for a particular crop. A serious crop failure for potatoes or tobacco in Prince Edward Island might threaten the solvency of a provincial scheme. But if six, seven or ten provinces operated a single crop insurance plan for potatoes, solvency would be assured. The same may be said of apples, which are produced in an important way in four provinces. Therefore, the Task Force recommends an expansion of the Crop Insurance schemes toward regional and ultimately national plans for some crops.

#### RECOMMENDATIONS

The Task Force recommends that:

Potatoes

- 1. The Federal government take the initiatives necessary to ensure that free trade in potatoes be established between Canada and the United States, and that adjustment assistance be provided to farmers who would be adversely affected by free trade.
- 2. Producer marketing boards be used for potatoes in Prince Edward Island and New Brunswick.
- 3. Assistance be provided for rapidly re-structuring potato farms in New Brunswick and Prince Edward Island to larger-sized units. This could be achieved through Regional Economic Expansion plans.
- 4. Grading of potatoes be based on objective standards other than visible characteristics; and grading be rigidly enforced in all provinces.

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## **Apples**

- 5. Marketing board controls be used in Nova Scotia and Quebec; and the programs of producer marketing agencies in the four major producing provinces be co-ordinated.
- 6. Nova Scotia orient its marketing policies toward penetration of the United States market.

## Other Vegetables

- 7. The Canadian government seek free trade arrangements with the United States on carrots, onions, turnips, cole crops and cranberries.
- 8. Producer marketing controls over fresh vegetables be established in the Province of Quebec; and assistance be provided for expansion of vegetable production in the Montreal area and on the organic soil areas along the United States border south of Montreal.

## Dumping and Injury

 Negotiation be initiated with the United States respecting the introduction of objective standards for the application of quick relief against dumping and/or injury from low priced imports.

## Marketing Boards

10. In general terms, marketing boards place more emphasis on market development and that these boards improve management practices by employing highly skilled marketing specialists.

## Processing Industry

11. The federal government broaden its program of economic incentives which could encourage all sectors of the processing industry to exploit every economically feasible export opportunity.

## Crop Insurance

12. While endorsing crop insurance schemes under the Crop Insurance Act of 1960, consideration be given to making crop insurance available for potatoes, apples and other products on a national basis. Such schemes would, of course, require actuarial soundness within each province or sub-region of a province.

## Marketing

13. That growers, the marketing sector and governments move rapidly to modernize marketing structures and the performance of marketing functions. This will require a great expansion of marketing research with an emphasis on market development.

FRUITS AND VEGETABLES

# chapter nine

# OTHER CROPS

# PART A-TOBACCO

# IMPORTANCE OF THE TOBACCO INDUSTRY

Tobacco is one of the most important cash crops in Canada. Production of all types in 1968 totalled 223 million pounds (green weight) of which about 72 million pounds were exported and about 150 million pounds were sold in Canada. The total 131,000 harvested acres produced a gross cash farm income in that year of \$142 million.

Total government revenue from all tobacco, cigar and cigarette taxes in 1968 amounted to nearly five times farm returns or about \$700 million. The Federal share was \$555 million. Flue-cured tobacco export earnings were \$55.9 million. Imports ranged between four and six million pounds in the late 1960's. Value added by manufacturers was \$171 million in 1966. National data respecting acreage, production and prices are presented in Table 1.

Ontario tobacco production, almost entirely flue-cured, accounts for more than 90 per cent of tobacco acreage and a larger share of total production. But Quebec produces significant quantities of flue-cured, cigar and pipe tobaccos. Flue-cured tobacco production is beginning in the Maritime Provinces, with about 100 growers in the three provinces. More than 3,000 acres were grown there in 1968 and further expansion in this region is expected.

The introduction of the flue-cured tobacco to the eroded drifting sandy soils of counties along the north shore of Lake Erie transformed these poor areas to highly productive agricultural lands. The 4,500 Ontario tobacco farmers have employed up to 40,000 seasonal labourers in the harvesting season. This large requirement is being significantly reduced by the mechanization of harvesting and curing methods.

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Favourable climatic and soil conditions have given Ontario a dominant position in the Canadian tobacco-growing industry. A tariff of 20 cents per pound on unstemmed and 30 cents per pound on stemmed flue-cured tobacco completes the protection of the industry, however, under a Commonwealth arrangement dating to the early 1930's South African tobacco enters free of duty. Growers have exercised control over acreage since 1934. The present board, the Ontario Flue-cured Tobacco Growers' Marketing Board has been the instrument for control since 1957.

	Average	Average		1968-69
Item	1957-61	1962-66	1967-68	(Estimated)
Acreage		<u> </u>		······
Flue-cured	123,806	107,695	130,170	127,600
Burley	4.350	2.759	1.578	1.655
Cigar	3,932	2.531	2,300	1.870
Darks	479	401	325	335
Total	132,567	113,386	134,373	131,460
Production	(thousand pounds, green weight)			
Flue-cured	184.450	183.411	211,300	217 000
Burley	7.650	5.658	3 074	3 310
Cigar	5,164	3,852	3,403	2,929
Automo Francisco	(	cents per poun	d, green weigh	nt)
Average rarm rrice	51 77	67 01	71 25	
Durlay	36.05	11 76	(1.2)	

Canada,	Tobacco Acreage,	Production and	Prices,	1957-61	to 1968-69
	(Crop Year	October 1 to Se	ptembe	r 30)	

SOURCE: Canadian Agricultural Outlook Conference, C.D.A. 1969, Vol. 1 p. 179, and Canadian Farm Economics, various numbers.

Tobacco growing "Rights" attach to land so that the only means of entry to the industry or expansion of acreage is by the purchase of land. Acreage allotments or the acreage each grower is permitted to grow in any year is regulated very stringently. Allotments are expressed as a percentage of the "basic marketable acreage" on which tobacco may be grown. This percentage is varied from year to year on the basis of estimates of domestic demand and of export negotiations between the Ontario Board and the Tobacco Advisory Committee of Britain. These negotiations have become more important since sanctions were imposed on Rhodesia. The Federal Department of Industry, Trade and Commerce exercised considerable influence in such negotiations. Discussions are also held with domestic manufacturers. During the 1960's the acreage of flue-cured tobacco grown in Ontario has varied from 73,000 to 128,000 acres. In recent years the Ontario Board has permitted transfer of annual acreage allotments from one farm to another when the land was held under common ownership. Thus tobacco has been shifting to more productive land, hence strengthening the economic position of the industry.

The acreage control has been so severe that land with "Rights" attached has become very valuable. "It was found that buyers offered and paid prices for tobacco farms ranging from \$2,000 to \$3,000 per acre of tobacco 'Rights' "<sup>1</sup>. This may be compared with prices of around \$300 per acre for land without "Rights". These exceedingly high land values enter the cost structure and have in an important way increased production costs. Production control has also affected the combination of resources. To maximize returns per acre on the limited acreage farmers have increased the use of fertilizer and most of them now use irrigation to guarantee yields. These returns increased by about 50 per cent in the 1960's, reflecting changes in inputs and general technological advance. Again, these intensive practices lead to higher unit cost.

# PROBLEMS OF THE INDUSTRY

A major problem of the industry centres on tobacco consumption and particularly on governmental attitudes and proposals aimed at reducing the use of the product for health reasons. The House of Commons Committee on Health, Welfare and Social Affairs released a report which will almost certainly become the basis for legislation. The report proposes a freeze on tobacco promotion expenditures, a ban on the use of broadcast media and phasing out all advertising and promotion over a four year period. The Federal Minister of National Health and Welfare has repeatedly warned about the health hazard in using tobacco. A health hazard warning may be required on all cigarette packages.

Per capita consumption of cigarettes grew slowly from 1,939 per year in 1959 to 2,316 in 1967 but dropped by three per cent in 1968. In 1969 per capita consumption again moved ahead. Nevertheless, the increased use of filter cigarettes has brought a reduced demand for flue-cured leaf tobacco. Domestic demand for leaf tobacco has apparently stabilized temporarily at two to four million pounds below the 1967 level. Barring further and unforeseen pressure by government against smoking, it is the judgment of the Task Force that domestic demand will be fairly stable until 1980. The imposition of new taxes, feared by the industry, could lead to a further decline in demand for leaf.

A second industry problem centres on the Ontario producers becoming increasingly high-cost growers. This becomes more critical with the pace of inflation and as a result of emphasis which the Ontario Board places on limiting total output through acreage restrictions as a means of achieving higher prices. There is growing dissatisfaction among export buyers of

**OTHER CROPS** 

<sup>&</sup>lt;sup>1</sup>G. I. Trant, Production Opportunities on Ontario Tobacco Farms, University of Guelph 1966, p. 20.

Canadian tobacco with the high prices of the past four or five years and some complaint about quality. Britain reduced her target import by five million pounds in 1969; the British Advisory Committee has indicated that the import target from Canada for 1970 may be reduced by a further four to nine million pounds. Britain's action is important because of Canada's dependence on the British market—over the years 1966-68 more than 90 per cent Canadian flue-cured exports went to Britain.

Canada has virtually lost her tobacco market in Western Europe, the most important import consuming area in the world. This market took 7.6 million pounds in 1962 and 5.5 million pounds in 1963. The 1968 exports to Western Europe were just over one half a million pounds. Farm prices in 1969 were somewhat lower than those of the previous two years and some markets on the Continent have been recovered but lost markets are difficult to regain. It is generally conceded that Canada, with short supplies, lost opportunities for developing export outlets when Rhodesian tobacco sales came under sanctions. The return of Rhodesia to the British market could have serious consequences for Canadian exports. The current tobacco policy negotiations within the European Economic Community could further limit the access of tobacco from North America to that area. The prospect of British entry into the E.E.C. threatens continued large exports to Britain under Commonwealth preference. Reflecting these situations, the Ontario Board in 1969 adjusted its crop planning policy to provide additional acreage for new market development and for an attempt to win back lost markets in Britain and Western Europe.

The continuing substantial stockpiles held by the United States Government represents another unfavourable factor. All exports from the United States are subsidized by five cents per pound and about 20 per cent of United States tobacco exports are made under other special government assisted programs.

Within Canada the successful introduction of flue-cured tobacco in the Maritime Provinces constitutes a threat to the Ontario production control and price maintenance scheme. The Maritime acreage in 1969 was 3,135; double the acreage of the previous year. On the basis of land suitable for tobacco production, acreage in the Maritime could increase to three, four or more times the 1969 acreage. The Maritime area has the advantage of low-valued land and the absence of restraints on production.

The use of marketing board powers or supply management by the Ontario Flue-cured Tobacco Growers' Marketing Board raises questions of concern beyond the tobacco industry. Production controls under authority granted by a provincial legislature have virtually excluded new entrants to the industry and thus reduce the opportunity for efficient farm managers to produce tobacco. Furthermore, the Ontario Board likely operated in such a way as to reduce the export earnings of agriculture, especially when growers chose to underplant their allotted acres. It has operated in a short-run context, losing sight of long-run considerations. The production control program has brought serious problems to tobacco farmers themselves. Capitalization of the value of "Rights" into land values raises  $costs^2$  and acreage restrictions lead to an inefficient use of resources. High prices are required to meet rising costs. But to a great extent the rising costs are a result of the production control program. Thus they are quite different from the rising costs to which all sectors of agriculture are subject, nevertheless the tobacco industry is equally subjected to general inflationary forces.

The Task Force concludes that present land values in the Ontario industry cannot be sustained regardless of the way in which the production controls are administered and that the severity of the use of production controls has been contrary to public interest. Furthermore, the great emphasis on the domestic and British markets and generally treating the other export markets as residual, are not consistent with the interests of the industry itself.

## RECOMMENDATIONS

The Task Force therefore recommends that:

- 1. Tobacco growers, processors and manufacturers, the federal government and interested provincial governments join in the creation of a tobacco export development fund. This would support an aggressive export trade development program. Intensive exploitation of export market opportunities, involving the use of trade missions, trade fairs and where advisable, the use of export subsidies in a market development context, should be used.
- 2. The Ontario Flue-cured Tobacco Growers' Marketing Board reduce the "basic marketable acreage" of growers who under-plant allotted acreage. Such basic acreages accruing to the Board could be sold on a tender basis.
- 3. The Ontario Board should continue, on a permanent basis, the provision in its program which now permits transfer of acreage allotments from less productive to more productive areas.
- 4. Maritime growers should form an organization which would permit a "check-off" to allow participation in the export development fund operations.
- 5. Maritime growers should take the action necessary to insure that primary processing facilities are available in that region.
- 6. Intensive research into the production and manufacture of tobaccos that can be readily marketed under the demand conditions, including consideration of effects on health, of the 1970's be undertaken and supported by government, the manufacturing industry and tobacco growers.
- 7. A Federal government inter-departmental committee be created to make a continuing assessment of the effect of anti-tobacco activities of the Federal government, and consider a program of adjustment assistance for the industry, if required.

\*See Appendix to Chapter 12.

OTHER CROPS

#### INTRODUCTION

A very large proportion of the sugar consumed in Canada is imported as raw cane sugar as the Canadian sugar refineries are protected by a high tariff on refined sugar. Only about 15 per cent of Canadian sugar consumption is supplied from domestic sugar beets, which are protected by a prohibitive (27.5 per cent *ad valorem*) tariff and heavily subsidized by deficiency payments under the Agricultural Stabilization Board. The evident question is, what purpose the high levels of protection and subsidies achieves and whether the costs to Canadian consumers, taxpayers and industrial users of sugar are justified.

## THE SUGAR BEET PRODUCING SECTOR

While only 15 per cent of the national sugar consumption is supplied from sugar beets, the amount varies from region to region. The Prairie market is largely supplied by beet production located in Alberta and Manitoba; British Columbia and Eastern Canada are almost entirely supplied from imported raw cane sugar, refined in Canada. There is little competition between regional market suppliers. Transportation costs from either the East or West Coast areas afford "protection" to the Prairie beet industry. In contrast, Quebec growers, just a few miles from large cane refineries, which are located near East Coast seaports, are exposed to direct competition with them.

Sugar beets are grown in Alberta, Manitoba and Quebec and processed by factories located in these provinces. The small Quebec factory is governmentowned. Sugar beets were grown in Ontario until 1967 but production ceased with the closing of the Chatham factory by Canada and Dominion Sugar in early 1968. Beets are normally grown under a contract signed between grower and company before the beets are planted. Without specifying an explicit price, the contract defines the basis for farmer participation in factory returns from refined sugar, beet pulp and molasses. Data on numbers of growers (1966) and acreages in recent years are presented below:

	No. of Farms	Acres	
Province		1962-66	1968
Quebec	927	9,808	11.381
Ontario	566	14.216	
Manitoba	542	25,689	29.079
Alberta	971	39,788	39,206
Canada	3,006	89,501	79,666

TABLE	1
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Growers and Acreages, Sugar Beets, Canada Selected Data

SOURCE: Canadian Agricultural Outlook Conference, C.D.A., 1969 Vol. I, p. 176.

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Production averaged 1.2 million tons in the 1962-66 period and was 1.1 million tons from the 1968 crop. There were 3,006 producers in 1966. Most of them have important acreages of other crops and find sugar beets very useful in crop rotations.

The acreage devoted to sugar beets has been in gradual decline since 1958, yet in that year the crop became eligible for price support. Deficiency payments have been made each year except in 1963 and 1964 when record high world sugar prices prevailed. The ten year decline has occurred despite the substantial size of the total deficiency payments relative to the size of the commodity sector. In 1967, \$6.3 million were paid to 3,275 growers, an average of \$1,924 per grower, not counting approximately \$2 million paid as adjustment assistance to Ontario growers following the closing of the Chatham factory. The above data do not take account of the substantial annual losses involved in the operation of the Quebec beet sugar refinery, which losses are in effect a subsidy to producers. Further, irrigation water is highly subsidized in Alberta, as are the transportation and housing of the field labour.

Table 2 presents data on the extent of federal participation in the beet sugar industry. The government announces the level of support each year, as a percentage of the average farm price in the previous ten years. It then makes up the difference between prices paid by processors and the support level by means of a deficiency payment based on a formula including the world price and the sugar content of the beets.

Усаг	Percentage of previous 10 years	Support Level	Returns from Processors	Federal Payment <sup>1</sup>	Total Returns
			(dollars per standard ton <sup>2</sup> )		
1959-60	93	93 per cent	11.62	2.51	14.13
1960-61	100	14.23 per 270 pounds	11.77	1.40	13.17
1961–62	102	13.18 per 250 pounds	11.62	1.93	13.683
1962-63	106	13.72	18.64		18.64
1963-64	109	13.72	18.73	-	18.73
1964-65	104	13.72	11.62	3.15	14.77
1965-66	104	14.35	10.78	6.38	17.16
1966-67	105	14.35	11.00	4.83	15.83
1967–68	114	15.50	10.64	5.41	16.05

 TABLE 2

 Support Level and Average Returns for Sugar Beets 1959-60 to 1967-68

<sup>1</sup> This subsidy was 3.23 on the 1968-69 crop.

<sup>2</sup> Equivalent to 250 pounds of refined sugar.

<sup>3</sup> Ontario also paid a small subsidy on the 1961 crop, and Quebec has paid a subsidy of two to three dollars for several years.

Source: Canadian Agricultural Outlook Conference, C.D.A., 1969, Vol. 1, p. 176

#### **OTHER CROPS**

The Task Force was informed but unable to confirm, that new production methods could make sugar beets competitive with cane sugar without the use of subsidies. If this were the situation it would make the continuance of federal subsidies unnecessary.

The question is whether such subsidies and protection are justified. They do not have the effect of protecting the Canadian consumer from occasional high world prices, as in 1963 and 1964 when the Canadian retail price averaged from 14 to 16 cents per pound. Canada could become self-sufficient in sugar should a crisis occur in world trade but only at a very high cost. Sugar beet producers are highly non-competitive at current and envisaged world price levels. Therefore the Canadian consumer and taxpayer have heavily subsidized a non-competitive industry for doubtful benefits.

#### THE SUGAR REFINING INDUSTRY

The sugar refining sector consists of 13 establishments. The major firms are Canada and Dominion Sugar Company Limited, the B.C. Sugar Refinery Limited, Atlantic Sugar Refineries Company Limited, St. Lawrence Sugar Limited, and the Cartier Refined Sugars Limited. Production of refined sugar in the 1962-66 period averaged 1,920 million pounds annually; and in 1968 was 2,088 million pounds. Consumption per capita in all forms is quite stable at slightly over 100 pounds per year.

The industry appears to be very profitable, with net earnings about onesixth of sales. The profitable situation results in part from a tariff structure under which the British Preferential Duty on raw sugar is 31 cents per 100 pounds while refined sugar has a duty of \$1.09 per 100 pounds British Preferential and \$1.89 Most Favoured Nation. Imports of refined sugar are effectively excluded by the tariff and the refineries appear to take full advantage of this. There is also limited competition among domestic sugar refineries. The eastern Canadian cane sugar refiners were fined on conspiracy charges in 1963 under the Combines Investigation Act. In 1969 the Tariff Board was requested to make a broad inquiry into the tariff structure on sugar, into refined sugar prices, into refiners' margins and into the Canadian beet sugar industry.

### INTERNATIONAL PROBLEMS

Sugar beets are the most elaborately protected and subsidized of all world agricultural products. In a freely competitive market most and likely all of the world beet sugar industries would be wiped out. Nevertheless national defense considerations (of little or no value in the Canadian sugar beet situation) and unalloyed agricultural protectionism have given sugar beets about 40 per cent of the world market. Denial of this large part of the market to the developing countries which are and/or could become efficient producers of cane sugar has seriously retarded their development.

Attempts to limit subsidization of beet sugar producers and assure more stable markets for cane producers have been made for nearly 70 years. But these efforts have been largely frustrated by the development of four preferential arrangements. These include (1) American imports under the Sugar Act. Six foreign countries have quotas each in excess of 100,000 tons; and another 25 have small quotas; (2) the British special arrangements for Commonwealth members; (3) the African and Malagasy sugar agreement; and (4) the Cuban-Comocon special arrangements. These four cover about one-half of the 16-17 million metric tons of world commerce in cane sugar and each provides for prices higher than those prevailing in the free market.

Only at the beginning of 1969 did 12 importing countries, including Canada, and 33 exporting countries implement a new International Sugar Agreement. This Agreement is referred to as free market or residual since it leaves sugar under the four arrangements named above untouched. It is nevertheless a really serious attempt to stabilize world trade in sugar not covered by the four arrangements. The market for free sugar had been chaotic with prices frequently falling below the costs of production of the most efficient producing countries. As an illustration of sugar pricing, it is estimated on the basis of International Sugar Council statistics for 1967 that Australia received 7.1 cents per pound for quota sugar shipped to the United States, 5.9 cents for quota shipments to Britain, and about three cents for sugar sold in markets where no "agreement" was in effect.

The Agreement provides for variable export quotas for producing countries and a program to stabilize world sugar prices between 3.25 cents and 5.25 cents per pound (U.S.) f.o.b. Caribbean ports. Export quota adjustments which apply at various levels of the world price are the major instrument for maintaining price stability. The Agreement contains assurance of supplies to importing member countries at the price of 6.5 cents when the world price exceeds that level. In the sense that the agreement results in an increase in the duty paid, price of Canadian imports of raw sugar of one to two cents per pound, it will mean that beet growers will be able to secure a larger part of their returns in the market and presumably less from the Federal government by way of subsidy.

The Agreement does not include the E.E.C. which refused to sign when other countries would not accede to the E.E.C. demand for an export quota of 1.2 million metric tons. While the fact that the E.E.C. is not a signatory is of some concern, it is unlikely that this bloc will be able to find export markets for sizeable quantities of sugar. A further limitation rests in the fact that Canada may have to turn to non-Commonwealth (and thus higher duty) sources for a larger proportion of her sugar.

### POLICY ISSUES

Judged by the levels of protection and subsidies used for sugar beet farmers in almost all temperate climate countries, Canada's programs are relatively modest. However, the Task Force takes the position that to permanently support a very small sector of agriculture with relatively large treasury outlays per farm is not in the national interest, especially when benefits to the country are marginal. With any effective attack on the price of refined sugar, beet growers would be unable to secure as large a part of their income through the market. Without anticipating the results of the Tariff Board

OTHER CROPS

inquiry, we would point to the substantial gains to the Canadian consumer which would come as a result of a one cent price reduction for refined sugar through a reduction of the tariff. The position of beet sugar growers should not be a barrier to the realization of large possible national gains. It is concluded that if the industry is to have a future that it must be structured in such a manner as to realize every possible efficiency in production and also stress the obligation of the government to Canadian consumers and in providing expanding markets for the sugar of the developing countries.

#### **RECOMMENDATIONS<sup>1</sup>**

The Task Force agreed to inclusion of the foregoing description of the Sugar Beet Industry in this Report but could not reach a concensus on conclusions and recommendations. Professor MacFarlane dissented and his recommendations are shown in footnote 1 below.

<sup>&</sup>lt;sup>1</sup> Recommendations for the Sugar Beet Industry proposed by Dr. MacFarlane:

<sup>(1)</sup> That the Federal government limit deficiency payments to growers who have received them in a recent period; and that payments to any grower be limited to production by that grower in a recent past period, except as in (2);

<sup>(2)</sup> the Federal government be authorized to buy existing rights to deficiency payments. This would parallel the adjustment assistance payments made to farmers when the beet sugar factory in Chatham, Ontario was closed. The government would be authorized to sell or allocate such rights to deficiency payments in such a way as to improve the structure of the sugar beet sector;

<sup>(3)</sup> the level of deficiency payments be gradually scaled down as the industry re-structures toward fewer, larger-scale, more efficient production units.

# chapter ten

# AGRICULTURE IN 1980—A MATERIALS BALANCE APPROACH

# INTRODUCTION—AGRICULTURE IN 1980

In the course of its work the Task Force found itself grappling with many problems—the wheat surplus, the fact of poverty—analyzing many interrelated programs, and making proposals (first tentative and then final) for changes in all sectors. What gradually became apparent was that it was absolutely necessary to attempt to put together in one series of tables a summary of the kind of agriculture which Canada would be likely to have in 1980, given the kinds of changes in technology, markets, and institutions which one could reasonably expect and given, too, the various policies which the Task Force was recommending for wheat, beef, dairy and so on. This chapter is an attempt to do just that.

The heart of our materials balance approach is to be found in Tables 1 to 9. There we have summarized Canadian consumption estimates, drawn together the likely results of our proposed policies and of economic forces, and examined the levels of output, exports, imports and the allocation of land resources in Canada in 1980 for the major products.

Strangely enough, no one seems ever to have done this exercise before. Yet it is essential if one is to judge the consistency of proposals and take into account the interrelatedness of sectors and policies affecting them. It should be one of the duties of the new planning unit of the CDA Economics and Business Branch to prepare annually such a series of predictive tables. The picture that emerges from them is partly descriptive—what the authors think will happen—and partly prescriptive—what they want to have happen through the force of government programs. It should not be thought however,

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that governments in our kind of society can make these predictive tables come true, because production decisions are made, after all, by producers, and consumption decisions by consumers, and processing decisions by agribusiness and import decisions by non-Canadians.

Closely related to the materials balance approach and to all the projections which are involved in it are implicit assumptions about the structure of farming, how many farms there will be, their variations in size and regional location, their variations in capital employed and so on. The structure of farming by 1980 will have changed drastically from that of 1969 just as it has between 1959 and 1969. We devote the final section of this chapter to the Changing Structure of Farming, and in Table 11 we estimate farm cash receipts in 1980.

## A. A MATERIALS BALANCE APPROACH<sup>1</sup>

The Role of Government in 1980 as at present, should be to provide a satisfactory economic climate for farmers and agribusiness. This means high rates of employment in the entire economy, the provision of certain services or assistance to farmers and agribusiness and direct (non-market) assistance to those in poverty. It does not mean a paternalistic approach, nor "directing" nor "managing" agriculture. Yet, the kind of assistance and services government provides will inevitably influence the shape and size of the industry.

Farmers will remain independent decision-makers, sometimes combining in collective bodies for common purposes but always free to decide to disband such bodies and make their own decisions independently. Growing specialization and investment will make farmers increasingly vulnerable to crop, price and financial hazards and will produce a modest but growing willingness to accept limitations to their autonomy in return for greater stability and security of prices and incomes.

Agribusiness will continue to experience a winnowing-out of the inefficient and the unlucky at a rate almost as rapid, in many sub-sectors, as their counterparts in farming. There will be more joint involvement of farmers and agribusiness in marketing commissions, in advisory committees and in Canada Grain Councils. There will also be more attention paid by governments particularly by Departments of Agriculture to the economic health of agribusiness.

Exports and imports will be less fettered by tariffs and quotas but probably more affected by short term ad hoc actions such as the application of "value for duty". The Task Force emphasizes the desirability of Canada taking the initiative in attempting to create a continental market with the United States for grains, oil seeds, potatoes and livestock. Such a development would emphasize the importance of efficiency at three levels: by farmers; by agribusiness (both in supplying inputs and in processing, packaging and promoting); by governments in providing the desirable climate for informed

<sup>&</sup>lt;sup>1</sup>The following pages must be read in careful conjunction with Tables 1 to 9 if they are to be fully meaningful.

decision-making by farmers and agribusiness. Another implication of a common continental market is that all inputs by agribusiness and farmers should be tariff-free.

Red meat consumption in Canada will increase rapidly, providing one of the really bright spots in an otherwise sombre picture. Projected consumption (Table 1) will rise for all red meats but per capita consumption is sure to rise only for beef and perhaps for pork<sup>2</sup>. The Task Force believes Canadian producers will satisfy all the domestic demand for red meat in 1980 except for lamb and mutton. The number of sheep has been declining and is likely to continue to do so. The projections in Table 2, Column 3, show there will be no net exports or net imports, except for feeder cattle exports and sheep and lamb imports.

Poultry meat consumption, especially of turkeys, will continue to rise rapidly, (Tables 1 and 2). The Task Force assumes there will be no net exports or imports of poultry meat in 1980. The assumption may be optimistic, given the more rapid reduction in the industry's cost in the United States. If provincial or national marketing boards in Canada are unwise enough to follow restrictionist policies which prevent costs from falling then there will be imports in 1980.

The Task Force recommends that the present level of tariffs be retained for broilers and turkeys. No increase is justified or beneficial. There is some danger that low-cost American production will cause trouble to part of the Canadian industry. Part of the differential in costs arises from climate—that we cannot change. Part arises from feed costs; our proposals on feed grain marketing and corn tariffs will help to reduce this differential. Part arises from differences in organization of the entire industry. If governments or producer organizations refuse to permit changes which economic forces dictate, then Table 2 Column 3 will show a substantial deficit figure in 1980.

Egg consumption on a per capita basis is likely to continue to fall as in the past and All the King's Horses are unlikely to change this trend. The production cost and tariff statements relating to poultry production, in the preceding paragraph, apply just as well to eggs.

Milk consumption per capita (all forms) has been falling for many years. Projections in Table 1 assume a continuation of this downtrend. The dairy industry shares with wheat production a prospect as gloomy as any farm sector. Because of the population increase domestic total milk consumption is increasing very slowly. The major form of utilization, butter, is shielded from sales competition to some extent by a 12 per cent tax on margarine (the only food product taxed) while producers of butter are shielded from foreign competition by a complete embargo on imports. There are very few other farm products which are protected by embargoes. (It is true that imports of wheat, oats and barley are licensed by the Canadian Wheat Board but Canadian grains are normally competitive in price). The highest priced milk

<sup>&</sup>lt;sup>a</sup> Professor Marshall of the University of Guelph expects per capita consumption of pork to be at least 55 pounds in 1980. This is reasonable compared to a consumption average of 53.7 pounds in 1967 and 1968. In Table I however, the more conservative forecast of 50 pounds per person is used. Consumption in 1969 is likely to be just under 50 pounds per person.
product-fluid milk-could experience serious repercussions from improvements in filled and synthetic milk but probably not before 1972 or 1973.

It is assumed that Canadians will consume almost 20 billion pounds of milk in one form or another by 1980 (Table I). The dairy industry will have gone through dramatic changes and shake-up. The number of milk cows will fall from 2.8 million in 1964-66 to about 1.67 million in 1980 (there were 2.58 million in 1969) and output per cow will have to achieve an average of 9,000 pounds per cow if the sector is to be viable. This is a faster rate of

	1	2	3	4	
-	Consu	Imption	Output	Animal equiv	
-	Per capita	Aggregate	per head	consumed	
	(lbs.)	(million lbs.)	(lbs.)	(thous. head)	
Average 1964-66					
Beef	81.0	1,592	527.7	3,149	
Veal	7.4	145	124.6	1,177	
Pork	49.6	975	127.7	8,134	
Lamb and Mutton	3.3	65	43.8	1,484	
Other meats	8.0	157		_	
Poultry (evisc.)	37.1	729	4.0	181,962	
Eggs (fresh equiv.)	31.7	623	199.0 egg	s —	
Milk (all forms)	901.7	17,527	6,500.0		
Projected 1980					
Bccf	100.0	2,605	555.0	4,795	
Veal	6.9	180	135.0	1,364	
Pork	50.0	1,302	127.0	11,380	
I amb and Mutton	3.3	86	43.0	2,000	
Other meats	8.0	208			
Poultry (cvisc.)	49.0	1,276	4.2	306,758	
Fors (fresh cauiv.)	28.7	748	220.0 cgg	ps —	
Milk (all forms)	765.0	19,928	9,000.0		

TABLE	1	

gate Consumption. Canada. 1964-66 and Projected 1980

Derivation: "Demand-Supply projections for Canadian Agriculture-1980" (hereafter called "DSP") by Yankowsky, Shefrin & Cavin, Canada Department of Agriculture, Ottawa, 1968. (1) Col 1 from DSP, Page 13
 (2) Col 2 from DSP, Page 14
 (3) Col 3 from DSP, Page 63
 (4) Col 4 from DSP, Page 40
 (5) Cols 3 & 4, "Other Meats" pro-rated among beef, veal, pork, poultry
 (6) Col 4. "Lamb and Mutton" corrected from DSP

- (a) 1964-66-1484 instead of 581
- (b) 1980-2000 instead of 2100
- (7) Col 3, 1980, "Milk" increased from 8,500 pounds per cow in DSP to 9,000 pounds, given projections in these tables of decline in Canadian milk production.

decline in number of cows and faster rate of increased output per cow than experienced in the sixties. The economic forces of the market and the changes proposed by the Task Force will make Canada less than self-sufficient in dairy products, producing about 15 billion and consuming almost 20 billion pounds of milk in all forms in 1980.

*Feeder cattle* production has an important economic place in the Task Force's projections of things to come. Exports of 500,000 feeder cattle per year to the U.S.A. are projected for 1980 (Table 2). This is a reasonable

	1	2	3	4	5
-				Animals on	farms 1 June
	Animal e	quivalents	Not		Req'd. in
	Consumed av. 1964-66	Consumed 1980	Exports 1980	Average 1964-66	(for cols 2 and 3)
		(1	thousand hea	ıd)	
Cattle	3,149	4,795	500	6,498	10,350
Calves	1,177	1,364	_	3,579	4,160
Milk Cows			_	2,822	1,667
Hogs	8,134	11,380		5,386	7,400
Sheep and Lambs	1,484	2,000	-1,790	1,153	420
All Poultry	(181,962)	(306,758)		(77,115)	(111,325)
Hens and chickens	165,781	277,878		42,889	69,470
Turkeys	14,818	26,460		7,569	13,230
Layers	_			25,974	27,415
Other poultry	1,363	2,420		683	1,210
Horses				403	200

BLE 2
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Animals: Consumed and on Farms, Canada 1964-66 and Projected for 1980

Derivation:

- -Cols I and 2 from DSP, Page 40 (Corrected for sheep and lambs as indicated in Footnote 6 Table 1)
- -Col 3. Estimated export of 500,000 feeder cattle per year to the United States and imports of an equivalent 1,790,000 sheep and lamb carcasses per year. There will be exports and imports of the other products but they should be offsetting.

-Col 4. from DSP Page 41.

-Col 5. from DSP, Page 41. Cattle: the DSP 1980 figure of 9,260,000 makes no provision for exports of feeders; a provision to export 500,000 is included which increases Col 5 by 1,090,000 to account for 500,000 feeders and 590,000 additional beef cows and replacements required to produce these feeders.

Milk cows—The DSP projections assume that almost all Canadian dairy consumption would be met by domestic production (see DSP Page 39). If dairy subsidies are reduced before 1980, Canadian production will be reduced; the Task Force assumes Canadian production of 15 billion pounds of milk by 1,667,000 milk cows averaging 9,000 pounds of milk per cow. "All Poultry" total corrected from 110,690 in DSP to 111,325.

	1	2	3	4
en e	Average Numbers 1964-66	Forage- Consuming Animal Units 1964-66	Projected no. 1980	Forage- Consuming Animal units 1980
μ,, ,,, ,,,		(thousan	id head)	<u></u>
1 Beef cows	2,882.9	2,882.9	5,332	5,332
2 Bulls	217.5	217.5	175	175
3 Milk cows	2,697.3	2,697.3	1,667	1,667
4 Steers and heifers 5 Calves	2,613.6 3.515.0 }3,064.		4,843 4,160	4,502
6 Sheep	1,136.7	189.0	420	70
7 Horses	407.0	407.0	. 200	200
8 Total		9,458.0		11,946

 TABLE 3

 Number of Forage-Consuming Animal Units on Farms Canada 1964-66 and Projected 1980

Derivation:

-Col 1 from Canadian Livestock and Animal Products Statistics, 1968, Cat. No. 23-203 DBS.

-Col 2 from Col 1  $\times$  1 animal unit for each mature cow or horse and  $\times$ 1/2 for steers, heifers and calves and  $\times$  1/6 for sheep.

-Col 3 from Table 2 Col 5 above. The ratio of "beef cows" to "steers and heifers" is taken to be as in Col 1.

-Col 4 from Col 3 and same conversion factors to animal units as with Col 2 of this table.

figure from the demand side: higher incomes increase consumers' want for beef. Any beef shortages in the United States will not be the result of a shortage of grains needed for feeding but of a shortage in the resources necessary for producing feeder cattle. An export of 500,000 is a reasonable figure viewed from the supply side. Acres which have been used to produce wheat that cannot be sold will be diverted to pasture, providing feeders that we can sell. Some farmers in Eastern Canada who have been producing milk will change their operations to produce feeder cattle along with other products.

Land use in non-prairie regions will undergo no dramatic change by 1980 (Tables 5 and 7). Total acreage cropped is likely to decline slightly; oats will fall but barley will rise. The most important single land use change outside the prairies will be the continued increase in grain corn acreage especially in Ontario. Forage corn acreage will continue to expand (Table 9, Row 12) but not so rapidly as grain corn.

Wheat will no longer be king on the prairies; cattle will have exceeded it, and oilseeds and other grains will be challenging it. By 1980 Canada will have adjusted to the inevitable, that wheat acreage and output must be greatly reduced in the light of subsidized production and tariff protection by other industrial states, long overdue attention to agriculture in socialist states, new varieties and a dawning agricultural revolution in less developed coun-

	Acres 1966	Required for 1980 (1966 proportions)	Increase 1966 to 1980	
		(thousand acres)		
Tame hay	13,162	15,800	2,638	
Tame pasture	10,942	13,130	2,188	
Fodder corn	590	<sup>.</sup> 710	120	
Fodder oats	1,219	1,450	231	
Other	464	560	96	

 TABLE 4

 Acreages in Forage, Canada, 1966 and Projected Requirements 1980

## Derivation:

-Col 1 from Census of Agriculture, 1966.

-Col 2 equals Col 1 increase by 27 per cent to meet the 27 per cent increase in number of forage consuming animal units (See Table 3 Row 8 in which Col 4 exceeds Col 2 by 27 per cent) and then decreased by 5.5 per cent for an assumed 5.5% increase in productivity. Thus in Table 4, Col 2 is 20 per cent greater than Col 1. (127%-5.5% of 127 equals 120%).

-An implicit and questionable assumption is that all forage acreages would increase by the same proportion and that productivity would increase by 5.5 per cent in each case. The Task Force expects the increase of 4.8 million acres of hay and pasture will occur on the prairies and expects two-thirds of the increase to come from the conversion of land that is presently cropped. This land is of higher productivity than much of the existing forage lands.

tries. Table 8 shows the Task Force prediction of about 360 million bushels<sup>3</sup> going into export in 1980 and consumption in Canada by humans and livestock amounting to about 70 million each. Take into account the increases in yield that are likely and wheat acreage should be just under 20 million acres in 1980. (Table 8 Rows 7 and 8). To achieve the predicted exports Canada will have to introduce protein grading, give wheat in foreign aid and above all be fully competitive in price.

Barley will be one of the three crops taking up the slack caused by the decline in wheat acreage. More barley will be fed to the growing Canadian livestock population and much more will be exported, (Table 8 Row 2); we project exports of 100 million bushels in 1980 compared with 30 or 40 million in the sixties. The increased exports will come about only with a new orientation and new institutional arrangements, discussed in detail in Chapter 5, "Wheat, Feed Grains and Oilseeds".

Rapeseed shows signs of being the new wonder crop on the prairies. The danger is that in 1970-71 with "non-CWB-delivery grain" selling at 40-50 cents per bushel and rapeseed selling at \$2.50, (with yields not far short of

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<sup>&</sup>lt;sup>a</sup> In a materials balance approach or indeed in any approach to Canadian agriculture, projections concerning wheat exports are central. As was emphasized in Chapter 5, "Wheat, Feed Grains and Oilseeds", the projection of exports totalling 360 million bushels by 1980 arises from a consideration of many economic and political factors over which Canadians have no control. Therefore the level of actual exports may differ considerably from what now seems the most likely figure.

<u></u>	1	2	3	4	5	6
-		1969			1980	
-	Acres	Yield	Prod.	Acres	Yield	Prod.
	(000)	(bu/ac)	(000 bu)	(000)	(bu/ac)	(000 bu)
Maritimes					<b>6</b> 0	6 860
Oats	164	49	8,070	135	50	6,750
Barley	37	45	1,660	45	47	2,115
Mixed gr	81	50	4,090	100	50	5,000
Sub-Total	282	_		280	—	_
Quebec						
Oats	975	42	41,050	850	44	37,400
Barley	24	38	890	20	40	800
Mixed gr	94	41	3,890	110	45	4,950
Corn	45	85	3,820	100	90	9,000
	1,138			1,080		
Ontario						
Oats	810	53	43,170	540	55	29,700
Barley	315	50	15,690	420	55	23,100
Mixed gr.	855	58	49,500	540	60	32,400
Соп	930	72	66.870	1,400	100	140,000
Winter wheat	360	41	14.690	350	45	15,750
Sovbeans	322	24	7,600	300		
Rye	60	26	1,580	50	26	1,300
- Sub-Total	3,652			3,600		
- British Columbia						
Oats	76	51	3,900	90	50	4,500
Rarley	160	33	5,300	210	35	7.350
Mixed or	۰۰. ۲	51	280	30	52	1.560
Wheat	160	24	3 800	170	25	4.250
	100	24				
Sub-Total	402			500		
Total	5,474		-	5,460		_

 TABLE 5

 Acres and Output of Grains, Non-Prairies, Estimated 1969 and Projected 1980

Derivation:

Data for 1969 (Estimated) from Field Crop Reporting Series Cat. 22-002 Sept. 1969 DBS. Projections for 1980 are estimates based on recent trends and the acceptance of Task Force proposals in regard to grain marketing, feed freight assistance and dairy pricing. A total of 170,000 acres of wheat are included in British Columbia in 1980 because this seems more likely to be the case than a more desirable alternative—that of reducing wheat acreage in favour of forages in this area. wheat) there may be such a scramble into rapeseed production that its development may be undermined for several years. Rapeseed is the international challenger of soybeans which now earn more foreign exchange than any other American agricultural export. Its oil is interchangeable with other vegetable oils and its meal so improved as to pose no real problems for modern feed manufacturers. Improved varieties and higher yields permit rapeseed prices to fall to levels at which it can compete anywhere with soybeans or other oils and meals. The Task Force estimate of 5.5 million acres in 1980 may be conservative (Table 9, Row 9).

Hay and Grass on the prairies are necessary to raise the extra cattle if farmers are to supply 100 to 110 pounds of carcass beef to every Canadian in 1980 and export 500,000 feeders to the United States. Along with barley and rapeseed, hay and grass provide a productive use for those acres which must be diverted from wheat. The Task Force foresees an increase of 5.5 million acres of tame hay and tame pasture on the prairies between 1966 and 1980 and a total increase in improved crop acreage of 1 million acres. Thus, given a constant summerfallow acreage, almost 4 million acres will have shifted from grain crops to forage in 14 years. This is a feasible target.

	Animals 1 June	Grain consumed per animal	Total grain fed (col 1 $\times$ 2)	
	(thous. head)	(tons)	(thous. tons)	
Milk cows	1,667	.9	1,500	
Other cattle	14,510	.46	6,675	
Hogs	7,400	.78	5,770	
Sheep and lambs	420	.036	15	
Horses	200	.45	90	
All poultry	111,325	.049	5,450	
- Total			19,500	

TABLE 6								
Grain Consumption	by	Animals,	Projected	for	1980			

## Derivation:

-Col 1 from Table 2 Col 5.

- Col 2 is drawn from the Quarterly Bulletin of Agricultural Statistics, Oct-Dec. 1968, Page 249. Estimates of grain consuming animal units per head of each type of livestock (Milk cows = 1; other cattle = .51; hogs = .87; sheep and lambs = .04; horses = .5; poultry = .045) are based on numbers on farms on June 1. Because of trends in the poultry industry whereby 5 crops of broilers per year rather than 4 are becoming common and whereby turkey output is increasingly a year-round operation, the past ratio of numbers on farms at one time (June 1) to yearly output and thus to grain input appears to be low. Consequently the number of animal units per head of poultry was increased from .045 to .055. Recent experience indicates a consumption of about .9 tons of grain (not including protein supplement) per animal unit. This amount has been increasing slowly. The data of Col 2 represent animal units per head x .9 (e.g. hogs =  $.87 \times .9 = .78$ ; poultry =  $.055 \times .9 = .049$ ).

Land clearing on the prairies and in northern British Columbia has been encouraged by the provincial governments, by ARDA, by the Wheat Board quota policy and by income tax deductions on such expenditures. While there may be some justification for ARDA assistance to occasional individuals to expand their operations by land clearance, farm consolidation seems more desirable in principle. It is ironic that the acreage of improved land on the prairies has increased by 1 million acres per year while grain was backing up into the present record inventory position. It is inconsistent to offer acreage diversion payments to convert grain acreage to grass without simultaneously amending those programs which result in increased "improved acreage". Accordingly, the Task Force projects only one million additional acres in grains, oilseeds and forage on the prairies by 1980 compared with 1966.

Soybeans will continue to be produced in Ontario only and probably on a slightly smaller acreage than at present, given the profitable alternative crops and the growing competition of rapeseed in oil and meal markets.

The Poor are always with us in any sector but in the case of farming they have been more than usually prevalent. The competitive structure of farming, the rapidity of technological change, the impact of subsidized and protected production in other countries—all of these will be present in 1980 and will then, as now, produce people with poverty-level incomes. There will however be better techniques for being of help. The theory that we can help the poor merely by raising the prices of the products they sell or by lowering the prices of the inputs they buy will be practically defunct. Canadian policy will have oscillated from "help them to move out" to "help jobs to move in" (our present phase), and back and forth until by 1980 we have a sensible amalgam of the two.

••••••••••••••••••••••••••••••••••••••	1	2	3	4	
. –	Acres	Production	Waste & seed	Net Available	
•	(thous.)	(thous. bu.)	(thous. bu.)	(thous. bu.)	
Oats	1,615	78,350	4,350	. 74,000	
Barley	695	33,365	1,365	32,000	
Mixed grain	780	43,910	1,910	42,000	
Com	1,500	149,000	2,000	147,000	
Winter wheat	350	15,750	750	15,000	
Wheat	170	4,250	250	4,000	
Ryc	50	1,300	50	1,250	

TABLE 7

Acres, Production, and Availability of Grains, Canadian Non-Prairies, 1980

Derivation:

-Col 1 from Table 5, Col 4.

- Col 2 from Table 5 Col 6.

-Col 3 = Col 1 x appropriate seed per acre (rounded for assumed waste).

-Col 4 - Col 2 - Col 3.

		C	Cereal and Fe	ed Grain	Materials B	alance, Can	ada, 1980				
									Pr	airies	
	1	2	3	4	5	6	7	8	9	10	11
						Tetel	A		Y	ield	
	Feed	require- ments	Human Consumpt.	Indil. Usc	Net exports	req'd. (col 2 to 5)	able non- prairies	Net Prod.	Gross	Minus Waste and Seed	Acres
	(thous. ton	s)		(11	iousand bus	hels).			(bi	u/ac)	(thous).
l Oats	4.950	290,000	6,000		8,000	304,000	74,000	230,000	50	48	4,800
2 Barley	6,495	273,000		20,000	100,000	393,000	32,000	361,000	40	38	9,500
3 Mixed grain	1,700	85,000			—	85,000	42,000	43,000	45	43	1,000
Corn	4,000	144,000	3,000	25,000	-10,000	162,000	147,000	15,000	61	60	250
5 Ryc	195	7,000	500	3,000	7,000	17,500	1,250	16,250	25	23	700
6 Ont. Winter Wheat	120	4,000	7,000		4,000	15,000	15,000			_	
7 Marquis Wheat	. —		70,000		200,000	270,000		270,000	25	23	11,750
B Other Wheat	2,040	68,000			160,000	228,000	4,000	224,000	30		8,000
9 Total	19,500				-				—		36,000

TABLE 8

Derivation:

Col. 1. Must total 19,500 in order to meet requirements of Table 6, Col. 3.
 Col. 2. Col. 1 converted to bushels (Oats, 58.8 bu/ton; barley, 42; mixed 50; rye and corn, 35.7; wheat 33.3 bu/ton).
 Col 3 and 4. Largely from DSP, Page 39.
 Col 5. Estimated, Corn imports are falling, For cereals see Chapter on Wheat, Feed grains and Oilseeds.

-Col 6. Total of Cols 2, 3, 4, 5. -Col 7. from Table 7, Col 4. -Col 8. Cols 6 minus 7.

ž

	1	2	3	4	5	6
	Prairie	e Prov.	Non-Pra	irie Prov.	Car	ada
	1966	1980	1966	1980	1966	1980
			(thousand	s of acres)		
1 Spring Wheat	29,780	19,750	148	170	29,928	19,920
2 Winter wheat	. <u> </u>	<u> </u>	370	350	370	350
3 Oats	6,200	4,800	2,876	1,615	9,076	6,415
4 Barley	6,870	9,500	343	695	7,213	10,195
5 Rye	583	700	52	50	635	750
6 Mixed grains	. 670	1,000	913	780	1,583	1,780
7 Com	. 19	250	752	1,500	771	1,750
8 Flaxseed	2,029	1,500	41		2,070	1,500
9 Rapeseed	1,388	5,500			1,388	5,500
10 Tame hay	5,185	8,521	7,279	7,279	12,564	15,800
11 Tame pasture	4,991	7,179	5,951	5,951	10,942	13,130
12 Fodder corn	. 48	80	542	630	590	710
13 Total Cols 1 to						,
12	. 57,763	58,780	19,267	19,020	77,030	77,800
14 Increase, 1966-						
80	. —	1,017	—	-247		770
15 Summerfallow	25,224	<u> </u>	408	_	25,632	

## TABLE 9 Land Use for Wheat, Feed Grain, Western Oilseeds and Fodder, Canada, 1966 and Projected 1980

Derivation:

- Cols 1, 3 and 5 from Selected Statistical Information on Agriculture in Canada, CDA 1967 (Drawn from Census of Agriculture 1966.)

- Col 2 from Table 8 Col 11 for Rows 1 to 7. Rows 8, 9 and 12 estimated. Rows 10 and 11 based on requirements of Table 4 and the assumption that all extra acres in tame hay and tame pasture must be found on the prairies.

- Col 4 from Table 7 Col 1 for Rows 1 to 7. Estimates for other rows based on the same assumptions as for Col 2 of this table.

 $-\operatorname{Col} 6 = \operatorname{Col} 2 \operatorname{plus} 4.$ 

- All other crops including potatoes, tobacco, fruits and vegetables etc, are not included in this table.

## B. THE CHANGING STRUCTURE OF FARMING

One of the 1969 Outlook papers<sup>4</sup> of the Canada Department of Agriculture predicted that there would be about 315,000 farms in Canada by 1980 compared with 430,000 in the 1966 Census. The 1980 projection was based on sub-estimates of

189,000 farms with sales over \$10,000 each,

47,000 farms with sales of \$5,000-\$10,000,

16,000 farms with sales of \$2,500-\$5,000,

63,000 farms with sales of less than \$2,500.

The C.D.A. forecast was based on assumptions that there would be no major changes in economic forces or policy during the period 1966-1980.

Table 10 indicates the numbers of farms in recent Census Years and the above C.D.A. projection for 1980. The most notable feature about the table

\*Canadian Agricultural Outlook Conference 1969, November 24, 25 Pages 218-228.

	1951			1961			1966			19805	
- Annual Sales Per Farm	Number	Per Cent of all Farms	Per Cent of all Sales	Number	Per Cent of all Farms	Per Cent of all Sales	Number	Per Cent of all Farms	Per Cent of all Sales	Number	Per Cent of all Farms
Commercial Farms <sup>1</sup>	235,090	38	78	259,037	54	90	276,835	64	95	252,248	80
\$10,000 and over	21,243	4	22	48,841	10	45	95,032	22	65	189,186	60
\$ 5,000 to \$9,999	69,019	11	27	90,419	19	27	96,856	22	21	47,296	15
\$ 2,500 to \$4,999	144,828	23	29	118,777	25	18	84,947	20	9	15,765	5
Small-Scale Farms <sup>2</sup>	387,309	62	22	221,052	46	10	152,910	36	5	63,062	20
All Farms <sup>3</sup>	623,091	100	100	480,903	100	100	430,522	100	100	315,310	100
Part-Time Farms4	65,135	10.4	_	37,645	7.8	1.0	129,565	30	18	—	

 TABLE 10

 Number of Farms by Economic Class, Canada, 1951 to 1966 and Projections for 1980

<sup>1</sup>Farms with annual sales of \$2,500 and over.

<sup>2</sup>Farms with annual sales of less than \$2,500.

JIncludes institutional farms.

4In 1951 and 1961, part-time farmers were defined as those with sales of agricultural products between \$250 and \$1,199 and

(i) where the operator reported 100 or more days of off-farm work or

(ii) where the operator reported farm income was less than his income from all other sources.

In 1966, the definition was changed to those who received \$750 or more from off-farm work during the previous year or those who received less than \$750 from off-farm work but worked 75 days or more off the farm.

<sup>3</sup>Projections for 1980: Number of all farms based on annual rate of change of 2.6 per cent during 1951-66. The number in each class is based on the assumed arbitrary proportions of farming in each class to total.

SOURCE: Canadian Agricultural Outlook Conference 1969. C.D.A. November 1969, p. 229.

			1	2	3	4	5
	Commodity	Units of Pro- duction	1967 Pro- duction	1980 Pro- duction	Col 2 as % of Col 1	1967 Cash Farm Receipts	1980 Cash Farm Receipts
					(per cent)	(S mill	ion)
1 2	Wheat Wheat C.W.B	m/bu	<u> </u>	538	91	765 270	696 245
3	Oats	m/bu	304	316	104	26	27
4	Oats C.W.B.					12	13
5	Barley	m/bu	249	415	166	100	166
07	Barley C. W.B	m/bu	12	-18	150	29	48
8	Flaxseed	m/bu	9	13	144	46	66
ğ	Rapeseed	m/bu	25	120	480	44	211
10	Soybeans	m/bu	8	7	87	21	18
11	Corn	m/bu	74	152	205	30	61
12	Other crops		-		-	499	580
13	Total crops	_	-			1,850	2,143
14	Cattle calves	000 head	3,149	4,795	154	930	1,432
15	Hore	000 head	8 134	11 380	140	408	571
17	Dairy prod.	b/lbs.	18.2	15.0	82.4	625	515
18	Poultry	m/lbs.	729	1,276	175	224	392
19	Eggs.	m/lbs.	623	748	120	148	178
20	Other livestock					59	78
21	Total livestock					2,394	3,166
22	Forest and maple					22	22
23	Other (Subsidies)				-	120	
24	Total Cash Receipts				-	4,386	5,328

TABLE 11								
Canadian	Farm	Cash	Receipts.	1967	and	Projected	1980	

3

Note Assumption of Constant Prices 1967 and 1980. Derivation:

 Col 1 Rows 1 to 11 from Canadian Agricultural Outlook Conference, 1969 (hereafter "Outlook"). These are quoted as "1967-8" for crops. Rows 14, 16, 18, 19 from Demand-Supply Projections for Canadian Agriculture 1980 (hereafter DSP) also reported in Table 2 of this Chapter. Note these data are for 1964-6 average. Row 15 from Catalogue 32-220 D.B.S. Calendar year 1967.

Row 15 from Catalogue 52-220 D.B.S. Calendar year 15 Row 17 from Outlook p. 111. Calendar year 1967.

Col 2 Rows 1, 3, 5, 7, from Table 8 Col 6 + Seed and Waste (Acres x Cols 10-9) Rows 8, 9, based on acreage in Table 9, Col 6 of this Chapter. Row 10 based on acreage in Table 5, Ontario Soybeans. Rows 14, 16, 18, 19 from Table 1 of this Chapter. Row 17—see Footnote to Table 2 of this Chapter.

Col 3 shows Col 2 as percentage of Col 1.

- Col 4 from "Outlook 1969", pages 196-7.
- Col 5 Col 3 x Col 4-For Row 12, Col 5 represents 116% of Col 4; this is drawn from sums of Rows 1 to 11 for Cols 5 and 4. For Row 20, Col 5 represents 132% of Col 4; this is identical with Rows 14 to 19 for Cols 5 and 4.

is not so much the decline in total numbers as the "scissors effect" of increasing numbers of large farms and declining numbers of small farms both from 1951 to 1966 and in the C.D.A. projections from 1966 to 1980.

- 3

The Task Force is of the opinion that the projections of the C.D.A. in regard both to numbers and "scissors effect" are conservative. If the recommendations of the Task Force are implemented, changes would be more rapid than projected by C.D.A. and it is likely that by 1980 there will be fewer than 315,000 farms in Canada. Corresponding to this accelerated rate of change will be an even larger proportion of farms in the largest size category.

Table 11 contains tentative calculations as to likely Farm Cash Receipts in 1980<sup>5</sup>. These are based on the levels of output projected for 1980 in the nine Materials Balance Tables of this chapter. Making the assumption that all farm prices will be identical in 1967 and 1980 and that the \$120 million of special subsidies of 1967 (Table 11, Row 23) will not be necessary in 1980, Farm Cash Receipts would have increased by about \$850 million (from \$4.39 billion to \$5.33 billion or 22 per cent). Alternatively, since these calculations are based on the assumption that prices would remain constant, the increase from 1967 to 1980 is a reasonable proxy for the expected increase in volume of production. In this case we exclude the \$120 million of special subsidy in 1967 and conclude that the increase in volume of production supprises and others will recognize the many arbitrary and questionable assumptions surrounding Table 11 and the tentative conclusions contained in this paragraph. Nevertheless, they indicate some of the changes in magnitude which appear to be reasonable to expect.

In its Outlook 1969, C.D.A. economists state "These projections are extensions of existing trends assuming no major changes in markets, in the rate of adoption of new techniques or in government policy. If these trends continue as anticipated, then Canada will have 75 per cent as many farms as it had in 1966. This will still be twice the number of farms that can earn competitive returns, as full-time farms, based on the gross value of sales of agricultural products."<sup>4</sup> This Task Force is of the opinion that we will have moved a bit faster than the C.D.A. projections indicate.

In summary, by 1980 agriculture—both farming and agribusiness—will be a much more trim, stable, efficient and self-reliant industry than it is at present. Agriculture will never be devoid of problems and soft spots, but the drawbacks will be less serious and less extensive than in 1970.

<sup>&</sup>lt;sup>a</sup>The C.D.A. calculations assume implicitly that cash receipts to Canadian farmers would remain unchanged between 1966 and 1980. "It may then be estimated that the total number of farms which can be accommodated at this level of income (\$28,000 cash receipts)... is about 154,000", Outlook Conference, page 219. Thus 154,000 farms with \$28,000 cash receipts gives total receipts of \$4.3 billion in 1980.

<sup>\*</sup>Canadian Agricultural Outlook Conference 1969, November 24, 25, page 222.