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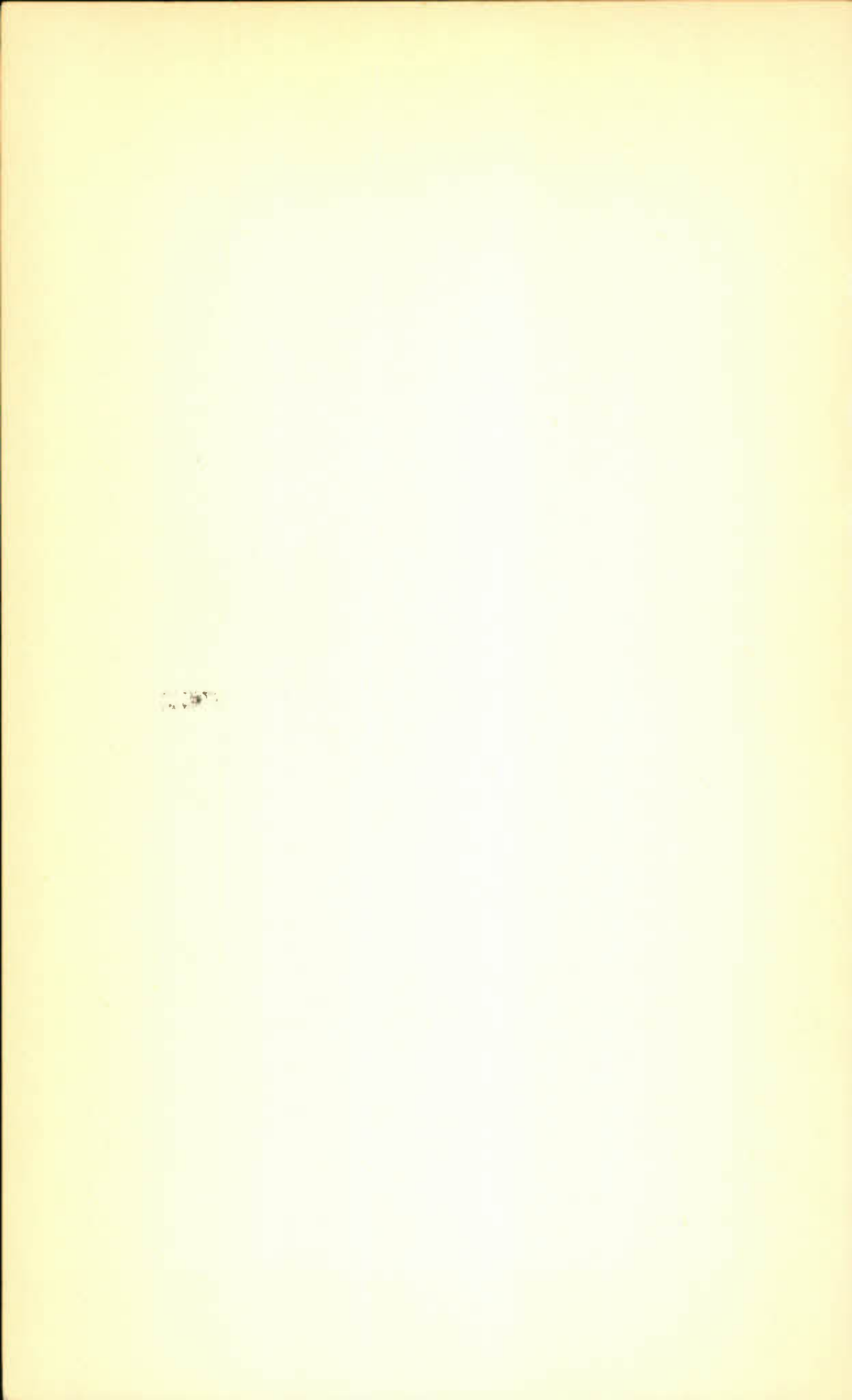
Future Market Outlets
for Canadian Wheat
and Other Grains

by
S. C. Hudson



*prepared for the
Economic Council of Canada*

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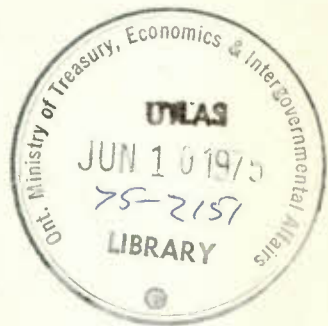
FUTURE MARKET OUTLETS
FOR CANADIAN WHEAT
AND OTHER GRAINS

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Economic Council of Canada

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S. C. Hudson

January 1970



This Study was prepared as a background paper for the Economic Council of Canada. Although this Study is published under the auspices of the Council, the views expressed are those of the author. Other Council publications are listed at the end of this Study and are available from the Queen's Printer, Ottawa.

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FOREWORD

In 1968, the Economic Council of Canada commissioned Dr. S. C. Hudson to conduct this Study of Future Market Outlets for Canadian Wheat and Other Grains. The analysis was intended to contribute both to the Council's forward look at the Canadian economy in 1975, which was published in our Sixth Annual Review in September 1969, and to an overall assessment of the position of the agricultural economy in Canada which is greatly affected, and often harshly affected, by the instability of export markets for grain.

The preparation of a Study such as this constitutes an enormous task, and one which would have been impossible to undertake satisfactorily without information and assistance from various governmental agencies. Helpful co-operation has in fact been available to the author for many parts of his work. On behalf of the Economic Council, I wish to express deep appreciation for the co-operation provided in this way by the Departments of Agriculture, and Industry, Trade and Commerce, and by the Canadian Wheat Board, and the Board of Grain Commissioners for Canada.

As is the usual practice with a study commissioned by the Council, the contents are the responsibility of the author. Publication under our auspices means that the Council considers the book to be a worthwhile contribution to public knowledge and understanding of key economic issues. Dr. Hudson has clearly made an outstanding contribution to the achievement of these aims.

The present document is primarily devoted to an evaluation of market outlets, which is an essential first ingredient in the analysis of Canadian agricultural problems and prospects. In addition to its internal research, the Council has commissioned another study in Canadian agricultural economics, which is expected to be published in the near future. This is a study by Dr. W. J. Craddock, entitled "Interregional Competition and Surplus Capacity in Canadian Cereal Production". Dr. Craddock examines carefully the relative cost advantages of Canadian regions in grain production, and land resources required at various levels of market demand.

We hope, especially in the light of the deeply troubled position of western agriculture at the present time, that these studies may help to provide a useful basis for sound policy decisions on the part of public and private interests concerned with the way in which the grain economy adjusts to its current problems. Good information is required for such decisions, and good information should be supplied on a comprehensive and continuing basis. The focus of this and other studies of the grain economy under Council auspices has been an effort to place the relevant economic facts in perspective. We are fully aware, of course, that the problems are extremely complex, and that they have many social as well as economic aspects. The Council does not pretend to have easy or comprehensive solutions to these problems. But we do wish to make some constructive contribution to their effective resolution.

Dr. Hudson is well qualified to conduct a thorough investigation of market outlets for Canadian wheat and other grains. He served for more than 30 years as an agricultural economist in the public service, and is now a private economic consultant. Among other things, he served as Director-General of the Economics Branch in the Department of Agriculture, and as Director of the Agriculture and Fisheries Branch in Trade and Commerce. He gained familiarity with development problems as a member of the FAO staff in Egypt, and as head of development study missions to Trinidad, Korea, and Jamaica. He has also served as Executive-Secretary of the International Wheat Council, and as Vice-Chairman, and Chairman of that organization. He participated in the negotiations for two International Wheat Agreements, and has served as Chairman of the Prices Review Committee of the International Grains Arrangement.

Arthur J. R. Smith
Chairman
Economic Council of Canada

PREFACE

This Study of future export and domestic market outlets for wheat and other grains was undertaken under arrangements with the Economic Council of Canada to provide an assessment of medium-term demand for that important and highly variable sector represented by grain exports. The terms of reference for the Study were:

- (a) to review the current and prospective world import requirements for wheat and other grains;
- (b) to analyse the competitive position of Canadian wheat and other grains in world markets;
- (c) to present export projections to 1975 for Canadian wheat and other grains;
- (d) to indicate future requirements for wheat and other grains for domestic use; and
- (e) to explore the policy implications arising from the findings of the Study, particularly as they refer to resource use in Western Canada.

The main emphasis in the Study is given to an examination of future market outlets for wheat with a complementary but much less complete analysis for coarse grains and oil seeds. It is hoped that these two important commodity groups, together with some of the special facets of the marketing of grains which did not fall within the scope of this project, receive a detailed examination in the near future.

The author acknowledges with thanks information and assistance generously provided by officers of the International Wheat Council, the Canadian Wheat Board, the Board of Grain Commissioners for Canada, the Canada Department of Agriculture, and particularly the Department of Industry, Trade and Commerce. Special thanks are extended to Mlle Rachel Berthiaume and Miss Lila Ferguson who served as the author's personal staff in

connection with this Study and to Mrs. Bobbi Cain of the staff of the Economic Council of Canada for her careful preparation of the manuscript.

The author accepts full responsibility for conclusions presented in the Study which he hopes will serve as a useful background for farmers, policy makers and others in examining the current and future position of wheat in Western Canada and the adjustments required in the use of agricultural resources.

S. C. Hudson

January 1970

SUMMARY

The Canadian grain economy is deeply troubled by a sharp reduction in export volume and prices of wheat, and a rapid accumulation of stocks. Canadian exports of grains and related products rose to \$1.4 billion during the 1960's, but fell drastically to \$0.9 billion on average in 1968 and 1969, while the wheat carry-over rose to a record 668 million bushels. This change from buoyancy to financial stringency within two or three years has drastic implications for many thousands of producers who are most directly concerned, and for the prairie economy, the national economy and the balance of payments.

In view of the seriousness of the situation, this Study of market outlets was commissioned in 1968 by the Economic Council to provide a realistic appraisal of future market prospects in Canada and abroad for wheat and other grains, as part of the broad projections of markets for all Canadian products to 1975, and as a guide to policy decisions with respect to the marketing of our grains and to adjustments in the use of resources in Canadian agriculture.

In estimating probable future levels of trade in wheat and coarse grains, use has been made of projections of the production and consumption of grains to 1975 prepared by the Food and Agriculture Organization (FAO), and the Organization for Economic Co-operation and Development (OECD), based on the years 1961/1963. These projections provide an excellent starting point, but they are supplemented in this Study by a careful examination of policies and prospects in the principal importing countries which are grouped according to economic criteria as developed countries, developing countries and centrally planned (Communist) countries.

Wheat

Production and Trade

Wheat accounts for 28 per cent of world cereal production, as compared with 27 per cent for rice and 45 per cent for coarse grains. About 20 per cent of the world output of wheat is exported

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as compared to 4 per cent for rice and 8 per cent for coarse grains. World wheat production reached a peak level of about 318 million metric tons in 1968, 44 per cent higher than the five-year average 1954/1958. An increasing production of wheat in the traditional importing countries has resulted in a greater degree of self-sufficiency and a decreasing proportion of the world wheat production entering international trade channels. Wheat production in the major exporting countries has grown faster than market outlets, with the result that stocks have increased from 43 to 62 million metric tons over the last crop year.

World trade in wheat and flour amounted to 45 million metric tons in 1968 as compared with an average of 31 million tons during the 1954/1958 period. However, trade in wheat was as high as 62 million tons during the intervening period. Omitting the high years 1963, 1965 and 1966, the aggregate average annual rate of growth in wheat exports was somewhat less than 4 per cent.

World trade in wheat is highly variable. Import requirements for wheat usually represent residual needs after taking account of the volume and milling quality of the domestic crop in individual countries. Variations in weather, technological developments at the farm level, and national policies have resulted in large swings in cereal output and in the demand for imports. In 1963 for example, adverse weather, which resulted in a 30 per cent decrease in the U. S. S. R. wheat crop, gave rise to an increase in imports of wheat amounting to nine million tons or nearly 25 per cent of world trade. In 1968 good weather, new wheat varieties, and increased use of fertilizers raised average yields by 40 per cent in India and 30 per cent in Pakistan, and reduced their import requirements by over 50 per cent. The agricultural and trade policies of big importers, such as the United Kingdom, the EEC and Japan, are crucial to exporting countries. Also crucial is the priority given by developing countries to creating their own viable supply and the subsidies used by some large and wealthy countries to enable them to export grain.

The World Wheat Market 1975

According to the FAO projections for 1975, wheat consumption in the developed countries may be expected to increase 18 per cent above the base period 1961/1963, while production will

increase 34 per cent. For the developing countries, consumption is projected to increase 50 per cent and production 35 to 85 per cent, depending on rate of economic growth. For Communist countries, consumption is projected to rise 27 per cent and production 31 to 45 per cent. The implication of these projections is for a decrease in net trade in wheat in both the developed countries and the Communist group. For the developing countries, the projections suggest increased trade in wheat in the case of low rates of growth and reduced trade if economic growth is high. Changes in wheat production, consumption and trade, which have occurred since the base period 1961/1963, have tended to confirm these projections.

Governments in developed countries, which traditionally have been the major importers of wheat, have embarked upon policies of encouraging domestic wheat production either through the price mechanism or through direct income support. As a result, production has increased at a faster rate than consumption, and imports have declined during the 1960's. The European Economic Community has become self-sufficient in wheat, but has maintained its imports by exporting increasing quantities surplus to domestic needs by means of export subsidies. Although imports of developed countries will vary according to the fluctuations in the domestic crop, it may be expected that past trends will continue and that an increasing proportion of total consumption in most developed countries will be from domestic production.

Japan is an exception among the developed countries in that imports have been rising fairly steadily from 2.4 million metric tons in the late 1950's to 4.3 million metric tons in 1968. Demand for imports on the part of Japan will probably offset the decline in imports by other developed countries, including the United Kingdom, with the result that by 1975 the developed countries, as a group, will continue to import 14-15 million metric tons, about the same amount as they do now.

Imports by developing countries are more irregular than those of the developed countries as the influence of crop failures, particularly in India and Pakistan, has been an important determinant of volume. As indicated in 1968, given favourable weather, the use of improved high-yielding varieties and a greater quantity of fertilizers will probably enable wheat production in developing

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countries to increase at a slightly faster rate than population. As a result, the import requirements of these countries will, during the 1970's at least, decline from the high level of recent years. Although crop failures may be expected to occur spasmodically, imports by the developing countries may be generally at the 20 to 25 million metric ton level by 1975.

In the Communist group of countries, import requirements have grown rapidly during the 1960's with the emergence of Mainland China as a major importer and a series of short crops in the U. S. S. R. resulting in massive imports. Since 1966, the U. S. S. R. has enjoyed bumper harvests and has reverted to her traditional role as a wheat exporter. It may be expected that the Soviet Government will seek to ensure that Russia remains a wheat exporter and, unless there are severe crop failures, it is unlikely that the U. S. S. R. will be a major importer during the 1970's. The future requirements of Mainland China remain the largest unknown element but, for the purpose of calculating total world imports, are assumed to continue at current levels. Imports of wheat by the Communist group will not likely exceed 9-10 million tons by 1975.

Estimates of aggregate world imports of wheat in 1975, based on projected consumption and production of wheat in importing countries, suggest that the volume of international trade in wheat may be between 44 and 51 million metric tons. This represents a return to levels closer to those of earlier years, which may be more representative of normal market demand than conditions experienced during part of the intervening period.

The five principal wheat exporters, Argentina, Australia, Canada, the United States and the EEC countries, produced 114 million metric tons of wheat in 1968, an increase of 35 per cent over the average production during the 1958/1962 period. Production in Australia more than doubled during this period. The joint exports of the group, which averaged 35 million tons during the 1958/1962 period, reached a peak of 57 million tons in the 1965 crop year but decreased to 37 million tons in 1968. On the basis of accumulated stocks and 1969 production, the supplies available for export and carryover in the 1969 crop year are estimated at 110 million tons. Pending essential production adjustments in exporting countries, competition in the export market

for wheat will continue to be extremely keen. The competitive situation has been accentuated during more recent years by increasing exports of wheat from "other countries", including the U. S. S. R. and Eastern European countries, who are not members of the current International Grains Arrangement.

Canada's Export Position

Canada's wheat export position has deteriorated from a 24 per cent share of the 54 million ton average wheat marketings for the 1962/1966 period to a 19 per cent share of 45 million tons marketed in 1968. An examination of Canada's competitive position in 23 countries or groups of associated countries, which in 1967 accounted for more than 80 per cent of the total world imports of wheat and provided more than 80 per cent of Canada's export wheat market, indicates that Canada's share has been declining in most markets.

An analysis of observations relating to the competitive position of Canadian wheat in each of 23 selected wheat markets suggests a variety of causes for the deterioration in Canada's share of export markets. These include a lack of uniformity in the protein content of Canadian wheat shipments; a lack of flexibility in pricing associated with selling on an f. o. b. basis at "one price to all customers"; insufficient effective market development work; the indiscriminate use by some competitors of export subsidies; and the adverse competitive effects of some U. S. government-assisted export programs.

Estimates of the share of prospective export markets which Canada may supply in 1975 are based on our examination of Canada's competitive position in export markets, and on the assumption that appropriate action will be taken to provide for a modernized wheat grading system which includes protein as a basic criterion, for a more flexible system of pricing, and for more effective marketing research and development.

The greatest change in Canada's projected market for wheat is in the centrally planned group whose imports are forecast at 9.2 million tons as compared with an average of 16 million tons for the five years 1963/1968; Canada's share will be reduced from 49 to 24 per cent. Canada's projected exports to

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this group are 2.25 million tons (82.7 million bushels) as compared with an average of 6.4 million tons (234.9 million bushels) during the 1964/1968 period.

The forecast of 23 million metric tons of imports of wheat and flour into the developing countries in 1975 anticipates a slight decrease in imports as a result of increased production in India and Pakistan. A reduction in Canada's share in those markets to 4 per cent in 1975 from an average of 6 per cent during the last five years is forecast on the basis of an anticipated reduction in exports to India, who has been Canada's most important export outlet in the developing countries. Canada's exports of wheat and flour to these countries in 1975 are forecast at 1.1 million tons (40 million bushels), a reduction of 20 per cent from the recent five-year average. The projected reduction in Canada's exports to the centrally planned countries emphasizes the renewed importance of her traditional markets in the developed countries in the years ahead.

The imports of the developed countries are projected at 15.3 million tons in 1975, 10 per cent higher than the average imports for the five-year period 1963/1968. Canada's projected exports to the developed countries are 6.5 million tons (239 million bushels), compared with an average of 5.3 million tons (195 million bushels) for the last five years.

This means that 66 per cent of Canada's wheat and flour exports will be marketed in the developed countries, as compared with an average of 47 per cent for the 1961/1966 period and 82 per cent for 1956/1961. The forecast thus assumes that Canada can capture and hold 40 per cent of this market: an assumption which can be fulfilled only if all necessary steps are taken to maximize Canada's competitiveness by improving the effectiveness of grading and pricing, by reducing the cost of production and transportation, and by giving greater attention to market development. With an increase in the use of domestically produced soft wheats in most of these countries, Canada's strong protein wheats should have a competitive advantage for blending, providing protein becomes a basic criterion in an amended grading system for Canadian wheats.

Combining the above economic groupings of countries, the 1975 forecast of world imports of wheat and flour amounts to 47 million metric tons as compared with average imports of 57.1 million tons for the five years 1963/1968. Canada's projected total exports of wheat and flour are 9.85 million metric tons (362 million bushels), representing a reduction of 25 per cent when compared with the average for the most recent five years.

Domestic Utilization

During the 20-year period, an average of 154 million bushels of wheat has been used domestically. Of this amount, 90 million bushels, or 58 per cent, have been used on farms for seed and feeding livestock and 64 million bushels, or 42 per cent, have been marketed through commercial channels for processing into flour or other food products, for industrial use and for use in the feed compounding industry.

Human consumption of wheat in 1975 is projected at about 68 million bushels, and the use of wheat for feed, which varies widely from year to year, could amount to as much as 90 million bushels. Allowing 42 million bushels to cover requirements for seed and industrial uses, the total domestic use of wheat in 1975 may be as much as 200 million bushels.

Taking both domestic and export demand into account, total utilization of wheat in Canada in 1975 may amount to about 562 million bushels.

Coarse Grains

Production and Trade

World coarse grain production has increased by 25 per cent in the last 10 years and now totals over 500 million metric tons, of which 48 per cent is corn and 23 per cent barley. Barley production increased by 50 per cent in this period as compared with 20 per cent for corn. However, because the increase in barley production was concentrated mainly in importing countries, the performance of corn in world trade has been much better than that of barley.

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World trade in coarse grains, which amounted to 41 million tons for 1967, more than doubled during the last decade. This growth in trade in coarse grains is accounted for by threefold increases in the importation of corn and sorghums, exported largely from the United States. Trade in barley, which is the principal coarse grain exported by Canada, remained relatively constant. Barley now accounts for about 15 per cent of total world coarse grain trade. The rapid increase in coarse grain trade is a reflection of the expansion in livestock feeding, particularly in developed countries which account for nearly 90 per cent of world imports. Coarse grain imports by developing countries also increased to meet food as well as feed requirements. Despite the sharp increase in world trade in coarse grains, it still represents less than 8 per cent of total production. This is a reflection of the ability of the principal coarse grain consuming countries to produce their own requirements. Major coarse grain importers, such as the United Kingdom and the European Economic Community, have emerged as significant exporters of barley.

As indicated by the FAO projections, in the developed importing countries coarse grain consumption for 1975 will be 40 to 46 per cent higher than the 1961/1963 base period, and production will rise 20 to 38 per cent. The OECD projections suggest a somewhat smaller rate of increase in consumption and a more rapid increase in production in the developed countries. For developing countries, consumption is projected to increase 44 to 50 per cent, and production to rise 36 to 50 per cent, in terms of 1961/1963 levels. In the Communist group of countries, consumption and production are both expected to increase 30 to 40 per cent, respectively, under low and high rates of growth.

Translating projected consumption and production into trade terms, imports of coarse grains in 1975 are unlikely to be maintained at current levels but are projected at 26-27 million metric tons. With production in developing countries expected to increase as rapidly as consumption, import requirements are projected to be close to current levels, between three and six million tons. The centrally planned economies are expected to be able to maintain a close balance between domestic requirements and domestic production of coarse grains, with imports of 1 to 2 million tons. Aggregate imports of coarse grains are therefore projected at between 30 and 35 million tons by 1975, compared with 41 million tons in 1967.

Utilization

Total utilization of coarse grains in Canada reached a peak of 849 million bushels in 1966 as compared with an average of 717 million bushels for the five years, 1956 to 1960. About 90 per cent of the total volume of coarse grains is used domestically. Some 50 per cent of the coarse grains in Canada is oats, 95 per cent being used domestically. Barley makes up about 30 per cent of the total volume of coarse grains. About 70 per cent of the barley is used domestically and 30 per cent goes into export channels. Rye makes up only a very small proportion of the total volume of coarse grains, but over 50 per cent is exported. The proportion of corn in the total volume of coarse grains has been increasing rapidly, and currently amounts to about 13 per cent of the total. About one-third of the corn used is imported.

Canada has not been a strong competitor in the highly competitive, coarse grains export market in recent years. Corn makes up 62 per cent of the world's exports of coarse grains, as compared with 16 per cent for sorghums and millet, and 16 per cent for barley. Exports of corn, and sorghums and millet have increased threefold during the past decade while those of barley have remained relatively unchanged. The United States provides 56 per cent of the coarse grains exported. Exports of Canadian barley, the only coarse grain which Canada exports in quantity, declined sharply from an average of 69 million bushels during the 1956/1960 period, but registered an encouraging increase during the current year as a result of more competitive pricing. Exports of Canadian barley may reach a level of 125 million bushels by 1975.

Slightly more than 2 per cent of the coarse grains used in Canada is used for food. The coarse grains used as food are primarily oats and corn. Seed and industrial use each account for about 5 per cent, with livestock feed making up about 88 per cent of the total domestic utilization of coarse grains.

The projected increases in the number of animals slaughtered and the numbers on farms suggest increases in total feed grain requirements by 1975 of 20 to 27 per cent depending on the efficiency of feeding. In terms of all grains, the 1975 feed requirement would be between 840 and 890 million bushels, an

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increase of 140 to 190 million bushels over the average for 1964/1966. Allowing for seed and industrial use, the total domestic disappearance of coarse grains in 1975 should be between 900 and 950 million bushels.

Increased feed requirements to provide for Canada's increased livestock population, together with the export potential for barley, suggest outlets by 1975 for 1,075 million bushels of Canadian coarse grains.

Oilseeds

The demand for edible vegetable oils will continue to increase, both in Canada and on a world basis. Although production of vegetable oils is expected to keep pace with world demand, indications are that Canada has a particular advantage as a producer and exporter of rapeseed, of which it is the world's largest exporter. Prospects are for Canadian rapeseed to provide an increasing share of Canada's growing vegetable oil requirements and also to increase exports, particularly in the Pacific area. If expanded gradually, to avoid the accumulation of burdensome surpluses, to provide time for further developmental work and for the ironing out of marketing problems, a total of four million acres in rapeseed may be anticipated by 1975.

Implications for Agricultural Adjustment

The principal implication of the reduced future market outlets for Canadian wheat is the need for adjustments in the use of agricultural resources in Western Canada. The objective of such adjustments should be to ensure that the use of resources, while taking into account marketing opportunities, will maximize returns to farmers on a continuing basis. The process of adjustment is not easy. It involves important changes in the use of human as well as physical resources; changes which may require the development of new skills and which may vitally affect the life of the farm family. It also involves changes in the structure of farms and in capital requirements. The type of adjustments which are needed in the present situation have serious regional implications, and must be viewed in a regional perspective in the light of careful study of the alternatives.

Reduced market outlets for wheat suggest that, at average yields, 23 million acres will be an adequate area to devote to wheat in 1975. On the basis of an average of 29 million acres seeded to wheat during the five years 1964 to 1968, it would be necessary to divert six million acres to other crops by 1975. A preliminary study indicates that by 1975 barley needed for export markets and for our expanded livestock population will require 3.75 million acres additional land for the production of coarse grains. In addition, a further 4.2 million acres will be required for forage crops and pasture for our increased livestock population. This, together with an estimated increase of 2.5 million acres in rapeseed, indicates, in a preliminary way, possible alternative use opportunities for the agricultural land resources in the Western Provinces.

Recommendations

Reduced export market outlets for Canadian wheat and barley have resulted from other countries' policies, which have provided for increased self-sufficiency on the part of many traditional importing countries and the diversion of trade through the use of export subsidies, as well as from the competitive shortcomings of Canadian wheat in world markets.

Continued bilateral efforts and action through appropriate international organizations, although limited in effectiveness, should be undertaken by the Government of Canada to achieve a reduction in nontariff barriers to trade and particularly, to bring the use of export subsidies within more reasonable limits. Where necessary, to preserve Canada's share in traditional markets, the Government should not hesitate to take retaliatory action.

To improve the effective competition of Canadian wheat in existing markets, action is urgently required on many fronts. Such action includes:

- (a) Amendment of Canada's wheat grading system to include protein and other technical criteria associated with baking quality in order to maximize the competitiveness of Canadian wheat from a quality standpoint;

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- (b) Implementation of the findings of current studies of the transportation, storage and handling of grains in Canada with a view to developing a more efficient and lower cost grain handling system;
- (c) Immediate arrangements for a study of Canadian wheat pricing to be made by an outstanding, unbiased, international authority on the subject, as a basis for future policy decisions;
- (d) Provision for a greatly expanded market research and development program; and
- (e) Provision of expanded funds for a rational food aid effort, making use of wheat in nutritional programs in developing countries with a view to promoting improved nutrition, together with the development of future markets.

In order that a recurrence of a similar situation be avoided in the future, consideration should be given to instituting a comprehensive research and information program to be financed and administered by producers, with matching funds being provided by the Government.

LIST OF ABBREVIATIONS

CACOM	Central American Common Market
C. A. P.	Common Agricultural Policy (EEC)
CCC	Commodity Credit Corporation (United States)
CDA	Canada Department of Agriculture
CWAD	Canadian Western Amber Durum
CWB	Canadian Wheat Board
EAGGF	European Agricultural Guidance and Guarantee Fund (EEC)
ECIC	Export Credits Insurance Corporation (Canada)
EFTA	European Free Trade Association
FAO	Food and Agriculture Organization of the United Nations
F. A. Q.	Fair average quality (Australia)
FAS	Foreign Agricultural Service (United States)
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
Germany, F. R.	Federal Republic of Germany
IGA	International Grains Arrangement
INTA	National Technological Institute (Argentina)
IWA	International Wheat Agreement
IWC	International Wheat Council
N. S. W.	New South Wales (Australia)
OECD	Organisation for Economic Co-operation and Development
ONIC	French National Cereals Office
PFAA	Prairie Farm Assistance Administration (Canada)
U. A.	Units of Account
UNRWA	United Nations Relief and Works Agency for Palestine Refugees in the Near East
USDA	United States Department of Agriculture

GENERAL NOTES

Crop Year: e. g. 1963 -- Covers for the Northern Hemisphere, crops seeded in 1963 and, for the Southern Hemisphere, crops seeded in 1963 and harvested in late 1963 and early 1964. For trade purposes, the year 1963 would indicate July 1, 1963 to June 30, 1964.

Oil Equivalent (of Oilseeds) -- Ranges between 15 per cent (sunflower) and 40 per cent (rapeseed) by weight.

Wheat Equivalent -- 1 metric ton = 51.0 bushels or 1400 kg. of wheat (based on 72 per cent extraction rate).

c. i. f.	Cost, insurance, freight
f. a. s.	Free alongside ship
f. o. b.	Free on board
f. o. r.	Free on rail
kg.	Kilogramme = 2.2046 pounds
hectare	1 hectare = 2.4710 acres
hl.	hectoliter = 2.7496 imperial bushels
long ton	2,240 pounds
metric ton	2,204.6 pounds
short ton	2,000 pounds
T	Less than a thousand metric tons
n. a.	Figure not available
--	Not applicable
A blank	Figure not significant, or negligible

FUTURE MARKET OUTLETS FOR
CANADIAN WHEAT AND OTHER GRAINS

CHAPTER I

THE PLACE OF GRAINS IN THE CANADIAN ECONOMY

During the past three decades, Canada has changed from what was essentially an agricultural country to an industrial country. Agriculture's contribution to the Gross Domestic Product has dropped from 11 per cent to less than 5 per cent. However, agriculture continues to make an important contribution to Canada's economy. At the primary level, the industry provides employment for more than half a million persons. Thousands of others are engaged in transporting and transforming the raw farm products into the food in the basket of the shopper. Thousands more are employed in providing the goods and services used by farmers in their production operations. The capital invested in farm real estate, machinery and equipment, livestock and poultry, is estimated at more than \$22 billion.

As well as providing a large proportion of the food and fibre for domestic consumption, Canada's agricultural industry provides cereals and cereal products, oilseeds and oilseed products, seeds for sowing, livestock and livestock products for export to more than 130 countries throughout the world. Sales of agricultural products abroad are an important source of foreign currency to purchase foods and goods not produced in Canada. During the 1950's and early 1960's, the value of agricultural products exported was about one-fifth of the value of all exports (Table I-1). Agricultural exports which were at a record high value of about \$1.9 billion in 1966 declined in 1967 and 1968 to \$1.5 and to \$1.4 billion, respectively. Since exports of other commodities continued to increase, the result was a decrease in agriculture's proportion of total exports, to 13 per cent in 1967 and to less than 11 per cent in 1968.

Grains are important commodities in Canada's agricultural industry and the revenue from their sale together with the various types of service activities involved in their production and marketing make an important contribution to the economy of the nation. More than 50 million acres are seeded to grains, including oilseed

Future Markets for Canadian Grains

crops each year. About 90 per cent of this acreage is in the Prairie Provinces of Alberta, Saskatchewan and Manitoba. Out of a total of 276,835 commercial farms in Canada in 1966, 71,413 were classed as specialty wheat farms and 29,742 were farms specializing in small grains other than wheat.

During the past 35 years, Canada's farmers received between 22 and 38 per cent of their annual cash farm receipts from the sale of grains. The highest proportion was in the early 1950's and the lowest in the late 1950's and early 1960's. In more recent years, grains accounted for about 28 per cent of total cash farm receipts. Oilseed crops usually provide from 2 to 4 per cent of total farm cash receipts. During the past decade, grains, including oilseed crops, accounted for 25 to 30 per cent of farm cash receipts. Since 1964, the total value of receipts from these commodities averaged \$1.2 billion annually (Table I-2).

Grains are important inputs of the livestock and poultry industries. Large quantities of grain are fed on the farms where grown, and are marketed through livestock and poultry and their products each year. Large quantities are sold for feeding on other farms, and large quantities are used by feed mills in the manufacture of commercial livestock and poultry feeds. Estimates place grain consumption by livestock and poultry at more than 700 million bushels annually.

Grains and oilseeds are among the inputs of production of a large number of secondary industries. Because of the complexities of the interrelationships of the various industries, statistics are not readily available to measure the total contribution of grains and oilseeds to industrial activity in Canada. Three industries using grain products -- feed manufacturers, bakeries and breweries -- ranked among the 40 leading manufacturing industries in Canada in 1966. There were 52 breweries, 860 feed manufacturers and 2,363 bakeries. These three industries provided employment for more than 52 thousand employees and paid salaries and wages of more than \$146 million. Flour mills and distilleries also use grains as a main input of production. In 1965, there were 51 flour mills and 22 distilleries in Canada. The flour mills provided employment for about 2,500 workers and paid salaries and wages of more than \$11 million. The distilleries employed about 2,900 workers and paid salaries and wages of more than \$16 million.

Table I-1

EXPORTS: ALL COMMODITIES,
AGRICULTURAL PRODUCTS, GRAINS AND OILSEEDS, CANADA
AVERAGE 1957/1959; ANNUAL 1960 TO 1968

	Average 1957/1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
All commodities										
Value (\$ million)	4,867	5,256	5,755	6,178	6,798	8,094	8,525	10,071	11,112	13,220
Agricultural products										
Value (\$ million)	971	909	1,193	1,157	1,359	1,702	1,593	1,862	1,483	1,396
Per cent of all commodities	20	17	21	19	20	21	19	18	13	11
Grains(1)										
Value (\$ million)	587	542	791	715	921	1,218	997	1,241	919	817
Per cent of agricultural products	57	60	66	62	68	72	63	67	62	58
Per cent of all commodities	12	10	14	12	14	15	12	12	8	6
Oilseeds(2)										
Value (\$ million)	89	86	89	99	94	97	133	146	127	108
Per cent of agricultural products	9	9	8	9	7	6	8	8	9	8
Grains, including oilseeds										
Value (\$ million)	676	628	880	814	1,015	1,315	1,130	1,387	1,046	925
Per cent of agricultural products	70	69	74	70	75	77	71	74	71	66
Per cent of all commodities	14	12	15	13	15	16	13	14	9	7

(1) Includes seed wheat and seed oats, and grain products.

(2) Includes oilseed products.

Source: Canada Department of Agriculture, Economics Branch, Canada Trade in Agricultural Products with the United Kingdom, the United States and All Countries, Annual.

Table I-2

CASH RECEIPTS FROM THE SALE OF FARM PRODUCTS
 BY MAJOR COMMODITY GROUPINGS, CANADA (1)
 AVERAGE 1935/1939, 1940/1944, 1945/1949; ANNUAL 1950 TO 1968
 (\$ Million)

	Grains (2)	Oil-seeds (3)	Other Crops (4)	Live-stock (5)	Dairy Products (6)	Poultry and Eggs	All Other (7)	Total (6)(8)
1935/1939	194	2	83	158	111	47	29	624
1940/1944	318	16	142	364	207	93	46	1,188
1945/1949	617	30	233	574	335	167	64	2,021
1950	527	10	228	787	328	167	74	2,121
1951	874	20	257	878	372	248	76	2,725
1952	1,030	29	326	702	381	257	74	2,799
1953	1,015	31	279	635	398	282	68	2,709
1954	586	26	275	654	410	269	72	2,293
1955	483	54	285	645	422	276	74	2,239
1956	710	71	285	668	430	292	73	2,529
1957	601	69	307	740	449	276	74	2,516
1958	619	56	333	897	480	298	72	2,754
1959	631	67	330	882	490	278	77	2,754
1960	640	67	366	823	487	273	78	2,734
1961	676	80	361	917	496	284	74	2,888
1962	807	75	366	994	500	294	76	3,112
1963	854	68	423	950	510	318	77	3,200
1964	1,064	104	438	976	534	310	69	3,496
1965	1,082	92	459	1,168	559	345	84	3,789
1966	1,164	128	484	1,339	584	402	85	4,185
1967	1,217	112	521	1,347	625	372	82	4,276
1968	1,141	82	532	1,410	643	392	75	4,276

(1) Excludes Newfoundland.

(2) Wheat, oats, barley, rye, including Canadian Wheat Board payments and net cash advances made under the provisions of the Prairie Grain Advance Payments Act, 1957 to 1968.

(3) Includes flaxseed, rapeseed and soybeans.

(4) Corn, sugar beets, potatoes, fruits, vegetables, tobacco and other crops.

(5) Cattle and calves, hogs, sheep and lambs.

(6) Excludes dairy supplementary payments.

(7) Other livestock and products, forest and maple products and deficiency payments.

(8) Components do not necessarily sum to totals because of rounding.

Source: Dominion Bureau of Statistics, Handbook of Agricultural Statistics, Part II, Farm Income, 1926-1965 (Revised), Cat. 21-511; Dominion Bureau of Statistics, Farm Cash Receipts, Cat. 21-001, Annual.

Grains in the Canadian Economy

The provision of the industrial products and services used by farmers in the production of grains provides employment for large numbers of urban workers. Industries such as farm machinery, petroleum products, rubber, fertilizer and chemicals depend upon the farmers who produce grains and oilseeds for a large part of their business.

Thousands of railway freight cars, ships and trucks are used by a vast transportation system in moving grains to markets. There are 5,094 licensed grain elevators with a storage capacity of 697.5 million bushels. Wheat alone made up 12.4 per cent of the total tonnage through the St. Lawrence Seaway in 1967 (18.2 per cent in 1966). An average of about 10 per cent of the total tonnage hauled annually by Canadian railways is wheat.

Both the value and composition of Canada's agricultural export trade have changed markedly since the Second World War. The average annual value of Canada's agricultural exports during the five years 1964 to 1968 was \$1.6 billion as compared with \$307 million for the five years 1935/1939 and \$921 million for the period 1954/1958 (Table I-3). While the exports of nearly all agricultural products increased, the growth rate of exports of grains and oilseeds and their products was higher than for most products. Consequently, the proportion of the total agricultural exports accounted for by grains and oilseeds and their products increased from 61, during the prewar period, to 74 per cent. Livestock and livestock products, on the other hand, decreased from 30 to 15 per cent of total agricultural exports.

Exports of the different types of grain crops produced in Canada vary considerably from year to year, and so too does production. Normally between 50 and 75 per cent of the annual production of wheat is exported. Exports take from a half to three-quarters of the annual production of rye, flaxseed and rapeseed. About one-fifth of the barley and a small quantity of oats are exported, most of the production being used domestically for livestock feed.

During individual years of the 12-year period 1957 to 1968, exports of grains and grain products made up from 57 to 72 per cent of the annual exports of agricultural products and from 6 to 15 per cent of the exports of all commodities. A record was set in 1966 when the total value of grain exports was \$1.1 billion and that of grain products was \$85 million (Table I-4).

Table I-3

AVERAGE ANNUAL VALUE OF CANADA'S AGRICULTURAL EXPORTS BY COMMODITIES
 AVERAGE 1935/1939, 1954/1958, 1964/1968

	1935/1939		1954/1958		1964/1968	
	\$ Thousand	% of Total	\$ Thousand	% of Total	\$ Thousand	% of Total
Total agricultural products	306,920	100.0	921,189	100.0	1,607,234	100.0
Grains	151,954	49.5	522,737	56.7	938,923	58.4
Grain products	29,323	9.6	85,832	9.3	94,138	5.8
Animal feeds of vegetable or animal origin(1)	6,138	2.0	17,748	1.9	39,776	2.1
Oilseeds	54		49,912	5.4	93,974	5.8
Oilseed products	424	0.1	19,677	2.1	28,129	1.8
Animals living	13,927	4.5	40,193	4.4	53,678	3.3
Meats	33,965	11.1	44,825	4.9	65,128	4.0
Other animal products	26,415	8.6	49,506	5.4	85,077	5.3
Dairy products	15,392	5.0	13,971	1.5	41,898	2.6
Poultry and eggs	1,261	0.4	3,647	0.4	4,544	0.3
Fruit and nuts	10,933	3.6	12,533	1.4	25,167	1.6
Vegetables	6,042	2.0	5,177	0.6	28,904	1.8
Potatoes	1,994	0.6	6,968	0.8	14,206	0.9
Seeds for sowing	1,783	0.6	11,478	1.2	15,210	0.9
Maple products	1,000	0.3	5,038	0.5	6,132	0.4
Honey and bees	261	0.1	139		1,707	0.1
Sugar	129		86		2,512	0.2
Hops	73		48		--	--
Tobacco raw	4,757	1.5	20,482	2.2	42,318	2.6
Vegetable fibres	58		96		1,213	0.1
Plantation crops	84		1,303	0.1	2,418	0.2
Other agricultural products	953	0.3	9,793	1.1	28,180	1.8

(1) Prior to 1961, this item included millfeeds and fodder only.

Source: Canada Trade in Agricultural Products with the United Kingdom, the United States and All Countries, op. cit.

Table I-4

EXPORTS: GRAINS AND GRAIN PRODUCTS, OILSEEDS AND OILSEED PRODUCTS, CANADA
AVERAGE 1957/1959; ANNUAL 1960 TO 1968

(\$ Million)

	Average									
	1957/1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>Grains</u>										
Wheat (1)	422	411	662	602	787	1,024	840	1,061	741	684
Oats (2)	14	5	2	6	22	12	18	12	4	5
Barley	71	52	49	30	24	51	44	45	73	40
Rye	6	4	6	9	7	8	6	13	12	7
Subtotal	513	472	719	647	840	1,095	908	1,131	830	736
<u>Grain products</u>										
<u>Human food</u>										
Wheat flour	65	62	61	57	62	100	66	83	61	58
Oatmeal, rolled oats	1	1	1	1	2	2	1	1	1	--
Macaroni, spaghetti	1	1	1	1	1	1	1	1	2	--
Subtotal	67	64	63	59	65	103	68	85	63	60
<u>Animal feeds</u>										
Bran, middlings, etc. (wheat)	3	3	2	3	4	6	5	6	3	3
Screenings	4	3	3	2	6	8	7	9	10	8
Oats, chopped or by-products	1	1	--	--	1	1	2	1	2	1
Mixed feed oats	--	--	--	1	1	1	1	1	2	1
Feeds and feed concentrates	--	--	4	3	4	4	6	8	9	9
Subtotal	8	7	9	9	16	20	21	25	26	22
Total: Grains and Grain products	588	543	791	715	921	1,218	997	1,241	919	818
<u>Oilseeds</u>										
Oilseed products	71	68	71	73	64	68	98	118	102	84
Total: Oilseeds and Oilseed products	19	18	18	26	30	29	35	28	25	24
TOTAL	678	629	880	814	1,015	1,315	1,130	1,387	1,046	926

(1) Includes wheat for seed.

(2) Includes oats for seed.

Source: Canada Trade in Agricultural Products with the United Kingdom, the United States and All Countries, op. cit.

Future Markets for Canadian Grains

Oilseeds and oilseed products have been exported in appreciable quantities only since the late 1940's. The value of oilseed exports averaged \$71 million a year during 1957 to 1959 and \$101 million during 1966 to 1968. Exports of oilseed products averaged \$19 million and \$26 million, respectively, for the above periods. Exports of these commodities were at a peak in 1966, when in aggregate they totalled \$146 million.

In each of the years from 1963 to 1967, exports of grains and oilseeds and their products totalled more than \$1 billion. Between 1957 and 1966, they accounted for 12 to 16 per cent of the annual exports of all commodities, but dropped to 9.4 and 7.0 per cent respectively in 1967 and 1968.

The value of exports of agricultural products in 1967 was \$378.5 million less than in 1966; \$340.9 million of the decrease was because of reduced exports of grains and oilseeds. A further decline in the value of agricultural exports again occurred in 1968 amounting to \$87.8 million. This decline was accounted for by a further falling-off in exports of grains and oilseeds amounting to \$121.5 million, part of which was balanced by an increase in exports of other agricultural products.

Even though the value of exports of grains and oilseeds have declined from the high levels of the mid-1960's, they are the source of 66 per cent of the value of Canada's agricultural exports. They are, therefore, still a very important earner of foreign exchange and continue to play a key role in contributing to the well-being of the national economy.

CHAPTER II

WORLD PRODUCTION AND TRADE IN GRAINS

World production of cereals (including Mainland China), which are the basic source of food, amounted to well over one billion metric tons in 1968 (Table II-1). This may be compared with an estimated world production of 650 million tons in 1950,^{1/} thus representing an average yearly increase of about 4 per cent. About 28 per cent of world grain production is accounted for by wheat and 3 per cent by rye, about 27 per cent by rice and most of the remaining 42 per cent by coarse grains. Of the coarse grains, about 50 per cent is corn, 23 per cent barley, 15 per cent sorghums and millet, and 10 per cent oats.

The geographic distribution of production of the different cereals is dictated largely by climatic conditions although during recent decades the plant breeder has done much to extend the earlier production boundaries of each type of cereal. Generally speaking, rye and oats belong to cooler climates. Barley and wheat thrive in the temperate zones and the subtropics but not in tropical climates. Corn and rice are found in the tropical, subtropic and temperate zones, but not in the cooler rye-oats belt. Although consumers in the different regions display strong preferences and frequently offer resistance to changes in their staple cereal food, the nonperishability of cereals and their consequent adaptability to economical handling and shipping as well as their indirect consumption as feed for livestock have stimulated their production on a highly specialized basis in certain countries and their movement in international trade.^{2/}

This development has occurred particularly in the case of wheat, which as evidenced by the fact that 20 per cent of world production is exported, has become the basic human food in most areas of the world. However, a marked decline has occurred in direct consumption of wheat per capita during four decades in 14

^{1/} Trends in Wheat Consumption, Secretariat Paper No. 4, IWC, 1964, p. 8.

^{2/} Ibid., p. 19.

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relatively high income countries of the main wheat-eating area. On the other hand, direct consumption of wheat per capita has been increasing rapidly in the less developed countries.^{3/}

While rye, which is the traditional bread grain in much of Europe, is used in many areas of the world for the production of bread and other foods as specialty items, it has tended even in Europe to be displaced by wheat. The recent decline of rye in favour of wheat is unlikely to have been a consequence of increased incomes; it is probably more closely connected with the peculiarities of rye flour which requires special skill in handling, but it continues a secular trend bound up with more general changes in the way of life.^{4/} Less than 2 per cent of the world rye production is exported.

Rice is, in the main, produced in the subsistence farming economies of the subtropics and tropics. The pattern of consumption for rice differs from that of production much less than in the case of wheat. Less than 4 per cent of the production of rice enters into international trade.

Coarse grains, particularly corn and millet, continue to be very important sources of carbohydrates in the human diet in many of the more densely populated and less developed areas of the world but these grains tend to be displaced by wheat or rice as incomes increase.^{5/} In recent years, the demand for coarse grains for livestock feeding by the higher income developed countries has risen very rapidly and has resulted in a new pattern of international trade in grains.

^{3/} Ibid., pp. 38-45.

^{4/} Ibid., p. 39, and N. Jasvey, Competition Among Grains, Food Research Institute, Stanford University, 1940.

^{5/} Ibid., pp. 40-46.

Table II-1

WORLD PRODUCTION OF WHEAT, RYE, COARSE GRAINS AND RICE
AVERAGE 1961/1963; ANNUAL 1965 TO 1968

(Production - Million metric tons;
Exports - Per cent of production)

	Average 1961/1963		1965		1966		1967		1968	
	Produc- tion	Exports	Produc- tion	Exports	Produc- tion	Exports	Produc- tion	Exports	Produc- tion	Exports
<u>Excluding Mainland</u>										
<u>China</u>										
Wheat	220.8	22.2	240.1	26.0	283.0	20.1	270.7	17.6	307.6	13.4
Rye	33.6	2.4	35.5	1.4	31.0	1.9	31.7	1.6	32.5	n.a.
Coarse grains:										
Barley	79.2	7.8	88.0	7.6	98.6	6.4	102.5	6.0	108.4	n.a.
Oats	47.9	2.7	45.0	3.6	46.5	2.8	48.4	2.3	52.4	n.a.
Corn	194.3	9.6	200.6	13.1	218.1	11.6	226.7	12.0	220.4	n.a.
Millet and sorghums	53.2	6.8	59.9	11.6	64.3	14.6	69.0	8.7	68.3	n.a.
Mixed grains	6.2	--	6.0	--	6.2	--	6.3	--	6.4	n.a.
Subtotal	380.8	7.8	399.5	10.4	433.7	9.5	452.9	9.0	455.9	n.a.
Rice	156.1	4.0	158.4	4.3	159.7	3.7	177.4	3.2	185.4	n.a.
Total all grains	791.3	10.8	833.5	13.2	907.4	11.6	932.7	10.1	981.4	n.a.
<u>Mainland China</u>										
Estimated production	20.3	n.a.	21.5	n.a.	20.8	n.a.	23.0	n.a.	21.0	n.a.
Wheat	81.0	n.a.	95.3	n.a.	93.4	n.a.	104.9	n.a.	n.a.	n.a.
Rice										
Coarse grains (1)										

(1) On the basis of available statistics, average production of coarse grains for 1952/1956 for Mainland China was 49.2 million metric tons, made up of (in million metric tons) 12.9 for barley, 1.5 for oats, 18.8 for corn, 16.0 for millet and sorghums. Current statistics are not available.

Source: IWC, Review of the World Wheat Situation, London.

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Wheat

World wheat production reached a peak level of about 328 million metric tons in 1968, some 48 per cent higher than the five-year average 1954/1958 (Table II-2).

According to available statistics, wheat production in Mainland China and in South America, other than Argentina, showed no significant increase during this period. Otherwise, the increase in production of wheat was widespread and fairly uniform on a wide geographic basis. The greatest increase occurred in Australia where production in the 1968 crop year was more than three times the average for the period 1954 to 1958. Production in Asia and in Eastern Europe increased by 60 per cent, while in the remaining areas the rate of increase in production was generally similar to the world average.

High variability of wheat production from year to year is a characteristic of many wheat-producing countries. In the case of wheat for milling, this variation in production may be accentuated or moderated by differences in quality resulting from weather conditions during growing or harvesting. In most importing countries, only moderate changes occur from year to year in the acreage seeded to wheat. However, as a result of variable weather conditions, the year-to-year variation in average yields is very great and this accounts for most of the variation in production. During the period 1957 to 1968, yields increased generally, but in some countries the increase in yields was much greater than in others as a result of technological developments. Increases in yield of between 50 and 100 per cent occurred in some countries. In India and Pakistan, for example, as a result of the introduction of improved varieties of wheat together with favourable weather conditions, average yields in 1968 were about 40 per cent and 30 per cent higher, respectively, than in 1967.

Table II-2

WHEAT PRODUCTION BY REGION AND SELECTED COUNTRIES
 AVERAGE 1954/1958, 1959/1963, 1964/1968; ANNUAL 1964 TO 1968

(Million metric tons)

	Average							
	1954/1958	1959/1963	1964/1968	1964	1965	1966	1967	1968
Western Europe	37.0	41.9	48.8	46.7	48.8	44.5	52.0	51.7
EEC countries	22.8	25.5	30.0	29.2	30.5	26.5	31.4	32.2
United Kingdom	2.8	3.1	3.8	3.8	4.2	3.5	3.9	3.5
Other Western Europe	11.4	13.3	15.0	13.7	14.1	14.5	16.7	16.0
Eastern Europe	11.6	13.6	18.3	14.4	18.6	18.1	20.1	20.2
U.S.S.R.	58.4	64.0	81.6	74.4	59.6	100.5	77.3	96.2
North and Central America	42.3	47.6	58.3	53.6	55.6	59.9	59.9	62.6
Canada	12.0	13.8	18.1	16.3	17.7	22.5	16.1	17.7
United States	29.1	32.4	38.2	35.1	35.8	35.7	41.5	42.7
South America	9.4	8.3	9.7	13.8	8.4	8.4	9.4	8.6
Argentina	6.5	6.1	7.4	11.3	6.2	6.2	7.3	5.9
Asia	27.7	32.2	36.7	31.5	35.6	33.4	37.9	45.1
India	8.6	10.8	12.1	9.9	12.3	10.4	11.4	16.6
Pakistan	3.5	4.0	4.9	4.2	4.6	3.9	4.4	6.5
Turkey	7.1	8.3	9.3	8.4	8.6	9.7	10.3	9.6
Mainland China	24.7	21.6	21.9	23.1	21.5	20.8	23.0	21.0
Africa	5.6	5.5	6.3	5.8	6.1	5.2	6.2	8.1
Oceania	4.5	7.6	10.7	10.3	7.4	13.0	7.9	15.1
Australia	4.4	7.4	10.4	10.0	7.1	12.7	7.6	14.7
WORLD	221.2	242.3	292.3	273.6	261.6	303.8	293.7	328.6

Source: IWC, World Wheat Statistics, London; Review of the World Wheat Situation, op. cit.

Future Markets for Canadian Grains

To assist in the analysis of developments relating to production and trade in wheat, the wheat importing countries have been divided into three economic groups: developed countries, developing countries and centrally planned (Communist) countries.^{6/} The economically developed group of countries account for about 40 per cent of the world production of wheat (Table II-3). They also account for 25 to 30 per cent of world wheat imports and are the source for nearly 90 per cent of world wheat exports. The centrally planned (Communist) group of countries account for about 40 per cent of world wheat production and 20 to 30 per cent of world wheat imports. Developing countries produce about 16 per cent of world wheat production and in recent years account for 40 to 50 per cent of wheat imports. As compared with the five years 1954 to 1958, production during the last three years 1966 to 1968 was 40 per cent higher in the developed countries and in the centrally planned (Communist) group, and 33 per cent higher in the developing countries. Within the economically developed group, the major exporting countries increased production by 50 per cent while in the traditional importing countries production increased 38 per cent.

^{6/} Developed importing countries include the United Kingdom, EEC, the rest of Northwestern Europe, South Europe, Japan, South Africa and New Zealand; developing countries include countries of Latin America, Africa, the Near East and Far East, not otherwise listed in other groups; centrally planned (Communist) countries include U. S. S. R., Eastern Europe, Cuba, Mainland China, North Korea and North Vietnam.

Table II-3

WHEAT PRODUCTION BY ECONOMIC GROUPINGS OF COUNTRIES
 AVERAGE 1954/1958, 1959/1963, 1964/1968; ANNUAL 1964 TO 1968

(Million metric tons)

	1954/1958	Average 1959/1963	1964/1968	1964	1965	1966	1967	1968
<u>Developed countries</u>								
Major exporting countries(1)	52.1	59.7	74.0	72.7	66.8	77.1	72.5	81.0
Traditionally importing(2)	<u>38.4</u>	<u>43.3</u>	<u>49.9</u>	<u>47.9</u>	<u>50.1</u>	<u>45.5</u>	<u>53.0</u>	<u>52.7</u>
Subtotal	90.5	103.0	123.9	120.6	116.9	122.6	125.5	133.7
Per cent of total	40.9	42.5	42.4	44.1	44.7	40.4	42.7	40.7
<u>Developing countries</u>								
Per cent of total	36.1	40.1	46.6	41.1	45.0	41.8	47.8	57.5
	16.3	16.6	15.9	15.0	17.2	13.8	16.3	17.5
<u>Communist countries</u>								
Per cent of total	94.6	99.2	121.8	111.9	99.7	139.4	120.4	137.4
	42.8	40.9	41.7	40.9	38.1	45.8	41.0	41.8
WORLD TOTAL	221.2	242.3	292.3	273.6	261.6	303.8	293.7	328.6
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(1) Canada, United States, Argentina and Australia.

(2) Western Europe and Japan.

Source: Review of the World Wheat Situation, op. cit.

The World Wheat Market

World trade in wheat as measured by aggregate world imports of wheat and flour increased from an average of 30 million metric tons during 1954/1958 to a high of almost 62 million tons in 1965, following which it declined to less than 52 million tons in 1967 (Table II-4). Omitting the high years 1963, 1965 and 1966, the aggregate average annual rate of growth in imports of wheat and flour was somewhat less than 4 per cent. Trade statistics for 1968 exclude intra-EEC trade, and therefore are not comparable with 1967 and earlier years.

Marked changes occurred in the world pattern of trade in wheat during this period. Average imports of wheat and flour by developed countries made up 64 per cent of the total wheat trade during the period 1954 to 1958 but only 28 per cent in 1967. During the same period the share of the market requirements going to developing countries increased from 25 to 51 per cent and that of centrally planned (Communist) countries from 11 to 21 per cent.

A detailed examination of changes in the demand pattern for wheat and flour indicate that a characteristic of trade in wheat during this period was a wide variation from year to year in imports both for regions and for individual countries. An explanation for such wide year-to-year variations in imports of wheat may be found in the amount and quality of each year's wheat crop in individual countries. Since most important wheat importing countries are also substantial wheat producers, their imports usually represent their residual requirements after taking domestic production and the milling quality of the crop into account. In 1963, for example, a 30 per cent decrease in the U. S. S. R. wheat crop gave rise to an increase in imports of wheat amounting to nine million tons.

Developed countries imported 14.4 million metric tons of wheat and flour in 1967, a reduction of 5.1 million tons as compared with the average for the five-year period 1954 to 1958. During the same period production of wheat in the developed importing countries increased 15 million metric tons (Table II-3).

Table II-4

IMPORTS OF WHEAT AND WHEAT FLOUR BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1954/1958; ANNUAL 1959 TO 1968

(Thousand metric tons)

	Average 1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>Developed countries</u>	16,795	14,174	17,465	19,656	15,227	16,402	15,679	17,207	16,460	14,837	15,361
EEC countries	5,396	4,054	6,398	6,622	3,903	4,516	4,058	4,709	4,407	4,719	4,447(1)
United Kingdom	5,161	4,468	4,711	4,692	4,258	4,605	4,189	4,664	4,176	4,077	4,467
Other N.W. Europe	1,808	1,798	1,341	1,391	1,747	1,315	1,315	1,606	1,277	1,117	1,190
South Europe	1,739	720	1,889	3,834	2,416	1,588	2,208	2,223	1,346	660	791
Japan	2,303	2,566	2,834	2,773	2,663	3,919	3,546	3,553	4,260	4,028	4,349
Oceania	312	280	240	260	260	310	330	290	195	140	117
South Africa	136	286	73	84	241	164	80	162	800	96	--
<u>Developing countries</u>	10,346	16,010	16,007	16,378	17,322	17,724	20,465	22,330	26,241	26,281	20,928
North and Central America	1,826	1,170	827	802	895	934	844	764	801	890	807
South America	2,663	3,280	3,200	3,720	3,710	3,480	4,030	4,117	4,809	5,080	4,939
Africa	1,725	2,994	2,627	4,206	3,349	3,286	3,820	4,488	6,240	5,994	5,188
Asia	5,132	8,566	9,353	7,650	9,368	10,024	11,771	13,561	14,391	14,317	9,994
<u>Centrally planned countries</u>	3,370	5,018	7,204	9,654	10,033	20,522	13,366	21,461	15,438	10,703	8,461
Eastern Europe	2,944	4,958	4,817	4,520	4,692	5,999	5,198	5,373	5,051	4,287	3,833
U.S.S.R.	203	60	204	--	--	8,859	2,656	9,187	4,683	1,534	147
Mainland China	25	--	1,960	4,746	4,871	5,198	5,046	6,325	5,124	4,156	3,776
Cuba	198	--	223	388	470	466	466	576	580	726	705
WORLD TOTAL	30,511	35,202	40,696	45,688	42,582	54,648	49,510	61,598	58,139	51,858	45,075(1)

(1) Excluding EEC intra-trade.

Source: 1956 to 1959: FAO, World Grain Trade Statistics, Rome; 1960 to 1967: World Wheat Statistics, op. cit.; 1968: IWC, Review of the World Grains Situation, London.

Future Markets for Canadian Grains

The degree of self-sufficiency in wheat, which varies markedly between individual countries, is often less likely to reflect a country's technical and economic capacity to produce wheat than its political capacity to provide national policies such as import restrictions and domestic price and other production subsidies, which serve as incentives to increase domestic wheat production and also limit access of supplies from other countries. The United Kingdom, the EEC countries and Japan together account for almost 90 per cent of wheat imports of the developed group of countries. Policy developments in such countries, therefore, have a very significant impact on the international trade in grains.

Imports of wheat and flour by developing countries amounted to 26.9 million tons in 1967, which more than doubled the average imports for the five years 1954 to 1958. Of the wheat imports in 1967, about 58 per cent went to Asia, 20 per cent to Africa and 20 per cent to Latin America. Government-assistance programs have been a major factor in the imports of wheat and flour by developing countries. United States export programs accounted for 70 to 80 per cent of the exports to Asia and 50 to 70 per cent of the exports to Africa. Although government-assisted programs have decreased in more recent years, it is likely that aid will continue to be a major factor in shipments to developing countries.

In the centrally planned countries, imports of wheat and flour in 1967 amounted to 10.7 million tons. This was almost three times the average imports by the group during the period 1954 to 1958 and equal to the average for the five years 1959 to 1963. However, it was only half of the record imports by this group in 1963 and 1965, the years of the large Soviet purchases.

The past decade in the centrally planned countries has been a period of important technical and economic adjustment in agriculture. Important developments have included the adoption of modern production techniques, including mechanization and the increased use of fertilizer and improved seeds. Many problems relating to the operation of collective farms have been recognized and corrected. These changes, together with favourable weather, are reflected in increases in production in the order of 50 per cent in the U. S. S. R. and many of the countries of Eastern Europe, in decreased imports of wheat from sources outside the Soviet Bloc and in the reappearance during the past year of U. S. S. R. and Eastern European wheats in world markets.

Coarse Grains

World production of coarse grains (excluding Mainland China) reached a high point of 456 million metric tons in 1967 as compared with averages of 368 million tons for the three years 1959/1961 (Table II-5).

Corn, which currently makes up 50 per cent of the production of coarse grains, increased by 21 per cent. Barley, which accounts for 23 per cent of the production of coarse grains, increased 46 per cent, and millet and sorghums, making up 15 per cent of the coarse grain supply, increased by 35 per cent. Oats and mixed grains, which together account for 12 per cent of the production of coarse grains, decreased slightly.

Reliable statistics on coarse grain production in Mainland China are not available since 1956. On the basis of the five years 1952/1956, Mainland China accounted for 11 per cent of total world coarse grain production. Chinese production of coarse grains was made up of 38 per cent corn, 33 per cent millet and sorghums, 26 per cent barley and 3 per cent oats. Information is not available on the proportion of coarse grains used for human food and feed for livestock. Since the consumption of livestock products is probably very low, it may be assumed that the quantity of grains used for livestock is very limited and that by far the greater part of the production of coarse grains would be utilized for human food.

The geographic distribution of the world production of the different coarse grains, excluding Mainland China, shows the United States to be the principal coarse grain producing country, accounting for more than one-third of the total production (Table II-6).

The production of coarse grains in the United States has increased by 50 per cent over the average for 1952/1956 and is made up primarily by corn. Coarse grain production in Western Europe, which also increased by over 50 per cent, makes up about 13 per cent of the total production. Barley is the principal coarse grain in Western Europe, but corn production is increasing very rapidly in some Western European countries. Canadian production of coarse grains which makes up only about 3 per cent of the world total and is composed primarily of barley and oats, showed no increase over the 1952/1956 average.

Table II-5

WORLD⁽¹⁾ PRODUCTION OF COARSE GRAINS
 AVERAGE 1959/1961; ANNUAL 1962 TO 1968
 (Million metric tons)

	Average 1959/1961	1962	1963	1964	1965	1966	1967	1968
Corn	186.8	194.3	194.6	192.4	199.3	220.5	229.2	220.4
Barley	70.8	83.2	85.5	92.5	88.1	99.1	101.1	108.4
Oats	53.7	48.6	45.8	42.7	45.0	46.6	48.8	52.4
Millet and sorghums	51.0	53.8	55.7	56.2	62.1	65.4	70.8	68.3
Mixed grains	5.7	6.4	6.3	6.2	5.9	6.0	6.1	6.4
Total	368.0	386.3	387.9	390.0	400.4	437.6	456.0	455.9

(1) Excluding Mainland China.

Source: Review of the World Wheat Situation, op. cit.

Table II-6

COARSE GRAINS: PRODUCTION, BY REGION AND SELECTED COUNTRIES
 AVERAGE 1952/1956; ANNUAL 1967
 (Million metric tons)

	Corn		Barley		Millet and Sorghums		Oats		Total	
	Average 1952/1956	1967	Average 1952/1956	1967	Average 1952/1956	1967	Average 1952/1956	1967	Average 1952/1956	1967
EEC countries	4.1	7.7	6.0	15.9	--	--	7.8	6.0	17.9	29.6
United Kingdom	--	--	2.6	9.4	--	--	2.7	1.3	5.3	10.7
Other W. Europe	4.6	9.7	6.3	13.1	--	--	4.7	5.9	15.6	28.7
Eastern Europe	8.0	12.7	4.7	7.6	--	--	5.2	4.8	17.9	25.1
U.S.S.R.	6.9	9.1	9.7	24.6	3.4	4.0(1)	11.5	11.5	31.5	49.2
Canada	0.6	1.9	5.4	5.4	--	--	6.4	4.7	12.4	12.0
United States	73.8	120.0	7.1	8.0	4.5	19.4	19.6	11.4	105.0	158.8
Mexico	4.1	8.8	--	--	--	--	--	--	4.1	8.8
Other North and Central America	1.8(1)	2.1	0.4(1)	0.3	0.6(1)	1.3	--	--	2.8	3.7
Argentina	3.3	6.6	--	--	0.4	1.9	1.0	1.0(1)	4.7	9.5
Other South America	10.0(1)	15.8	1.1	1.3	--	--	--	--	11.1	17.1
India	2.9	6.3	2.8	--	15.1	19.2	--	--	20.8	25.5
Other Asia	6.0(1)	9.6	9.0(1)	13.4	--	1.4	--	--	15.0	24.4
South Africa	3.2	5.3	--	--	0.2	0.2	--	--	3.4	5.5
Other Africa	6.0(1)	10.9	2.8	2.6	10.0(1)	21.6	--	--	18.8	35.1
Oceania	--	--	2.0(1)	0.8	--	--	1.2	1.8	3.2	2.6
WORLD	135.3	226.5	59.9	102.4	34.2	69.0	60.1	48.4	289.5	446.3

(1) Estimated.

Source: FAO, Production Yearbook, Rome; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

In the above group of developed countries which account for 50 per cent of the coarse grain production, coarse grains are used primarily for livestock feeding.

Production of coarse grains in the U. S. S. R. and Eastern European countries also increased 50 per cent over the average for 1952/1956 and account for 17 per cent of total production. Barley and corn are both important coarse grains in these countries where they are used primarily for livestock feeding but also for human food.

In the developing group of countries, coarse grains are used primarily for human food but their utilization in livestock feeding is increasing rapidly. The principal coarse grains in this group of tropical and subtropical countries are corn, and millet and sorghums which are produced for domestic consumption.

World trade in coarse grains amounting to 41 million tons in 1967 was more than double the 18 million tons for the five-year average 1956/1960 and 50 per cent higher than the 1959 to 1963 average (Table II-7). This rapid growth in trade in coarse grains is a reflection of the expansion in livestock feeding, particularly in the economically developed countries which account for 87 per cent of the import demand for coarse grains. This represents a threefold increase in the imports of corn, and millet and sorghums which make up about 65 and 15 per cent, respectively, of the aggregate trade in coarse grains. The world trade in barley did not share in this increase but remained relatively constant during this period and accounts for 15 per cent of the imports of coarse grains.

Within the developed group of countries the EEC production of coarse grains was 65 per cent higher in 1967 than the average for the five years 1952 to 1956 (Table II-6). The 1967 imports of coarse grains were 75 per cent higher than the average for the period 1956 to 1960 (Table II-8). In this period EEC exports of coarse grains almost quadrupled (Table II-9). Since 1963, the EEC (France) has been the world's largest exporter of barley (Table II-10). This has been accomplished through the subsidization of exports at a level which will ensure that EEC barley is competitive. In this connection, the subsidy on EEC exports of barley to Japan was as high as \$1.23 per bushel during 1968; a level considerably higher than the Canadian sale price for barley at Pacific ports.

Table II-7

WORLD IMPORTS OF COARSE GRAINS
 AVERAGE 1956/1960; ANNUAL 1961 TO 1967
 (Million metric tons)

	Average 1956/1960	1961	1962	1963	1964	1965	1966	1967
Corn	9.4	16.3	17.6	21.0	21.2	25.5	25.2	27.1
Barley	6.5	7.1	4.7	6.6	6.2	6.9	6.2	6.2
Oats	1.4	1.4	1.4	1.2	1.4	1.5	1.3	1.3
Rye	0.8	1.0	1.1	0.6	0.5	0.5	0.6	0.4
Millet and sorghums	2.3	3.2	3.8	3.4	4.2	6.8	9.4	6.1
Total	20.4	29.0	28.6	32.8	33.5	41.2	42.7	41.1

Source: World Grain Trade Statistics, op. cit.

Table II-8

IMPORTS OF COARSE GRAINS (1) TO ECONOMIC GROUPINGS OF COUNTRIES
 AVERAGE 1956/1960; ANNUAL 1961 TO 1967
 (Thousand metric tons)

	Average							
	1956/1960	1961	1962	1963	1964	1965	1966	1967
<u>Developed countries</u>								
United Kingdom	4,069	5,167	4,675	4,224	3,920	4,316	4,125	4,076
EEC	8,449	12,288	12,325	13,480	13,964	17,918	16,863	14,793
Intra-EEC trade (2)	(928)	(1,609)	(1,119)	(1,681)	(2,302)	(2,809)	(2,639)	(2,398)
Other N.W. Europe	2,574	2,287	2,944	2,489	2,836	3,235	2,977	4,625
Spain	233	504	831	2,019	1,553	3,146	3,094	2,661
Other South Europe	138	228	269	525	346	480	589	545
Subtotal W. Europe	15,463	20,474	21,044	22,737	22,619	29,095	27,648	26,700
Canada	336	786	778	578	434	551	530	819
United States	626	405	156	302	354	246	241	225
Japan	1,512	2,407	2,948	4,568	5,108	5,202	7,771	7,993
Total	17,937	24,072	24,926	28,185	28,515	35,094	36,199	35,737
<u>Developing countries</u>								
Latin America	650	667	593	576	701	592	389	669
Africa	263	1,485	451	648	616	925	761	625
Asia								
Near East	416	590	635	626	595	809	885	975
Far East	443	763	947	597	587	1,558	2,999	1,882
India	79	76	--	70	121	1,100	2,155	970
Total	1,772	3,505	2,626	2,447	2,479	3,984	5,034	4,151
<u>Centrally planned countries</u>								
Eastern Europe	442	185	615	1,185	1,180	1,780	1,195	840
Others (3)	209	1,288	410	1,005	474	195	211	285
Total	651	1,473	1,025	2,190	1,654	1,975	1,406	1,125
WORLD TOTAL	20,360	29,050	28,577	32,822	32,668	41,053	42,639	41,013

(1) Including rye.

(2) From "Grain Developments in the Common Market", USDA FAS M-202, December 1968.

(3) Mainland China and Cuba.

Source: World Grain Trade Statistics, op. cit.

Table II-9

EXPORTS OF COARSE GRAINS⁽¹⁾ FROM ECONOMIC GROUPINGS OF COUNTRIES
 AVERAGE 1956/1960; ANNUAL 1961 TO 1967
 (Thousand metric tons)

	Average 1956/1960	1961	1962	1963	1964	1965	1966	1967
<u>Developed countries</u>								
United Kingdom	172	351	209	83	112	680	1,108	874
EEC	1,263	2,518	1,949	3,827	4,209	4,322	4,653	4,855
Intra-EEC trade ⁽²⁾	(928)	(1,609)	(1,119)	(1,681)	(2,302)	(2,809)	(2,839)	(2,398)
Other N. W. Europe	361	887	442	407	516	563	498	518
Yugoslavia	386	156	98	70	22	203	916	680
Other South Europe	115	74	76	46	89	74	25	80
Subtotal W. Europe	2,297	3,986	2,774	4,433	4,948	5,842	7,200	7,007
Canada	1,741	1,057	741	1,312	1,068	1,199	1,312	1,208
United States	9,439	14,359	15,347	15,795	17,628	25,536	20,366	19,677
Argentina	2,940	3,527	3,280	3,795	5,182	3,799	6,543	4,264
Australia	870	1,105	625	745	756	495	902	350
South Africa	845	1,725	2,307	2,417	702	312	654	3,360
Total	18,132	25,759	25,074	28,497	30,284	37,183	37,580	35,866
<u>Developing countries</u>								
Latin America	78	68	145	823	1,085	2,057	1,787	2,419
Africa	743	720	843	873	518	463	456	475
Asia								
Near East	331	416	644	534	296	331	104	130
Far East	389	740	890	1,100	1,085	1,335	1,460	1,375
Total	1,541	1,944	2,522	3,330	2,984	4,186	3,807	4,399
<u>Centrally planned countries</u>								
Eastern Europe	344	955	880	1,065	780	465	630	670
Others ⁽³⁾	605	946	496	334	635	353	513	282
Total	949	1,901	1,376	1,399	1,415	818	1,143	952
WORLD TOTAL	20,622	29,604	28,972	33,226	34,683	42,187	42,530	41,217

(1) Including rye.

(2) From "Grain Developments in the Common Market", *op. cit.*

(3) U. S. S. R. and Mainland China.

Source: World Grain Trade Statistics, *op. cit.*

Table II-10

EXPORTS OF BARLEY BY PRINCIPAL EXPORTING COUNTRIES
 AVERAGE 1956/1960; ANNUAL 1961 TO 1967
 (Thousand metric tons)

	Average 1956/1960	1961	1962	1963	1964	1965	1966	1967
Western Europe	1,204	2,600	1,600	2,760	2,925	3,240	3,605	4,100
EEC countries	1,833	1,990	1,204	2,451	2,459	2,101	2,061	2,816
France	731	1,661	977	2,254	2,240	1,839	1,837	2,597
Germany, F.R.	17	102	31	30	43	38	20	18
Netherlands	72	220	184	154	146	167	151	126
United Kingdom	124	341	185	--	145	678	1,108	795
Denmark	181	115	--	--	222	280	224	162
Sweden	28	117	50	108	129	88	84	138
Eastern Europe	72	65	80	90	80	100	70	85
U.S.S.R.	266	405	100	30	265	180	30	80
Canada	1,377	898	228	887	723	706	992	1,011
United States	1,979	1,787	1,404	1,466	1,268	1,618	933	643
Argentina	364	213	50	302	446	145	52	154
Asia	367	460	670	520	270	300	85	100
Iraq	131	275	129	26	53	25	69	18
Syria	143	107	397	432	181	202	2	66
Africa	224	5	200	360	115	120	40	10
Algeria	76	--	76	197	90	--	30	--
Morocco	83	--	115	114	16	5	--	--
Tunisia	56	--	--	33	2	17	2	2
Australia	610	713	234	429	369	227	428	129
WORLD TOTAL	6,460	7,146	4,566	6,844	6,461	6,636	6,235	6,312

Source: World Grain Trade Statistics, op. cit.

World Production and Trade in Grains

As a result of the expansion in livestock feeding from an average of four million tons during the 1956 to 1960 period, United Kingdom imports of coarse grains increased to five million tons in 1961, but by 1967 had fallen back to the four million ton level. With attractive production subsidies, domestic production of barley increased from an average of 2.6 million tons for the period 1952/1956 to 9.4 million tons in 1967. This increased production not only resulted in a falling-off of imports of coarse grains into the United Kingdom but in 1966 the United Kingdom was the second largest exporter of barley, surpassed only by EEC (Table II-10).

Although making up only 10 per cent of the world trade in coarse grains, the imports of coarse grains by developing countries more than doubled between 1956/1960 and 1967 (Table II-8). Increases in imports of coarse grains which occurred particularly in Africa and Asia were accompanied by sharp increases also in domestic production of coarse grains.

Those centrally planned countries which are particularly well-adapted to the production of coarse grains have sharply increased production of barley and corn. Imports and exports of coarse grains have been largely between members of the Communist Bloc. Imports increased generally but varied from year to year. They were particularly high in 1963 and 1965 but much lower in 1967.

CHAPTER III

PROJECTIONS FOR THE CONSUMPTION AND PRODUCTION OF GRAINS TO 1975

A number of comprehensive sets of projections are available covering consumption and production, and showing the resultant net trade balance for some of the principal agricultural commodities to 1970, 1975, 1980 and 1985 for varying periods and areas. Those prepared by FAO during 1966 and 1967 are on a world basis covering both production and consumption to 1975, and consumption alone to 1985.^{1/} Projections included in "The World Food Problem", a report of the President's Science Advisory Committee, which are also on a world basis, are to 1970 generally, and to 1980 for a more restricted group of commodities, notably grains.^{2/} A more recent U.S. study looks ahead to 1980 at the world food situation as reflected in the projected supply of and the demand for grains in aggregate terms.^{3/} The Secretariat of OECD, on instructions from the OECD Committee for Agriculture, prepared projections covering the OECD area and Oceania to 1975 and 1985.^{4/} A report prepared by das Institut für Weltwirtschaft an der Universität, Kiel, for the OECD, analyses the international markets for wheat and feed grains of the most important countries and regions of the world to 1975.^{5/} Two Ph. D. theses prepared

^{1/} Agricultural Commodities - Projections for 1975 and 1985, Vol. I, FAO, Rome, 1967.

^{2/} The World Food Problem, a report of the President's Science Advisory Committee, Vol. II, The White House, Washington, 1967.

^{3/} Martin E. Abel and Anthony S. Rojko, World Food Situation, Economic Research Service, USDA, Foreign Agricultural Economic Report No. 35, 1967.

^{4/} Agricultural Projections for 1975 and 1985 (Europe-North America-Japan, Oceania), Production and Consumption of Major Foodstuffs, OECD, Paris, 1968.

^{5/} Lage and Tendenzen der Weltmärkte der wichtigsten Agrarerzeugnisse -- Getreide, Hausmitteilungen über Landwirtschaft, Kommission der Europäischen Gemeinschaften, Brussels, 1968.

Future Markets for Canadian Grains

by Canadians at the University of Wisconsin are important scholarly contributions in this area. One of these is an analysis of the world wheat economy in 1980 and the other an analysis of the international trade in feed grains in 1980. ^{6/7/} Another thesis study carried out at the University of Saskatchewan is also a useful contribution to the study of future export outlets for Canadian grains. ^{8/} A recent comprehensive study in this area entitled, "Marketing of Canadian Wheat; an Economic Analysis with Projections for 1975 and 1980", by N. Bruce Huff, is a particularly useful contribution. ^{9/}

For constructing an economic model designed to analyse long-term trends in demand, supply and international trade, it is generally assumed that certain basic factors will either remain unchanged, or that they will only change in certain defined ways.

In demand projections these basic assumptions relate primarily to rates of population growth, to rates of increase in total income and in income per capita, to prices and to income elasticities of demand. The FAO projections, which are the most comprehensive, make use of both high and low growth rates for Gross Domestic Product (GDP) for the decades 1965/75 and 1975/85 in the light of past trends and express them as compound annual rates of increase at constant prices. In the projection of food demand, use was made of standardized food balance sheets and allowance was made for the way in which demand changes with increases in income. Projections of demand for nonfood commodities were based on a consideration of the principal factors governing demand

^{6/} Andrew Schmitz, An Economic Analysis of the World Wheat Economy in 1980, Ph. D. Thesis, University of Wisconsin, 1968.

^{7/} Harold F. Bjarnason, An Economic Analysis of 1980 International Trade in Feed Grains, Ph. D. Thesis, University of Wisconsin, 1968.

^{8/} Garry Storey, Long-range Prospects for Canadian Wheat Markets, Master's Thesis, University of Saskatchewan, 1967.

^{9/} N. Bruce Huff, "Marketing of Canadian Wheat; an Economic Analysis with Projections for 1975 and 1980", Department of Agricultural Economics, Michigan State University, East Lansing, 1969.

for each end-use. Since most of the basic factors associated with demand projections lend themselves to statistical measurement with a reasonable degree of accuracy, the estimates of future consumption of grains included in these projections are accepted for purposes of this study.

The projection of agricultural production, however, raises more complex problems than that of demand. It cannot be assumed with validity that the impact on production of agricultural and commercial policies and agricultural technology will continue unchanged. The consequences of even moderate changes in price relationships or in weather may be very far-reaching in terms of production. Mechanical extrapolation based on assumed constants may, therefore, give misleading results and must be checked country by country, making adjustments as necessary on the basis of subjective judgment for changes in prices and in policies and in technological and structural developments.

While for the base periods used the balances between consumption and production represent the actual volume of net imports and exports, the differences between projected consumption and production are not projections of net trade but are an indication of the potential gaps which might develop by the year of the projections on the basis of the underlying assumptions. There is a definite tendency for a statement based on "net imports and exports" to underestimate trade, since many countries export one type of wheat or coarse grain and import other types. However, trade balances are a very useful guide for assessing future trade developments, particularly where used on a country by country basis.

Wheat

Since most of the world trade in wheat takes place between a large number of importing countries, and a small group of exporting countries, in this study projections of future trade in wheat are based on the anticipated consumption and production of wheat in countries that import wheat. To facilitate the analysis of projections covering the consumption and production of wheat and their implications for international trade, the wheat importing countries have been divided into three economic groups: developed countries, developing countries and centrally planned (Communist) countries.

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Taking into account all groups of countries which have been importers of wheat, the FAO projections to 1975 forecast an overall increase in wheat consumption of about 28 per cent over the 1961/1963 base period. Domestic production which provides 80 per cent of consumption requirements, was forecast to increase 30 per cent by 1975, in the event of a low rate of economic growth, and 45 per cent with a high growth rate. The aggregate net balance between consumption and production in 1975 was estimated at 40 million metric tons for the low level of growth assumption and 20 million metric tons with high economic growth (Table III-1).

Since the projected rate of increase in consumption and production varies widely both between and within economic groupings, estimates of future patterns of trade must be based on an examination of regions or individual countries within each group. According to the FAO projections, developed importing countries, on the average, show an increase by 1975 of about 18 per cent in consumption of wheat and 34 per cent in production. The OECD projections which cover the OECD countries have been prepared independently but on a similar basis to the FAO projections (Table III-2). The projections covering bread grains, including both wheat and rye, are in general agreement with those prepared by the FAO. A smaller growth in both consumption and production of wheat for this group of countries is indicated by the OECD projections which show an increase of only 7 per cent in consumption and 17 per cent in production. The implications for the export of wheat of this move towards greater self-sufficiency in wheat on the part of developed importing countries have been modified by an increase in the use of indigenous wheat for livestock feeding. In this connection the OECD projections show an increase of only 3 per cent in the use of wheat for food as compared to a 40 per cent increase in the use of wheat in livestock feeding.

For the United Kingdom, the 1975 projections show only a slight increase in wheat consumption and an increase in the production of wheat in the order of 2.3 million tons or 74 per cent by 1975.

Projections for the EEC show little or no change in the aggregate consumption or utilization of wheat to 1975 but an increase in production of about 10 per cent. Some falling-off of human consumption is forecast, accompanied by a compensating increase in use of wheat for feed.

Table III-1

FAO CONSUMPTION AND PRODUCTION OF WHEAT
IN IMPORTING COUNTRIES
AVERAGE FOR BASE PERIOD 1961/1963, AND PROJECTION FOR 1975
(Million metric tons)

	Average 1961/1963		1975		High GDP	
	Production	Consumption	Production	Consumption	Production	Consumption
<u>Developed countries</u>						
United Kingdom	3.1	7.6	5.4	7.9	5.4	7.8
EEC	25.8	27.0	35.0	31.9	35.0	31.5
Other North Europe	3.2	4.2	3.5	4.5	3.5	4.4
South Europe	17.3	20.1	22.9	23.5	22.9	22.7
Japan	1.4	4.3	1.1	6.6	1.1	7.1
New Zealand	0.2	0.4	0.4	0.3	0.4	0.5
South Africa	0.8	1.0	1.1	1.4	1.1	1.4
Total	51.8	64.6	69.4	76.3	69.4	75.4
<u>Developing countries</u>						
Latin America	4.1	8.7	5.5	13.0	7.0	13.5
Africa	3.2	4.7	4.5	6.9	5.7	7.2
Near East	8.7	11.3	10.8	16.3	14.0	16.6
Far East	15.7	22.6	22.2	35.0	32.5	36.6
Total	31.7	47.3	43.0	71.2	59.2	73.9
<u>Centrally planned countries</u>						
U.S.S.R.	50.0	49.2	59.6	57.5	64.4	56.1
Eastern Europe	13.6	18.1	17.4	20.2	18.0	20.3
Mainland China	19.7	24.5	30.3	35.4	31.8	36.9
Total	83.3	91.8	107.3	113.1	114.2	113.3
TOTAL	166.8	203.7	219.7	260.6	242.8	262.6

Source: Agricultural Commodities - Projections for 1975 and 1985, op. cit.

Table III-2

OECD PRODUCTION AND UTILIZATION OF BREAD GRAINS (WHEAT AND RYE)
 IN THE DEVELOPED IMPORTING COUNTRIES
 AVERAGE FOR BASE PERIOD 1961/1963, AND PROJECTION FOR 1975
 (Thousand metric tons)

	Average 1961/1963			1975				
	Production	Exports	Imports	Utilization	Production	Domestic Utilization	Available for Export	Import Requirements
United Kingdom	3,231	108	4,530	7,612	5,207	8,782	100	3,575
EEC	29,557	4,005	5,804	31,562	32,669	31,134	5,000	3,435
Other N.W. Europe	4,411	565	1,588	5,508	4,598	5,668	600	1,670
South Europe	18,290	12	2,676	20,175	23,034	22,583	451	--
Japan	1,376	80	2,854	4,250	1,054	6,142	--	5,088
New Zealand	237	1	176	399	475	480	--	5
Total	57,102	4,771	17,628	69,506	67,037	74,793	6,151	13,873

Source: Agricultural Protections for 1975 and 1985, op. cit.

Projections for other countries of Northwest Europe show little change in either consumption or production to 1975.

Projections for South European countries indicate an increase in production of wheat by 1975 amounting to about 30 per cent and a balancing of production with the wheat requirements for food.

Projections for Japan show a more than 50 per cent increase in consumption and some falling-off in domestic production of wheat by 1975.

The implications of the FAO and OECD projections of consumption and production for the trade in wheat by the developed importing countries by 1975 suggest a narrowing of the aggregate trade gap.

Projections for the developing countries indicate a 50 per cent increase in consumption of wheat by 1975, while increases in production are forecast at 35 and 85 per cent, respectively, for low and high economic growth assumptions. This would imply a widening of the trade gap for wheat by 1975, particularly in the case of low growth rates.

Projections for the centrally planned countries indicate that wheat consumption will be 27 per cent greater by 1975 than in the base period 1961/1963, and that production will increase 31 per cent with low economic growth rates and 45 per cent with high rates of growth. Projections indicate that production in the U. S. S. R. will slightly exceed domestic wheat requirements. Production in the Eastern European countries is projected to increase by about 27 per cent as compared with 13 per cent for consumption.

Projections for Mainland China are made difficult by the scarcity of reliable statistical data. The FAO projections for wheat forecast an increase of 50 per cent in production by 1975 and an increase of about 45 per cent in consumption.

An examination of actual developments in production, imports, exports and domestic utilization of wheat in the three years 1965/1967 (Table III-3) as compared with the base period of 1961/1963, which was used in the projections for the production and consumption of wheat to 1975 (Table III-1), provides a useful check on these projections.

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Table III-3

WORLD PRODUCTION, TRADE AND UTILIZATION OF WHEAT
BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1965/1967

(Thousand metric tons)

	Produc- tion	Imports	Exports	Utili- zation (1)
<u>Importing countries</u>				
<u>Developed</u>				
United Kingdom	3,882	4,306	15	8,173
EEC	29,318	4,611	5,541	28,388
Other West and South Europe	24,830	2,755	890	26,695
Japan	1,094	3,947	111	4,930
New Zealand	339	99	--	438
South Africa	760	353	--	1,113
Total	60,223	16,071	6,557	69,737
<u>Developing</u>				
Latin America	4,138	6,090	328	9,900
Africa	4,787	5,574	116	10,245
Asia	24,969	14,090	163	38,896
Total	33,894	25,754	607	59,041
<u>Centrally planned</u>				
U.S.S.R.	79,100	5,135	3,804	80,431
Eastern Europe	19,193	4,904	1,100	22,997
Mainland China	21,533	5,202	--	26,735
Total	119,826	15,241	4,904	130,163
Total, Importing countries	213,943	57,066	12,068	258,941
<u>Exporting countries</u>				
Argentina	6,740	--	4,215	2,615
Australia	8,941	--	6,559	2,382
Canada	18,927	--	12,859	6,068
United States	37,636	24	21,289	16,371
Others	359	108	--	467
Total, Exporting countries	72,603	132	44,832	27,903
WORLD TOTAL	286,546	57,198	56,900	286,844

(1) Includes changes in stocks.

Source: World Wheat Statistics, op. cit.

For the developed importing countries, as a group, one-half of the increase in production and consumption covered by the 1975 projection was included in the 1965/1967 average which is roughly one-third of the time period covered by the projections. For each of the countries and regions listed in the developed countries group, the trend indicated in the projection was followed. The smallest adjustment had occurred in the EEC countries and the largest in Western Europe, excluding the United Kingdom and the EEC, and Southern Europe, which by 1967 had already exceeded the projected levels of production and consumption.

The overall growth in wheat production and consumption between the 1961/1963 base period and 1965/1967 in the developing countries group confirmed, in general terms, the trend indicated by the 1975 projection. Within the group, the actual growth in the Latin American countries was somewhat less than the projected rate. The growth for Asian regions approximated that for the developing countries as a group, while the growth rate in Africa exceeded the projections for 1975.

Within the centrally planned countries, the growth of production and consumption of wheat in Mainland China was generally in keeping with the projected rates of increase but growth in both the U. S. S. R. and Eastern Europe during the first third of the period covered by the projections surpassed the 1975 projected target.

Coarse Grains

The FAO projections for coarse grains to 1975 for the three economic groups -- developed, developing and centrally planned importing countries -- are presented in Table III-4. For importing countries on a world basis, consumption of coarse grains in the base period 1961/1963 averaged 326 million metric tons, while production averaged 305 million metric tons. The net imports of coarse grains were about 21 million tons. For these importing countries, the FAO projections for 1975 indicate an increase in consumption of coarse grains over that of the base period 1961/1963 of 37 per cent to 450 million metric tons in the event of low economic growth and an increase of 42 per cent to 463 million tons with a high growth rate. Projections for domestic production

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of coarse grains forecast slightly lower rates of increase in the aggregate production of coarse grains in those countries to 411 million and 435 million metric tons, respectively, with low or high rates of economic growth.

As for wheat, developments with respect to the consumption and production of coarse grains vary widely between economic groups of countries, between regions and between individual countries. In the developed group of importing countries, consumption of coarse grains totalled 90 million metric tons on the average for the three years 1961/1963, while production amounted to 70 million tons. The net imports for this period averaged 20 million tons. The FAO 1975 projection indicates that in the developed group of countries, consumption will increase by 40 per cent to 126 million tons on the low growth assumption and by 46 per cent to 132 million tons with a high growth rate. The comparable projections for production indicate increases of 36 to 38 per cent to 95 and 97 million metric tons, respectively, with low and high economic growth rates. These projections would suggest a higher aggregate trade gap by 1975.

The OECD 1975 projections for the developed countries indicate a somewhat smaller rate of increase in consumption of coarse grains and a more rapid increase in production (Table III-5). As a consequence, most of the increased requirements for coarse grains would be provided by greater domestic production and import needs would remain at about 20 million tons. Japan is the notable exception to the tendency towards an increasing proportion of coarse grain requirements being provided from domestic production indicated in the OECD projection.

The FAO projections for the developing group of countries forecast an overall increase in consumption of coarse grains by 1975 of 44 per cent and 50 per cent, respectively, with low and high economic growth rates. Production of coarse grains was projected to increase 36 and 50 per cent, respectively, according to rates of growth. For the base period 1961/1963, total consumption of coarse grains was approximately equal to production. The FAO projection based on low economic growth suggests a net deficit in production in relation to consumption of about 8.5 million metric tons by 1975. This deficit would occur in Africa and the Far East. With a high rate of growth, the projection indicates that total production and consumption would be approximately in balance in all areas.

Table III-4

FAO PRODUCTION AND CONSUMPTION OF COARSE GRAINS
IN IMPORTING COUNTRIES
AVERAGE FOR BASE PERIOD 1961/1963, AND PROJECTION FOR 1975
(Million metric tons)

	Average 1961/1963		1975			
	Production	Consumption	Production	Consumption	Low GDP	High GDP
<u>Developed countries</u>						
United Kingdom	7.7	12.1	13.6	16.3	13.6	16.9
EEC	29.3	38.8	41.2	52.9	41.2	55.4
Other North Europe	12.6	14.8	15.7	19.0	15.6	19.6
South Europe	18.1	19.8	23.0	27.1	25.0	22.5
Japan	1.8	4.6	1.3	10.5	1.3	11.3
Total	69.5	90.1	94.8	125.8	96.7	125.7
<u>Developing countries</u>						
Latin America	21.2	21.8	34.0	34.0	35.8	34.5
Africa	27.7	27.5	37.4	41.2	42.9	42.5
Near East	8.3	8.1	10.4	10.4	11.3	12.2
Far East	31.2	31.5	38.0	42.7	44.1	44.3
Total	88.4	88.9	119.8	128.3	134.1	133.5
<u>Centrally planned countries</u>						
U.S.S.R.	48.3	45.7	67.5	66.4	72.0	69.5
Eastern Europe	33.9	35.6	42.7	42.1	41.1	42.8
Mainland China	65.3	66.0	86.1	87.1	90.8	91.8
Total	147.5	147.3	196.3	195.6	203.9	204.1
TOTAL	305.4	326.3	410.9	449.7	434.7	463.3

Source: Agricultural Commodities - Projections for 1975 and 1985, op. cit.

Consumption and Production -- 1975

For the centrally planned group of countries, total consumption and demand are shown to be in approximate balance for 1961/1963. The 1975 projection indicates a 30 per cent increase in consumption and production under low rates of growth and a 40 per cent increase if growth is more rapid. Since these countries are large producers and the projected percentage increases are equal for both consumption and production, there is no basis for anticipating the development of trade in coarse grains with this group of countries.

CHAPTER IV

PROJECTED TRADE IN WHEAT AND COARSE GRAINS

Part of the basic assumptions in the FAO study of Agricultural Projections in constructing their economic model designed to analyse long-term trends in demand, supply and international trade is that national agricultural and commercial policies, technological factors and price relationships remain unchanged.^{1/} Reference has already been made to the validity of such assumptions, particularly in relation to supply projections. The development of national agricultural and commercial policies, which are designed to encourage domestic production by restricting imports or by providing a competitive advantage in international trade by means of export subsidies or concessional payment arrangements, for instance, may have a direct impact on both current and future trade. Technological developments and changes in price relationships may similarly change established trends in consumption, production and trade, and in the relative competitive position of different suppliers.

This short review of current policies and developments related to grains for selected wheat and coarse grain importing countries in the developed, developing and centrally planned groupings is presented as a basis for the rationalization of the implications of such developments on future production and trade.

Developed Countries

Policies relating to price supports, import controls or export subsidies and technological developments affecting production can be particularly significant in the developed countries, both individually and as a group, in their effects on production and on imports of grains.

^{1/}Agricultural Commodities -- Projections for 1975 and 1985, op. cit., p. 5.

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United Kingdom

Grains are the most important tillage crop in the United Kingdom in terms both of acreage and value of output. As a result of government agricultural policies, grain production has expanded rapidly in recent years due to increases in acreage and yield per acre, and has provided for a large increase in the output of the livestock sector, while at the same time avoiding an increase in imports of livestock feeds.

Following 1953, with the freeing of trade in wheat, the method of implementing guaranteed prices to U.K. cereal producers was changed to an open-ended deficiency payments system. Deficiency payments were made to farmers on an unlimited quantity of millable wheat marketed, at a rate equal to the difference between the guaranteed price, adjusted according to the seasonal scale, and the average market price.

For wheat and rye, which are grown primarily for sale, payments were based on tonnage sold; for barley and oats, which are produced for feeding, payments were on the basis of acreage grown. Differentials to encourage wheat production as compared with barley were gradually reduced and made to favour feed grains. Reduced wheat guarantees together with higher guarantees for barley, new barley varieties and new techniques of production resulted in a marked expansion of barley production. Between 1955 and 1960, the subsidy on barley increased from £10.4 million to £33.6 while the wheat subsidy remained at between £18 and £20 million. The increased domestic production of barley caused prices of grains to fall to unusually low levels, with the result that by 1963 the total cost to the Treasury of support for cereals amounted to about £80 million.

With the object of limiting the government liability for such subsidy payments and to obtain greater stability in the domestic wheat market, the U.K. government introduced a system of minimum prices for imported cereals combined with the "standard quantity" concept for domestic production. In order to implement

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the proposed minimum import price scheme, the U.K. government entered into bilateral agreements with the principal cereal supplying countries.^{2/}

The measures, which were designed to bring about adjustments in domestic production as well as to restrain financial assistance, had two main features -- standard quantities and target indicator prices. The standard quantities were intended to reflect the levels of production of wheat and barley, which were considered to be in the national interest and consistent with the objective of a fair and reasonable balance between domestic production and imports. Target indicator prices were the minimum average market prices which home-grown wheat and barley should realize if standard quantities were not exceeded, and they were related to the minimum import prices for these grains. Production in excess of the standard quantity would not qualify for guaranteed prices, and this in effect would mean an automatic reduction of the guarantee per unit over the whole of production. The amount of the deficiency payment depended on the relationship between the average market price and the target indicator price. If production were in excess of the standard quantity and the average market price were less than the target indicator price, the latter would be used in the calculation of the deficiency payment which would be reduced accordingly. In the converse situation, if production were less than the standard quantity and at the same time the average market price were above the target indicator price, producers would receive a slightly higher deficiency payment. Between 1964 and 1968, the guaranteed prices and the standard quantity for wheat and barley were adjusted periodically, until in the 1968 Annual Price Review the standard quantity for wheat was abolished while that for barley was raised to 8.6 million tons.

To complement the arrangements for domestic production, provision was made for a system of minimum import prices for the different types of wheat and coarse grains. Following adjustment for devaluation on August 1, 1968, these prices ranged from

^{2/} Co-operating countries in the U.K. system of minimum Import Prices and Levies included Canada, Australia, Argentina, U.S.A., South Africa, Cyprus, Ireland, France, Sweden, India, Tanzania, Kenya, Malawi, Zambia, the Netherlands, Syria, Finland, Denmark, Belgium, Luxembourg, Iraq and Rumania.

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£22/19/0 per long ton (per metric ton) for denatured wheat to £30/0/0 for Canadian Manitoba No. I. Minimum prices for barley and oats are £21/19/0.^{3/}

Minimum import prices were enforced by levies of two types. In the case of countries which signed agreements to co-operate on the observance of the minimum import prices, a "country" levy might be imposed which would be based on the difference between the appropriate minimum import prices and the price (including duty) at which supplies were made available for import into the United Kingdom from that particular country. In the case of imports from countries which had not signed agreements to co-operate, a general levy would, as necessary, be imposed, based on the difference between the appropriate minimum import price and the lowest price (including duty) at which supplies are available for import into the United Kingdom from any non-co-operating overseas source.

The U.K. government also established a new organization, the Home Grown Cereals Authority, comprising farming, trading and independent members with the objective of improving the marketing of home-grown cereals. Its aim was to improve market information, encourage research on technical problems and to ensure a more even flow of home-grown grain to the market over the season. To assist in achieving this objective, it provided financial incentives to forward contracting. Power to undertake limited support buying in certain specified circumstances was held in reserve, to be used with the authority of Parliament if the organization's purposes could not otherwise be adequately achieved. Funds for the financial incentives and any trading operations were to be provided from a levy on cereal growers.

Production and Utilization of Wheat and Coarse Grains -- Partly as a result of these domestic policies, coupled with improved technology, the production of wheat in the United Kingdom increased from an average of 2.8 million metric tons for the five years 1955/1959 to 3.9 million tons in 1967 (Table IV-1).

^{3/} Basil E. Cracknell, Addendum to Cereals in the United Kingdom, Watmoughs Limited, Idle, Bradford; and London.

Table IV-1

SUPPLY AND UTILIZATION OF WHEAT IN THE UNITED KINGDOM
AVERAGE 1955/1959; ANNUAL 1960 TO 1968

Average	Production	Imports	Exports (Thousand metric tons)	Stock Changes (Thousand metric tons)	Domestic Consumption			Degree of Self- Sufficiency (Per cent)	
					Total	Food	Feed		
1955/1959	2,768	5,030	25	- 20	7,793	5,808	1,815	164	36
1960	3,040	4,705	23	+ 74	7,648	5,808	1,682	152	40
1961	2,614	4,684	13	+ 19	7,266	5,603	1,480	178	36
1962	3,974	4,255	149	+ 8	8,072	5,583	2,332	152	49
1963	3,046	4,608	20	+ 11	7,623	5,560	1,886	173	40
1964	3,793	3,828	3	- 93	7,711	5,092	2,417	197	49
1965	4,171	4,376	4	+139	8,404	5,285	2,938	176	50
1966	3,475	4,152	5	-127	7,749	5,370	2,190	184	45
1967	3,903	4,067	5	+132	7,833	5,201	2,437	190	50
1968	3,571	4,576	n.a.						

Source: Commonwealth Secretariat, Grain Crops, London.

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In 1968, production decreased to 3.5 million tons. During this period, imports of wheat decreased from 5.0 million metric tons to 4.0 million in 1967, but increased to 4.5 million tons in 1968. This means that during this period, the proportion of the United Kingdom's aggregate wheat requirements produced domestically increased from 36 to 50 per cent.

Flour milling in the United Kingdom is a relatively static industry in terms of total production. Bread consumption per head is slowly declining but this is to some extent offset by an increase in the consumption of cake and biscuits.^{4/} Although some 80 per cent of the wheat used in bread flour is imported, the overall dependence of the flour industry on imported wheat is about 66 per cent.^{5/} The biscuit trade represents a growth market for home-grown wheat but it is only 10 per cent of the total consumption of wheat flour and flour products in the United Kingdom.^{6/} The use of home-grown wheat for milling flour for the cake and biscuit industry has increased by an average of about 40 thousand tons per annum over the last five years and this trend is likely to continue.

Flour for bread-making must attain certain characteristics of "strength" if it is to produce an acceptable loaf. Weaker flours result in bread of poor conformation and keeping quality. As they cannot absorb as much water, the output of bread per hundred-weight of flour is reduced. Strength in flour is related to the protein level and protein quality of the wheat. The protein levels of English wheats range from 8 to 11 per cent and must be supplemented by stronger imported wheats in the grist. Some of these imported wheats may be better quality soft wheats used as "filler", but the real increase in strength is contributed by the "quality" hard wheats having a high protein content.

^{4/} Denis K. Britton, Cereals in the United Kingdom, Pergamon Press, 1969, p. 636.

^{5/} Ibid., p. 467.

^{6/} Ibid., p. 685.

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The technical requirements for wheat for milling bread flour have, therefore, limited the use of home-grown wheat for this purpose to about 20 per cent. The proportion of home-grown wheat used in the grist varies considerably from year to year, however, according to the quality of the crop, which is largely dependent on the weather, particularly during harvesting. While some superior medium-quality wheats have been developed in the United Kingdom, the lack of a system of grading and the reluctance of the milling industry generally to provide adequate price differentials for quality has not encouraged farmers to concentrate on quality, especially if this would mean a reduction in yield.^{7/}

The changing techniques of bread-making have made possible a larger proportion of home-grown wheat in the production of bread flour. The Chorleywood process developed by the British Baking Industries Research Association has substituted mechanical working for conventional slow fermentation as a means of making dough.^{8/} About half of the bread baked in Britain is produced using the Chorleywood process and it is anticipated that, in the future, 75 per cent of the bread flour may be made for the Chorleywood method. Bakers employing this process use flour made from a grist containing 30 to 35 per cent soft wheats as compared with 25 per cent soft wheat content for flour in the conventional fermentation process. Thus, if full advantage is taken of the Chorleywood process, the 700 thousand tons of domestic wheat now used in bread-making could be increased by 500 thousand tons to 1.2 million tons.^{9/} This greater quantity of domestic wheat for bread-making should result in a shift from imports of soft "filler" wheats to the hard, higher protein classes of wheat.

In keeping with this development, the undertaking by millers to the government with respect to the use of home-grown wheat was raised from 1.25 million tons in 1960 to 1.50 million tons in 1968.

^{7/} *Ibid.*, pp. 465-466.

^{8/} *Ibid.*, p. 457.

^{9/} *Ibid.*, p. 458.

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With limits to the use of home-grown wheat for milling dictated by quality considerations, a very important use is in the feed compounding industry, which is taking an increasing proportion of the crop. In 1967, over 60 per cent of the home-grown wheat was used for feed.

The production of coarse grains in the United Kingdom increased from an average of 5.6 million metric tons for the five years 1955/1959 to 10.8 million tons in 1967 (Table IV-2). This increased production has been due largely to an expansion of the barley crop which in 1967 was nearly three times as large as the average for the period 1955/1959 (Table IV-3). The increase of 3.3 million acres in barley was drawn from permanent grassland, oats and mixed grains. During this period, the acreage of wheat remained relatively constant but production increased by about 40 per cent due to higher yields and imports decreased from 5 to 4 million tons. Imports of barley and oats decreased from 1.3 to 0.2 million tons but corn and sorghums imports increased from 2.4 to 3.9 million tons (Table IV-4). In total, therefore, utilization of coarse grains increased from 8.8 to 13.7 million tons. Of this amount, imports went up from 3.4 to 4.0 million tons.

The use of coarse grains for livestock feeding increased from an average of 6.7 million tons for the period 1956/1958 to 10.5 million tons in 1967. Taking both wheat and coarse grains into account, the utilization of grains for livestock feeding in the United Kingdom increased from an average of nearly 8 million tons for the five-year period 1955/1959 to about 13 million tons in 1967. In 1968, production of barley in the United Kingdom declined 800 thousand tons to 8.3 million tons; imports increased to about 350 thousand tons. Barley exports fell off to 74 thousand tons as compared with 785 thousand tons in 1967, and 1,093 thousand in 1966.

Future Imports of Grains -- The FAO projection for wheat utilization for 1975 forecasts an increase of 300 thousand tons over the 1961/1963 period (Table III-1), as compared with an increase of 1.1 million tons indicated by the OECD projection (Table III-2). This increase is attributed entirely to greater use of wheat for feed.

Table IV-2

SUPPLY AND UTILIZATION OF COARSE GRAINS (1) IN THE UNITED KINGDOM
 AVERAGE 1955/1959; ANNUAL 1960 TO 1967

Average 1955/1959	Production	Imports	Exports	Stock Changes (Thousand metric tons)	Total Feed (Thousand metric tons)	Utilization			Degree of self- Sufficiency (Per cent)	
						Human Needs	Seed	Industrial Use		
	5,606	3,422	178	+ 24	8,825	6,735	1,488	352	250	64
1960	6,418	4,138	130	- 19	10,445	7,965	1,679	410	390	61
1961	6,923	5,597	346	+ 62	11,112	8,585	1,763	401	363	62
1962	7,658	4,271	203	- 45	11,771	9,167	1,785	430	389	65
1963	8,188	4,066	80	+ 41	12,133	9,326	1,917	438	452	67
1964	8,894	3,496	112	- 65	12,343	9,385	1,645	449	865	72
1965	9,445	3,786	679	+ 46	12,506	9,399	1,663	489	955	76
1966	10,070	4,115	1,108	+580	12,497	9,733	1,462	659	643	80
1967	10,766	4,054	868	+261	13,691	10,516	1,331	707	1,137	79

(1) Barley, oats, rye and corn.

Source: Grain Crops, op. cit.

Table IV-3

SUPPLY AND UTILIZATION OF BARLEY IN THE UNITED KINGDOM
AVERAGE 1955/1959; ANNUAL 1960 TO 1968

Average 1955/1959	Area (Thousand acres)	Yield (Cwt/acre)	Production	Imports	Exports	Total (Thousand long tons)	Domestic Use		
							Malting, Milling and Distilling	Feed and Waste	Seed
	2,611	24.3	3,176	987	150	3,998	1,018	2,794	186
1960	3,372	25.2	4,241	950	122	5,031	1,107	3,673	251
1961	3,828	26.0	4,974	531	336	5,216	1,173	3,783	261
1962	3,987	29.0	5,773	292	182	5,827	1,154	4,358	306
1963	4,713	28.0	6,599	419	75	7,018	1,218	5,470	330
1964	5,032	29.4	7,404	274	109	7,468	1,342	5,775	351
1965	5,395	29.9	8,062	192	669	7,501	1,342	5,759	400
1966	6,130	28.0	8,586	188	1,093	7,750	1,404	5,953	393
1967	6,027	30.2	9,069	107	783	8,219	1,352	6,477	390
1968(1)	5,945	27.8	8,275	350	74	8,551	n.a.	n.a.	n.a.

(1) Provisional.

Source: Grain Crops, op. cit.; Commonwealth Secretariat, Grain Bulletin, London.

Table IV-4

PRODUCTION AND IMPORTS OF CEREALS IN THE UNITED KINGDOM
 AVERAGE 1956/1958, 1961/1963, 1964/1966; ANNUAL 1967 AND ESTIMATED 1972
 (Million long tons)

	Wheat	Barley	Oats	Corn	Sorghums	Other	Total
<u>Average 1956/1958</u>							
Domestic production	2.7	3.0	2.3	--	--	0.4	8.4
Imports	5.0(1)	1.2	0.1	2.1	0.3	--	8.7
Total	7.7	4.2	2.4	2.1	0.3	0.4	17.1
<u>Average 1961/1963</u>							
Domestic production	3.2	5.8	1.7	--	--	0.2	10.9
Imports	4.4(1)	0.4	--	3.7	0.4	--	8.9
Total	7.6	6.2	1.7	3.7	0.4	0.2	19.8
<u>Average 1964/1966</u>							
Domestic production	3.8	8.0	1.2	--	--	0.1	13.1
Imports	4.3(1)	0.2	--	3.3	0.5	--	8.3
Total	8.1	8.2	1.2	3.3	0.5	0.1	21.4
<u>1967</u>							
Domestic production	3.8	9.2	1.3	--	--	0.1	14.4
Imports	4.0(1)	0.2	--	3.6	0.3	--	8.1
Total	7.8	9.4	1.3	3.6	0.3	0.1	22.5
<u>1972 (estimated)</u>							
Domestic production	5.7	10.4	1.9(2)	--	--	--	18.0
Increase over 1967	1.9(3)	1.2	0.4	--	--	--	3.5
Imports	3.4	0.2	--	3.0	0.2	--	6.8

(1) Includes flour.

(2) Of this additional production, the Committee proposed that 0.5 million tons would be high quality wheat which would replace imported "filler" wheat.

(3) Includes "other grains".

Source: Economic Development Committee for Agriculture, Agriculture's Import Saving Role, London, 1968.

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In this connection, the OECD projection shows a decrease of 0.5 million tons in the food use of wheat but an increase of 1.5 million tons in the use of wheat for feed. Projections for the production of wheat indicated an increase by 1975 of about 2 million tons to 5.2 million tons. Assuming no change in U.K. exports of wheat, this would mean a decrease in imports of wheat of about 1 million tons from the 1961 level to about 3.6 million tons.

These projections are generally substantiated by the conclusions of the Economic Development Committee for Agriculture in its report on "Agriculture's Import Saving Role" (Table IV-5). The group concludes that "the wheat acreage should be expanded by about 1 million acres to 3.3 million acres in 1972/73. On the basis of an average yield of $34\frac{1}{2}$ cwt. an acre, total production of wheat would then be in the region of 5.7 million tons, or nearly 2 million tons more than 1967/68. Of this additional production, 0.5 million tons would replace imported filler wheat; the remainder would replace imports of feed wheat, maize or sorghums as well as to meet part of the additional feed requirements that would arise from the postulated expansion in livestock production."^{10/}

The FAO projection for coarse grains in the United Kingdom shows an increase in consumption by 1975 of about 25 per cent over the average for 1961/1963, amounting to about 4.25 million tons and an increase of about 6 million tons or 80 per cent in production (Table III-4). This projected increase would mean a continuation of the expansion in the domestic production of barley and a further cutback in imports of coarse grains. The OECD projection indicates that by 1975 consumption will increase by less than 10 per cent and that production may almost double (Table III-5). Such a development would result in the United Kingdom being a net exporter of coarse grains.

^{10/} Agriculture's Import Saving Role, op. cit.

Table IV-5

UNITED KINGDOM: ESTIMATED GRAIN SUPPLIES AND UTILIZATION
1972

(Million long tons)

	Food		Feed		Other		Total		
	Home Produced	Imported	Home Produced	Imported	Home Produced	Imported	Home Produced	Imported	
Wheat	2.1	3.0	3.6	--	0.2(1)	--	5.7	3.0	8.7
Coarse grains									
Barley	1.6	0.2	7.6	--	0.6(2)	--	10.2	0.2	10.4
Oats	0.1	--	1.5	--	0.4(1)	--	1.7	--	1.7
Corn	--	0.5	--	1.2	--	0.5(3)	--	2.2	2.2
Sorghums	--	--	--	0.3	--	--	--	0.3	0.3
Other	--	--	0.1	--	--	--	0.1	--	0.1
Total	1.7	0.7	9.2	1.5	1.1	0.5	12.0	2.7	14.7
TOTAL	3.8	3.7	12.8	1.5	1.2	0.5	17.7	5.7	23.4

(1) Seed.

(2) Export.

(3) Industrial use.

Source: Agriculture's Import Saving Role, *op. cit.*

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The report of the Economic Development Committee on Agriculture draws attention to the threefold increase in barley production during the last 10 years and the development of an export market of over one million tons, making the United Kingdom the second largest exporter for 1966. The Committee foresees the continuation of imports of barley of a level of about 200 thousand tons made up largely of Canadian barley with a high diastase content for use in the distilling industry. The group concludes that if wheat production were to expand to the extent suggested above, the barley acreage would show only a moderate increase of about 0.5 million acres by 1972 and production would increase to about 10.2 million tons (Table IV-5). It is assumed that most of this increase would go to satisfy the growth in the demand for livestock feed but some could displace imports of corn and sorghums.

There is thus some difference among the projections as to the extent and rapidity with which the consumption and production of grains in the United Kingdom may expand. It would appear, however, that by 1975 imports of wheat and flour will not exceed 3.4 million metric tons wheat equivalent and that imports of corn, sorghums and millet may be reduced to below 3 million tons.

The European Economic Community

The European Economic Community, generally referred to as the "Common Market", was established by a treaty signed in Rome on March 25, 1957, by France, West Germany, Italy, the Netherlands, Belgium and Luxembourg.

In addition to the removal of internal tariff, quota and similar trade barriers, and the erection of a common tariff against nonmember countries as well as provision for the free movement of labour and business enterprises, the aims of the EEC include the establishment of a common agricultural policy. Of special importance in the present context is Regulation No. 19, "Dealing with the Gradual Formation of a Common Market for Cereals", which became effective on July 30, 1962.

In this connection, the objective is the achievement of certain EEC goals relating to the prices at which grains are sold within the Community, grain export prices, the incomes earned by "domestic" producers of grain, and assurance of a minimum level of grain output and of employment in this branch of production.

Projected Trade in Wheat and Coarse Grains

On July 1, 1967, the separate marketing arrangements for cereals in the six member countries of EEC were merged into a single-market organization and all intra-EEC levies on grain imports from other members were abolished. These steps, which introduced a common price system, Community financing, and a standardized commercial policy for marketing farm products marked the fruition of a common agricultural policy for the EEC. The essentials of the new, unified marketing system include import levies on grain imports from nonmember countries, government purchases at intervention prices, a denaturing premium for wheat, and export subsidies.

(a) Import Levies -- In place of tariffs, grains entering the Community from nonmember countries are subject to an import levy which is uniform for all points of entry. The levy is a variable charge which is adjusted every day to offset differences in supply prices, calculated as the difference between the lowest adjusted c.i.f. price and the "threshold" or fair market wholesale price established by the Commission for EEC-produced grain of the same generic type.

The calculation of the import levy involves the use of a "target price" and a "threshold price" which are established in accordance with agreed procedures in a formula where:

- (i) the levy equals the threshold price minus the lowest adjusted c.i.f. price for a particular type of grain entering the EEC. The lowest c.i.f. price is arrived at by subtracting from daily c.i.f. quotations the fixed quality differentials between the imported grain and the corresponding EEC standard;^{11/}

^{11/} Quality differentials established March 3, 1969, for selected wheats are as follows (in units of account): Manitoba I: 12.50, Manitoba II: 12.00, Manitoba III: 10.50, Manitoba IV: 9.00; U.S. Dark Northern Springs I and II: 12.00, Hard Winters I and II protein 14%+: 12.00; Hard Winters I and II Ordinary: 9.00; Argentina: 9.00; Australia F.A.Q.: 5.75, Australia Prime Hard: 10.50; English Milling: 0; U.S.S.R. SKS 14: 12.50.

Future Markets for Canadian Grains

- (ii) the threshold price is the target price minus the cost of transporting the grain from Rotterdam (the EEC "border port") to Duisburg (the point on the lower Rhine which is normally most deficient in the supply of grains in the EEC), plus the "Montant Forfaitaire" (an arbitrary preference granted to EEC producers); and
- (iii) the target price for a given type of grain, which is set annually by the Council of Ministers, establishes a basic wholesale price of EEC standard grain at Duisburg which will yield Community farmers a "fair" return.

To illustrate, by way of example, the calculation of the variable levy, the following is a list of c.i.f. prices per metric ton at Rotterdam on March 3, 1969, together with the quality coefficient for each class of wheat:

	<u>C.i.f. Price</u>	<u>Quality Coef- ficient</u>	<u>Adjusted C.i.f. Price</u>
No. 2 Manitoba Northern	U.S.\$75.00	U.S.\$12.00	U.S.\$63.00
No. 2 Hard Winter 14%	69.40	12.00	57.40
No. 2 Hard Winter Ordinary	66.75	9.00	57.75
Argentine Plate	67.50	9.00	58.50

The price of No. 2 Hard Winter 14% at \$57.40 becomes the lowest adjusted c.i.f. price for the day.

Threshold price	\$104.38
Lowest adjusted c.i.f. price	<u>57.40</u>
Levy	\$ 46.98

The levy of \$46.98 per metric ton would be applied to all wheats imported from outside countries on that day and the procedure would be repeated each day to determine the levy.

Projected Trade in Wheat and Coarse Grains

(b) Intervention or Support Prices -- The "intervention" price for a particular type of grain is the "support" price at which the appropriate government authority in each of the EEC countries enters the market and buys the particular type of grain in question in order to ensure that the price does not fall below that level which will yield local producers a "fair" return. Intervention prices are calculated for each surplus area from a single basic intervention price, which is centrally determined for the Community as a whole and is, on the average, about 7 per cent below the target price.

Grain purchased by a government agency, unless "denatured" and sold as livestock feed, must be held in stock until such time as the market price rises sufficiently above the intervention price, to enable it to be sold without having a depressing effect on the market.

The basic target price, basic intervention price and initial threshold price of wheat and coarse grains for the crop years 1967 and 1968 are shown in Table IV-6.

Table IV-6
BASIC TARGET PRICE, BASIC INTERVENTION PRICE
AND INITIAL THRESHOLD PRICE OF WHEAT AND COARSE GRAINS
CROP YEARS 1967, 1968 AND 1969

(Units of account (U.S.\$) per metric ton)

	Soft Wheat	Durum Wheat	Rye	Barley	Corn
<u>1967</u>					
Basic target price	106.25	125.00	93.75	91.25	90.63
Basic intervention price	98.75	117.50	87.50	85.00	77.00
Initial threshold price	104.38	123.13	91.88	89.00	88.38
<u>1968</u>					
Basic target price	106.25	123.13 ⁽²⁾	97.50	94.44	94.94
Basic intervention price	98.75	117.50	91.00	87.98	79.31
Initial threshold price ⁽¹⁾	104.38	123.13	95.63	92.19	92.19
<u>1969</u>					
Basic target price	106.25	125.00	97.40	95.44	95.94
Basic intervention price	98.75	117.50	91.00	88.48	
Initial threshold price	104.38	123.13	95.63	93.19	93.69

(1) For the first month of the year.

(2) An unchanged minimum guarantee of 145 U.A./metric ton has been set for durum wheat in 1968 as in 1967.

Source: Review of the World Grains Situation, op. cit.

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(c) Wheat Denaturing Premium -- To encourage wheat to be used for feed, the Community established a denaturing premium which has as its objective a reduction in the price of wheat which has been denatured to a level comparable with that of barley. The premium is set in principle at the beginning of each marketing season and follows the monthly spread of cereal prices. In May 1969, in view of the large stocks of wheat in the Community, the denaturing premium was increased to 19.07 units of account (\$U.S.) per metric ton in order to stimulate the use of denatured wheat for feeding.

(d) Export Subsidies -- EEC regulations provide for the payment of export subsidies in the form of "restitutions" or rebates of import levies to enable higher-priced Community products to be competitive on world markets. The rebates are fixed generally on a weekly basis but may be adjusted at any time to cover the difference between internal prices in the Community and world market prices. Rebates are the same for the whole Community and can be differentiated according to destinations. They apply either to the export of products produced in the Community or the re-export of products imported from nonmember countries. The criteria determining the amount of the refund include cereal prices in the various surplus areas of the Community, the most competitive price quotations on the markets of importing third countries, and the marketing and transport costs. Adjustments are made in the calculation of rebates to take account of readjustment of internal prices and world market prices to the European standard quality on the basis of established quality differentials. For wheat, account is also taken of the minimum price commitments under the International Grains Arrangement.

The financing of the Community's Common Agricultural Policy is carried out through the European Agricultural Guidance and Guarantee Fund (EAGGF). The fund is divided into two sections. The Guarantee Section reimburses member governments directly for the cost of subsidizing farm exports and for the cost of supporting prices of farm products in the domestic market. The Guidance Section finances expenditures for structural reforms in agriculture. It pays subsidies for selected projects which may be designed to improve either the structure of production, e.g. soil improvement, or the structure of marketing, e.g. silo construction.

Projected Trade in Wheat and Coarse Grains

Initially, the expenditures of the EAGGF were relatively modest because the market regulations applied to only a few products and the EAGGF met only a small share of the cost of supporting internal farm prices and subsidizing exports, the main burden for which was carried by the governments of the member countries. The expenditure by the EAGGF for export rebates on all commodities increased from U.S.\$22 million for 1962 to an estimated U.S.\$750 to \$850 million for 1967 (Table IV-7). During the same period, expenditures and price support increased from U.S.\$7 million to an estimated U.S.\$550 million to \$650 million. Until mid-1967, expenditures of the Guidance Section were limited to a maximum equal to one-third of the expenditure of the Guarantee Section, but for the period July 1967 to December 1969, expenditures up to \$285 million by the Guidance Section have been authorized.

Table IV-7

ALLOCATION OF FUNDS BY EUROPEAN AGRICULTURAL GUIDANCE AND GUARANTEE FUND
(U.S.\$ Million)

	Guarantee Section						Guidance Section	Special Cash Compensation
	Export Rebates		Price Support		Total			
	Grains	All	Grains	All	Grains	All		
1962	22	22	7	7	29	29	9	
1963	40	42	9	9	49	51	17	
1964	80	132	18	35	98	167	54	
1965	104	192	16	44	120	236	80	
1966		225		142		367	123	
1967(1)		750-		550-		1,300-	285	206(2)
		850		650		1,500		
1968(1)					358	1,355	285	139(2)

(1) Estimated.

(2) Cash compensation paid to Germany, Italy and Luxembourg to compensate farmers adversely affected by common cereal prices introduced July 1, 1967.

Source: G. F. Mintenko, "Financing the Common Agricultural Policy", Foreign Trade, July 6, 1968; J. van Ypersele, The Financing of the Common Market's Agricultural Policy, International Monetary Fund, 1967.

Future Markets for Canadian Grains

Beginning with July 1967, the EAGGF received 90 per cent of the proceeds of levies on imports of agricultural products which were expected to amount to about U.S.\$600 million and to cover one-half of the expenditures under the Guarantee Section. The remainder of the funds required by the EAGGF is contributed by member countries according to a fixed scale.^{12/}

Export rebates on grains increased from \$22 million in 1962 to \$104 million in 1965. Total expenditures by the Guarantee Section (export rebates plus price supports) on grains are estimated at \$358 million for 1968 out of a total of \$1,355 million for all products. Because of its substantial grain exports, France has been by far the largest beneficiary of the Fund's operations, although her share of the Guarantee Fund disbursements has decreased to about one-half of what it was originally, as a result of additional products coming within the EAGGF's activities.

Impact of the CAP on the Trade in Wheat and Coarse Grains -- Taking into account the many highly charged national political issues involved, the development of a common agricultural policy for the six countries making up the European Economic Community over a period of 10 years was a remarkable achievement. It is a development that has been observed with great interest and concern by countries which are exporters of agricultural products. With 10-year statistics now available covering the period of evolution of the CAP, it is now possible to make an assessment of its impact on the grain trade of other exporting countries.

For the year April 1, 1968 to March 31, 1969, the levy on wheat for bread-making averaged U.S.\$52.83 per metric ton, the range being from \$46.83 to \$59.23 per ton. Subject to the payment of the import levy, wheat from nonmember countries can be imported freely by the trade in the Community. Imports of wheat, excluding intra-EEC trade, amounted to 4.1 million tons in 1967 and 4.4 million in 1968, as compared with 4.6 million tons for the

^{12/} France 32.0 per cent, Germany 31.2 per cent, Italy 20.3 per cent, Belgium 8.1 per cent, the Netherlands 8.2 per cent, Luxembourg 0.2 per cent.

Projected Trade in Wheat and Coarse Grains

five years 1955/1959 (Table IV-8). Wheat imports from both member and nonmember countries into France, which are largely durumms, have varied from year to year but have not shown any appreciable increase. Italian imports have shown considerable growth, from both member and nonmember sources, particularly during more recent years. Germany, which has been by far the largest wheat importer among the Six, decreased her imports of wheat by about 1.5 million tons during the period. This, together with an increase in production and in exports, resulted in Germany increasing her percentage self-sufficiency. Imports into the Benelux countries were maintained generally with some increase in the last three years. It would seem, therefore, with the possible exception of Germany, that the import levy or other CAP policies have not seriously limited imports of wheat into the Community.

Support prices for wheat in the EEC have been established at the equivalent of \$3.13 per bushel for soft wheat ranking in value at the bottom of the scale of price differentials as compared with \$1.70 per bushel for Canada's No. 1 Manitoba Northern, traditionally the world's premium wheat. These high levels of guaranteed prices to producers, which are implemented indirectly by the import levy, have resulted in production of wheat in the EEC countries amounting to 32.2 million metric tons in 1968 as compared with an average of 23.6 million tons for the five years 1955/1959.

Within the EEC, nearly one-half of the wheat is produced in France and one-third in Italy. Germany accounts for about 15 per cent of production while the Benelux countries make up about 5 per cent. Production has varied widely from year to year in all six countries. Little change in production has occurred in Italy while in France and Germany production has increased about 35 per cent over the average for the 1955/1959 period. A 20 per cent increase has occurred in Belgium/Luxembourg and the Netherlands production has practically doubled.

Table IV-8

SUPPLY AND UTILIZATION OF WHEAT IN THE EEC
AVERAGE 1955/1959; ANNUAL 1960 TO 1968

Average 1955/1959	Production	Imports		Exports		Stock Changes (Thousand metric tons)	Domestic Consumption ⁽¹⁾			Degree of Self- Sufficiency (Per cent)	
		Total	Excluding Intra-EEC	Total	Excluding Intra-EEC		Total	Food	Feed		Seed
	23,569	5,236	(4,608)	2,834	(2,239)	+ 201	25,769	19,959	3,840	1,970	91
1960	24,200	6,601	(5,888)	2,629	(1,799)	+ 980	27,192	20,421	4,949	1,822	89
1961	23,221	6,756	(5,868)	3,319	(2,323)	- 80	26,738	20,348	4,492	1,898	87
1962	29,632	3,808	(3,478)	4,152	(3,786)	+1,814	27,474	20,331	5,138	2,005	108
1963	24,589	4,699	(4,111)	4,504	(3,776)	-2,021	26,805	20,211	4,718	1,876	92
1964	29,158	4,099	(3,548)	6,220	(5,669)	- 554	27,591	20,114	5,573	1,904	106
1965	30,485	4,746	(4,245)	6,412	(5,838)	+1,167	27,652	20,463	5,392	1,797	110
1966	26,526	4,413	(4,280)	4,878	(4,479)	-1,255	27,316	19,859	5,627	1,830	97
1967	31,397	4,815	(4,135)	5,518	(5,160)	+2,200	28,494	n.a.	n.a.	n.a.	110
1968	32,205	n.a.	(4,447)	n.a.	(4,681)	n.a.	29,871	n.a.	n.a.	n.a.	108

(1) Food, feed and seed estimated on basis of data from various sources.

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Projected Trade in Wheat and Coarse Grains

Since human consumption of wheat in the EEC has remained more or less static, the fact that imports of wheat have decreased only moderately indicates that the increased supplies of domestic wheat have replaced imported foreign wheat in the production of flour in the EEC to only a limited extent. However, aided by government export rebates, exports of wheat to countries outside the EEC have increased from an average of 2.2 million tons during the period 1955/1959 to 5.2 million tons for the period 1965/1967 (Table IV-8). The greater part of these increased exports of wheat have been from France.

Coarse grain production in the EEC countries also increased following the establishment of the Community (Table IV-9). Aggregate production of coarse grains in the six countries which averaged 17.9 million metric tons for the period 1952/1955, reached a high point of over 31 million tons in 1967. In 1967, the area of land in coarse grains was about 10 million hectares as compared with an average of 8.4 million for the period 1952/1955.

Table IV-9

AREA AND PRODUCTION OF BARLEY, OATS AND CORN IN EEC
AVERAGE 1948/1951, 1952/1955, 1962/1965; ANNUAL 1966 TO 1968

	Average					
	1948/1951	1952/1955	1962/1965	1966	1967	1968
	(Thousand hectares)					
<u>Area</u>						
Barley	1,938	2,611	4,060	4,400	4,500	4,550
Oats	4,293	4,007	2,560	2,430	2,390	2,260
Corn	<u>1,603</u>	<u>1,739</u>	<u>2,000</u>	<u>1,980</u>	<u>2,070</u>	<u>2,050</u>
Total	7,834	8,357	8,620	8,810	8,960	8,860
	(Thousand metric tons)					
<u>Production</u>						
Barley	3,648	5,978	11,880	12,480	15,870	15,530
Oats	7,347	7,852	6,170	6,080	6,830	6,460
Corn	<u>2,807</u>	<u>4,123</u>	<u>6,760</u>	<u>7,980</u>	<u>8,170</u>	<u>9,450</u>
Total	13,802	17,953	24,810	26,540	30,870	31,440

Source: Production Yearbook, *op. cit.*; Review of the World Grains Situation, *op. cit.*

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Changes in the production pattern occurred for each type of coarse grain. Oat production, which accounted for well over half of the coarse grains in the EEC countries in the immediate postwar period, has declined substantially and has been replaced by both barley and corn. Barley production which is currently more than four times that of the immediate postwar period and has more than doubled since the Community came into being, accounts for about 54 per cent of the coarse grains. While the area in corn has increased only moderately, production has nearly doubled during the same period. Millet and sorghums are also increasing rapidly although the total production is still small.

Imports of coarse grains from outside the Community tripled between 1956/1960 and 1965 and dropped back from a high of 16 million tons in 1965 to 11 million in 1968. At the same time, subsidized exports, which averaged 800 thousand tons for the period 1956/1960, increased more or less regularly, reaching 4.5 million tons in 1968 (Table IV-10).

The principal impact of the Common Agricultural Policy, therefore, has been in third country markets to which these increased domestic supplies are exported with the assistance of export rebates or subsidies which are reset periodically at whatever level is required to make EEC wheat or barley competitive. Generally, the rates of "restitution" which are published weekly in the *Journal Officiel des Communautés Européennes* apply to geographic zones but individual countries within a zone may be listed separately when it is felt necessary to have a higher rebate in order to improve the competitive position of EEC grain.

According to available projections, both consumption and production of wheat in the EEC will continue to expand. The FAO projections for the consumption of wheat forecast an increase from 27.0 million tons for 1961/1963 to 32 million tons in 1975. Domestic production of wheat, which averaged 26 million tons during 1961/1963, is projected at 35 million tons in 1975. These projections are generally supported by those of the OECD and the trends are confirmed by the performance to date. EEC imports of wheat will likely continue to contract slowly.

Table IV-10

EEC COARSE GRAINS PRODUCTION AND SUPPLY DISTRIBUTION
 AVERAGE 1956/1960; ANNUAL 1961 TO 1968
 (Thousand metric tons)

	Initial Stocks	Production	Imports	Exports	Intra-EEC Trade	Domestic Consumption Feed	Total
Average 1956/1960	2,738	21,722	5,479	800	1,644	22,516	27,103
1961	3,979	23,016	10,494	1,424	1,549	27,129	32,390
1962	3,677	24,292	10,817	1,672	1,081	27,703	33,068
1963	4,044	28,042	12,007	3,243	1,647	30,944	36,392
1964	4,431	25,605	12,755	3,546	2,268	30,551	36,000
1965	3,245	26,117	16,016	3,716	2,780	31,706	37,927
1966	3,735	28,200	15,533	3,678	2,618	33,699	40,047
1967	3,050	24,240	13,308	4,170	2,207	26,157	32,346
1968	--	25,158	11,436	4,518	2,404	25,600	32,350

Source: Grain Development in the Common Market, *op. cit.*

Future Markets for Canadian Grains

The actual utilization of wheat in the EEC countries since the 1961/1963 period indicates no real increase in human consumption but an expansion in the use of wheat for livestock feeding. During the three years 1965 to 1967, the use of wheat for feed averaged 5.6 million tons as compared with 3.8 million tons for the five years 1955/1959, an increase of 1.8 million tons. The increase in the use of wheat for livestock feeding has occurred particularly in France and Germany. It is doubtful, however, that by 1975 consumption of wheat in the EEC will exceed 30 million tons. Similarly, it would seem that the current rate of increase in production of wheat, if continued to 1975, would fall considerably short of the projection. On the basis of these guidelines and assuming a more rapid increase in use of wheat for feed, it is suggested that EEC imports and exports of wheat in 1975 may each be about five million tons (excluding intra-EEC trade).

Total domestic consumption of coarse grains in the EEC has increased from an average of 27 million tons for the 1956/1960 period to an average of 35 million tons for the 1965/1968 period. The use of coarse grains for livestock feeding increased from 22 million tons to 29 million tons during the same period. Taking both wheat and coarse grains together, the use of domestic grains for livestock feeding has increased by about 1 million tons per year, accounting for a total of 35 million tons in 1968.

Using the OECD projections for coarse grains consumption and production in the EEC countries in 1975, it is noted that consumption is anticipated to increase from the average of 34 million tons for the 1961/1963 base period to 45 million tons in 1975. Production of coarse grains in the EEC countries in 1975 is projected to 36 million tons as compared with an average of 25 million tons during the 1961/1963 period. The actual consumption and production of coarse grains in the EEC since 1961/1963 have varied from year to year so that it is not possible to measure the trend. It would seem, however, that while some levelling in the rate of increase in both consumption and production of coarse grains in the EEC has occurred to date, the OECD projection may still be accepted as realistic. The difference between the projected consumption and production of coarse grains may be taken as an indication of the EEC trade gap in coarse grains in 1975.

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The 1966 trade gap which amounted to 9 million tons was made up by imports of about 13 million tons and exports of 4 million tons. It is suggested that by 1975 the high cost of subsidizing exports of grain may tend to encourage the consumption in the EEC countries of a greater proportion of the domestically produced coarse grains, as a result of which EEC exports may decline to 2 million tons and imports remain at about the 11 million ton level.

Other European Countries

Most other European countries have some form of board or agency which either actually purchases import requirements of wheat or controls the issuance of permits for the imports of wheat as a means of restricting imports. The Danish Government, for example, protects domestic wheat producers by obliging mills to mill only Danish wheat for human consumption in Denmark and by prohibiting the use of imported flour for human consumption. About two-thirds of the wheat currently imported into Denmark is feed wheat. The remainder and the little wheat flour imported is used for products manufactured for export. With the possible exception of Norway, Portugal and Switzerland, increased domestic production of wheat has been encouraged by governments with the result that imports of wheat into Western Europe, other than the United Kingdom and the EEC, declined from an average of 3.5 million metric tons for the five years 1954/1958 to 1.6 million tons in 1967 (Table A-1).

On the basis of the OECD projections for 1975, both wheat production and requirements in the countries of Northwest Europe will increase slightly (Table IV-11). Increased quantities of wheat are expected to be used for livestock feeding with the result that imports of wheat will be maintained at about 1.0 million tons. In South Europe, production of wheat is expected to increase by about 26 per cent over that of the 1961/1963 base period as compared with an increase of 12 per cent in consumption. In this event, imports into countries in South Europe may amount to 500 thousand tons.

Future Markets for Canadian Grains

Table IV-11

WHEAT⁽¹⁾ PROJECTED PRODUCTION AND CONSUMPTION IN 1975
FOR COUNTRIES IN NORTHWEST EUROPE AND SOUTH EUROPE
AS COMPARED WITH BASE PERIOD 1961/1963
(Thousand metric tons)

	Average 1961/1963			1975		
	Production	Imports	Exports	Consumption	Production	Consumption
<u>Northwest Europe</u>						
Austria	1,136	56	33	1,155	1,544	1,544
Denmark	973	35	99	902	522	611
Finland	543	238	91	717	643	654
Ireland	404	213	81	576	460	634
Norway	25	376	--	399	13	455
Sweden	924	263	253	952	949	888
Switzerland	406	407	8	807	467	882
Total	4,411	1,588	565	5,508	4,598	5,668
<u>South Europe</u>						
Greece	1,606	71	--	1,731	1,611	1,451
Portugal	725	221	7	919	780	853
Spain	4,779	605	5	5,041	5,480	5,480
Turkey	7,263	747	--	7,805	10,195	9,831
Yugoslavia	3,817	1,032	--	4,679	4,968	4,968
Total	18,190	2,676	12	20,175	23,034	22,583

(1) Includes rye and others.

Source: Agricultural Projections for 1975 and 1985, op. cit., pp. 18-19.

There is no reason to expect any real change in the restrictive policies of these countries in the near future. A comparison of OECD projections for 1975 covering the production and consumption of coarse grains in the countries of Northwest Europe and South Europe with coarse grain production and consumption in the base period shows that, taking each region in total, production of coarse grains is expected to increase considerably faster than consumption (Table IV-12). However, in Ireland, Norway and Switzerland in Northwest Europe, consumption is expected to continue to expand faster than production and imports may amount to 2 million tons. In Portugal and Turkey in South Europe, there may also be continuing imports of about 500 thousand tons.

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Table IV-12

COARSE GRAINS PROJECTED PRODUCTION AND CONSUMPTION IN 1975
FOR COUNTRIES IN NORTHWEST EUROPE AND SOUTH EUROPE
AS COMPARED WITH BASE PERIOD 1961/1963

(Thousand metric tons)

	Average 1961/1963			1975	
	Production	Imports	Exports	Production	Consumption
<u>Northwest Europe</u>					
Austria	1,135	534	12	1,661	2,093
Denmark	4,522	902	164	5,253	6,071
Finland	1,218	50	10	1,298	1,663
Ireland	951	147	28	1,024	1,336
Norway	543	130	16	659	1,164
Sweden	2,789	85	167	2,698	2,581
Switzerland	172	600	--	771	1,184
Total	11,330	2,448	397	13,364	16,092
<u>South Europe</u>					
Greece	685	133	--	784	1,345
Portugal	740	49	4	785	941
Spain	3,557	833	--	4,390	6,230
Turkey	4,622	--	41	4,581	5,574
Yugoslavia	5,970	36	200	6,104	7,423
Total	15,574	1,051	245	16,644	21,513

Source: Agricultural Projections for 1975 and 1985, op. cit., pp. 20-21.

However, on the basis of the projected increase in production for the remaining countries, some South European countries may become substantial exporters of coarse grains.

Japan

Domestic wheat production in Japan during the five years 1957 to 1961 provided about 35 per cent of domestic utilization. Since that time, domestic production has decreased and imports increased with the result that in 1968 domestic production made up only 20 per cent of requirements (Table IV-13). Since 1963, the area planted to wheat has decreased by more than one-third.

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Factors contributing to this decrease are opportunities for employment in industry, loss of arable land to industrial and urban expansion, and relatively low returns from wheat production.

Table IV-13

JAPAN: SUPPLY AND UTILIZATION OF WHEAT
AVERAGE 1957/1961; ANNUAL 1962 TO 1968

	Area (Thousand hectares)	Production	Imports (Thousand metric tons)	Exports	Apparent Domestic Utilization
Average 1957/1961	600	1,500	2,613	41	4,072
1962	642	1,631	2,663	84	4,210
1963	584	715	3,919	68	4,566
1964	508	1,244	3,546	80	4,710
1965	476	1,287	3,553	134	4,706
1966	421	1,024	4,260	77	5,207
1967	367	970	3,938	70	4,838
1968	320	1,012	4,349	n.a.	5,361

Source: World Wheat Statistics, *op. cit.*; Review of the World Grains Situation, *op. cit.*

Japanese wheat is a low quality soft wheat which is unsatisfactory for bread. About half of the domestically produced wheat is used for making noodles, which make up about 43 per cent of the wheat consumed in Japan.

The Japanese Food Agency, which is an autonomous body within the Ministry of Agriculture and Forestry, controls the importation of grains into Japan and their utilization. The quantity of foreign wheat and barley to be imported is determined semi-annually -- early in the year for the April-September period, and in July after the size of the new crop is known for the remainder of the year. The Food Agency, which administers the payment of producer subsidies, levies an import duty on foreign imported wheat to offset, in part, the cost of subsidies paid to producers of wheat. It establishes a new schedule of resale prices for imported grains in July each year, after the size of the domestic crop is known, in accordance with its budgetary requirements and the

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Government-set level of producer prices for wheat and barley. The spread in resale prices for different wheats takes into account price differentials on international markets.

The Japanese milling industry which is made up of several hundred flour mills, of which four large mills account for some 80 per cent of the flour output, is extremely quality conscious. Since the official ceiling price of bread has not been permitted to increase over a period of five years, the millers are under continual pressure to maintain a high uniform quality grist and at the same time to keep prices of flour at minimum levels. They are therefore very sensitive to changes in the schedule of resale prices of imported wheat, hence any such change can have important implications for the competitiveness of different wheats. In the resale price schedule for 1967, a sharp widening of the spread between the Manitoba grades and competing wheat caused millers to reduce the content of Manitobas in their grist and resulted in a decrease of 29 per cent as compared with 1966 in Canada's wheat exports to Japan. This decrease in Canada's exports was made up largely by increases of 39 per cent in Australian exports resulting from the inclusion in the resale schedule for the first time of New South Wales wheat at a relatively low price (Table IV-14).

Table IV-14

JAPAN: COMPARISON OF DISTRIBUTION OF IMPORTS OF WHEAT
BY COUNTRY OF ORIGIN
1966 to 1968
(Thousand metric tons)

	1966	1967	1968
United States	2,136	2,225	1,839
Canada	1,620	1,098	1,247
Australia	431	612	1,171
Other	--	3	92
Total	4,187	3,938	4,349

Source: Review of the World Grains Situation, *op. cit.*

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A readjustment of spreads in the 1968 resale price schedule has improved the competitiveness of Canadian wheat in Japan.

Only Japanese firms registered with the Food Agency can operate as grain importers in Japan. These registered firms submit tenders to the Food Agency for the importation of the desired quantities and qualities from the sources decided upon by the Food Agency basis, c.i.f. Japan with freight, exchange, commissions and incidentals all for the account of the importer. The Food Agency allocates the annual quantity to be imported in such a way that each importer receives an equitable share in accordance with past performance.

Besides the Food Agency's Staple Food (Wheat) Import Program, which includes hard wheat and soft wheat classifications of foreign wheat for the food sector, the Food Agency in its Feed Section is responsible for the Feed Import Program covering some one million tons of low quality wheat. This wheat is sold to a group of 125 mills which have permission from the government to produce special bran in addition to normal flour milling activities. These mills extract a maximum of 45 per cent flour and sell the resulting 55 per cent of rich endosperm-holding bran to the Japanese feed industry. They sell the flour on the food flour market mostly for noodles.

Japanese imports of wheat increased from an average of 2.6 million tons for the 1957/1961 period to 4.2 million tons in 1967 and 4.3 million in 1968 (Table IV-13). Taking domestic production into account during this period, total available supplies of wheat increased from an average of 4.0 million tons for the period 1957/1961 to 5.4 million in 1968. Wheat consumption is therefore continuing to rise but there are indications that the rate of increase may have levelled off.

The FAO projections for Japan indicate a falling in domestic production of wheat from an average of 1.4 million tons for the 1961/1963 period to 1.1 million tons in 1975 (Table III-1). This decreased level of production had already been reached by 1967 and indications are for a continued decline. Projections of consumption, however, forecast a continued growth to a level of 7.1 million tons in 1975 on the basis of the high GDP assumption, which would apply in the case of the Japanese economy. At this

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time, in view of the apparent levelling-off in the rate of consumption increase, this projection would not seem realistic and it is suggested that the projected consumption for 1975 might be revised downward to 6.1 million tons, the level projected by OECD (Table III-2). Of this amount, it is suggested that 600 thousand tons would be produced domestically and 5.5 million tons imported.

The area in coarse grains in Japan decreased from an average of 1.1 million hectares for the 1956/1960 period to 0.4 million hectares in 1967 (Table IV-15). During the same period, coarse grain production declined from 2.6 million to 1.2 million tons and imports increased from 1.5 million to 7.9 million tons. Domestic utilization of coarse grains in 1967 was 9 million tons, 55 per cent more than the average for the 1956/1960 period.

Table IV-15

JAPAN: SUPPLY AND UTILIZATION OF COARSE GRAINS
AVERAGE 1956/1960; ANNUAL 1961 TO 1967

	Area (Thousand hectares)	Production	Imports (Thousand metric tons)	Exports	Apparent Domestic Utilization
Average 1956/1960	1,106	2,607	1,501	--	4,108
1961	862	2,331	2,335	--	4,666
1962	777	2,036	2,942	--	4,978
1963	710	1,064	4,561	--	5,625
1964	610	1,422	5,088	--	6,510
1965	536	1,453	5,135	--	6,588
1966	454	1,262	7,612	--	8,874
1967	402	1,189	7,910	--	9,099

Source: Review of the World Grains Situation, op. cit.

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The FAO projection for coarse grain consumption in Japan for 1975 was 11.3 million tons under a high GDP assumption as compared with an average of 4.6 million tons for the 1961/1963 base period (Table III-4). Production, which was 1.8 million tons in the base period, was projected as 1.3 million tons in 1975. The OECD projection for consumption of coarse grains in Japan in 1975 was 12.5 million tons while that for production of coarse grains was 0.9 million tons (Table III-5).

Imports of coarse grains from the principal exporting countries amounted to 6.2 million tons in 1966 and 5.8 million tons in 1967, as compared with an average of 1.4 million tons during the five years 1956 to 1960 (Table IV-16). On the basis of this rate of growth and the potential for expansion of meat and dairy products in Japan, the projections prepared by FAO or by the OECD would seem possible but they are on the high side. Using these projections as a guide and assuming domestic production of coarse grains at about 1 million tons, imports of some 10 million tons of coarse grains would be required by Japan in 1975.

South Africa

South African imports of wheat are purchased by the South African Wheat Board and distributed to mills in accordance with their requirements. Although production of wheat in South Africa has increased substantially, it has varied considerably from year to year both in terms of volume and quality (Table IV-17). As a result, imports of wheat were 97 thousand tons in 1967 and 800 thousand tons in 1966.

The FAO 1975 projection forecasts a continued growth in both production and consumption of wheat in South Africa, resulting in a somewhat greater deficiency in domestic production in relation to requirements (Table III-1). However, as a result of increased plantings and improved varieties and other technological developments, wheat production in 1967 had already exceeded the 1975 projection of 1.1 million tons. It is likely that both production and consumption of wheat in South Africa will continue to increase and that wheat will make up an increasing proportion of the cereal diet of the native population.

Table IV-16
COARSE GRAINS: (1) EXPORTS TO JAPAN FROM PRINCIPAL EXPORTING COUNTRIES
1956 TO 1967
(Thousand metric tons)

	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967
Argentina	59	54	229	421	280	181	95	133	313	147	264	93
Australia	376	194	278	33	--	137	6	118	168	41	169	87
United States	568	623	736	258	751	1,157	1,392	2,504	3,161	4,432	4,552	4,393
Canada	234	249	73	39	--	--	--	80	183	142	182	383
France	--	--	--	--	--	--	--	13	--	--	--	68
Thailand	--	--	--	224	408	--	420	--	729	776	858	631
South Africa, Rep.	57	85	3	168	458	515	931	--	--	--	--	--
Mexico	--	--	--	--	--	--	--	--	26	106	155	62
Others	1	37	4	15	--	5	30	37	37	--	--	107
Total	1,295	1,242	1,323	1,158	1,897	1,995	2,874	2,885	4,617	5,644	6,180	5,824

(1) Corn, barley, sorghums and millet.

Source: World Grain Trade Statistics, *op. cit.*

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Table IV-17

SOUTH AFRICA: SUPPLY AND UTILIZATION OF WHEAT
AVERAGE 1957/1961; ANNUAL 1962 TO 1968

	Area (Thousand hectares)	Production	Imports (Thousand metric tons)	Exports (Thousand metric tons)	Apparent Domestic Utilization
Average 1957/1961	1,160	780	133	--	913
1962	1,269	700	241	--	941
1963	1,449	882	164	--	1,046
1964	1,565	1,071	80	--	1,151
1965	1,602	670	162	--	832
1966	1,360	570	800	--	1,370
1967	1,610	1,050	97	--	1,147
1968	2,140	1,270	--	--	1,270

Source: World Wheat Statistics, op. cit.

South Africa will probably continue to import some quality wheat but the volume of imports will vary from year to year in accordance with the volume and quality of the domestic crop and will not likely average more than 300 thousand tons.

Developing Countries

The problem of rationalizing projections of production and consumption of grains in the developing countries is in many respects greater than that with either the developed or the centrally planned group. In the developing countries, the development of potential resources involved in indigenous production may be dependent on the availability of capital and other inputs pertaining directly to the production of grains; on marketing facilities such as transportation, storage and merchandising; and on technical training and general education services. In many countries also, the availability of effective foreign technical and capital assistance may be vital to development and may effect both production and trade.

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Furthermore, the availability of wheat and flour or coarse grains under a government-assisted program, such as the U.S. PL 480, may either promote or retard the development of indigenous production in individual recipient countries, and can greatly influence the volume of grain imported by the developing group. Wheat and flour made available as donations or sales for local currencies under government-assisted programs made up as much as 72 per cent of total imports of developing countries in 1961 (Table IV-18). By 1967, this form of government food aid had decreased to 14 per cent of total imports. This reduction in the percentage of wheat and flour imported under these programs reflects a reduction in U.S. government-assisted shipments of wheat and flour, but is also due to a shift with U.S. aid programs from local currency sales to dollar sales on credit.

Table IV-18

EXPORTS OF WHEAT AND FLOUR AS DONATIONS AND SALES FOR LOCAL CURRENCY
UNDER GOVERNMENT-ASSISTED PROGRAMS CARRIED OUT BY THE UNITED STATES, CANADA AND AUSTRALIA
IN COMPARISON WITH TOTAL EXPORTS TO DEVELOPING COUNTRIES
AVERAGE 1954/1958; ANNUAL 1959 TO 1968

	Total Food Aid Shipments ⁽¹⁾ (Thousand metric tons)	Total Imports Developing Countries	Donations as Per Cent of Total Imports (Per cent)
Average 1954/1958	5,904	10,346	57.1
1959	9,450	16,010	59.0
1960	11,017	16,007	68.8
1961	11,814	16,378	72.1
1962	12,095	17,322	69.8
1963	11,474	17,724	64.7
1964	12,980	20,465	63.4
1965	12,200	22,930	53.2
1966	8,434	26,241	32.1
1967	3,553	26,281	13.5
1968 ⁽²⁾	4,258	20,928	20.3

(1) Includes only donations and sales for local currency.

(2) In 1968 EEC provided donations of wheat and flour amounting to 355 thousand metric tons.

Source: Review of the World Wheat Situation, op. cit.; Review of the World Grains Situation, op. cit.

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The principal factor to be taken into account in adjusting the 1975 projections for the consumption and production of wheat and flour for the developing countries is the technological development which has been taking place in this group of countries, particularly during the past two years. Because of the importance of this factor in relation to the future wheat imports of these countries, attention is directed to the following review of developments likely to have a long-term effect on the production and trade in grains in developing countries, which has been prepared by the Secretariat of the International Wheat Council.^{13/}

"The breeding of high-yielding varieties of wheat and maize which are suited to large regions of the tropics and subtropics has offered a promising opportunity to developing countries to bring about a substantial increase in food production. To derive the maximum benefit from these new varieties requires, however, the greater use of fertilizers and improved cultivation techniques whilst the governments for their part are undertaking programmes to increase the irrigated area. Important work in the production of the new high-yielding varieties has been carried out by the joint effort, started 25 years ago, of the Rockefeller Foundation and the Mexican Government at Chapingo, which was formally recognized last year by giving it the name of the International Maize and Wheat Improvement Centre. A similarly successful project for rice is being fostered by the International Rice Research Institute (IRRI) at Los Baños, Philippines, established in 1962. In addition, two more international research centres for tropical agriculture are being built, one at Palmira, Colombia and the other at Ibadan, Nigeria. The Rockefeller and Ford Foundations have lent their support to all four of these research organizations. The new varieties and the techniques required for their optimum cultivation which have emerged from the institutes, are being introduced after careful testing in suitable ecological areas. National research organizations in turn are continuing the development of high-yielding varieties to adapt them to indigenous soil and climatic conditions.

^{13/} Review of the World Grains Situation, *op. cit.*, 1967/68, pp. 56-57.

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"Realization of the full benefit of the high-yielding varieties is, however, dependent on simultaneous advances in the related sectors of the economies of the developing countries, eg, improvement of roads, grain storage and handling, as well as that of farm machinery, grain marketing and finance.

"Plants grown from these new varieties are characterized by their shortness of straw and many varieties have in addition a short vegetation period. They are highly responsive to chemical fertilizers but they require a regular water supply which is possible in most areas only by irrigation. Given proper inputs, the yields from the new varieties may be double or treble those from the local seed.

"The development and management of water resources is thus of paramount importance to the agriculture of these countries. Most of the current water projects are massive in scale and dependent on financial and technical aid from the developed countries or international bodies. They usually involve re-direction of rivers or other flows of water or the raising of subterranean water and subsequent storage. All these techniques are being applied in developing countries.

"In West Pakistan, the world's biggest earth and rockfill dam is being built on the Indus river. It is scheduled for completion in 1976 and when completed will harness the Indus river and its two tributaries for irrigation and power. Canada, France, Italy, the United Kingdom and the United States are the principal countries which are helping to finance the project. They and the World Bank together will provide \$500 million for the dam. In the United Arab Republic, 812,000 acres have already been converted to perennial irrigation by water from Lake Nasser created by the Aswan High Dam. Another 200,000 acres will be so converted by the end of 1969/70. Of the reclaimed land 332,000 acres are already under cultivation. About 20,000 acres of farmland in Saudi Arabia will be irrigated by a new dam under construction which is expected to be completed by 1970. The dam is located in Wadi Jizan in southwest Saudi Arabia and will cost \$8.2 million. The Saudi Arabian Government and the UN Special Fund will collaborate in establishing pilot plots in the irrigated area.

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"The Punjab regions of India and Pakistan are now adapting themselves to a much wider use of high-yielding varieties since much of this area has Himalayan water only 20 to 30 feet below the surface. India has already 90 million acres under irrigation and more lands are being brought under irrigation with water pumped out of tube wells by inexpensive diesel or electric motors. The improvement in, and reliability of, water supply coupled with the fact that many plants from the newly developed varieties need a shorter growing season have stimulated farmers to explore the prospects of a more intensive use of land particularly by double cropping. In India in 1968 the area seeded to high-yielding varieties of grain (excluding rice) amounted to 15 million acres, most of which was sown to wheat. It is now planned to increase the area under the high-yielding varieties for the 1969 crop to 21 million acres. New strains of rice seed are likely to increase the production of rice in South India substantially.

"Pakistan is nearing the achievement of self-sufficiency in wheat well ahead of its target date. Colombia has now seeded more of the warm climate areas to high-yielding wheat varieties and diverted some of the old wheat lands to other uses. The 1968 wheat harvest is expected to equal the 1962-66 average although the area has been reduced by one-third. The Colombian Government started a plan in 1967 which called for public investment in agriculture at about 29 per cent of all public investment in 1968 as compared with less than 10 per cent in previous years. Many more examples of self help projects could be given. Iran, for instance, is engaged in a very large scale expansion of her irrigated areas and Morocco has several irrigation projects in hand.

"Another development has been the search for dry-land wheat varieties. Greece is planning to reduce its wheat acreage by about 15 per cent during the next two years but at the same time to increase the yields by using dry-land wheat varieties so that the level of production remains unchanged. An important advance in this field seems to be the development of drought resistant varieties and what is equally important, the development of salt tolerant varieties is under way in several countries of the Middle East.

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"These developments can have a substantial influence on the production potential in the developing countries but this will only be fully realized if it is accompanied by a large increase in the application of chemical fertilizers and a much wider use of agricultural machinery both of which are dependent on finance. It has been estimated that, at present, the developing countries are using only one-seventh of the world production of chemical fertilizers. Although the basis exists for a rapid development of grain production, the availability of sufficient water cannot always be assured and plant diseases can have a seriously retarding influence. Moreover, the extent to which the increase in food production can match both the explosive population increases and the need for improved diets remains a matter for further study."

The utilization of wheat and flour in the developing countries amounted to an average of 59 million metric tons for the period 1964/1967 as compared with a 39 million ton average for the period 1954/1958 (Table IV-19).

Table IV-19

DEVELOPING COUNTRIES: PRODUCTION, IMPORTS
AND UTILIZATION OF WHEAT AND FLOUR
AVERAGE 1954/1958, 1964/1967
(Thousand metric tons)

	1954/1958			1964/67		
	Produc- tion	Imports	Utili- zation	Produc- tion	Imports	Utili- zation
North and Central America	1,200	826	2,026	2,767	832	3,599
South America	2,900	2,663	5,563	2,222	4,503	6,725
Africa	5,600	1,725	7,325	5,825	4,970	10,795
Asia	19,200	5,132	24,332	24,232	13,775	38,007
Total	28,900	10,346	39,246	35,046	24,080	59,126

Source: Compiled from IWC data.

Future Markets for Canadian Grains

This increase of 20 million tons in the utilization of wheat and flour resulted from 6 million tons greater production and 14 million tons higher imports.

In Asia, which accounts for about two-thirds of the consumption of wheat and flour in the developing countries group, the utilization of wheat and flour increased by nearly 60 per cent between the two periods. This change in consumption resulted from an increase of 26 per cent in production and 168 per cent in imports.

In South America and Africa, on the other hand, the increased utilization was almost entirely from higher imports.

In the North and Central American areas, imports remained unchanged and the increased use was entirely the result of greater production.

The substitution over wide areas of the new high-yielding varieties of wheat and rice for those previously grown, together with increased irrigation is likely to result in very large increases in production in these regions. Such increased production will reduce the dependence on imports to meet the growing consumption requirements. The results of such technological developments in terms of decreased imports is likely to emerge first in Pakistan and India where the greatest progress in the introduction of the new varieties has been made. While recognizing the longer-term implications of these technological changes in terms of greater production and reduced imports in the developing countries, it is not unlikely that in individual years such production hazards as drought, floods and disease may re-occur with devastating effects on the level of production.

As indicated in Chapter III, the FAO projections forecast an increase of 50 per cent in consumption of wheat in the developing countries by 1975 as compared with increases in production of 35 and 85 per cent, respectively. These projections suggest that net wheat import requirements in 1975 may be 27 million tons on a low growth assumption and about 16 million tons on the assumption of rapid economic growth. In the light of the possible technical developments referred to above, it would seem that the increase in production by 1975 would be closer to that forecast on the basis

Projected Trade in Wheat and Coarse Grains

of a high rate of growth assumption than on the assumption of low growth. It is suggested, therefore, that imports of wheat by the developing countries in 1975 may be between 20 and 25 million tons.

The FAO projections for the developing countries indicate that by 1975, coarse grain consumption may be 44 to 50 per cent higher than the base period, according to the assumption of low or high growth rates. Production of coarse grains was projected to increase 36 or 50 per cent, respectively, according to rates of growth. Since in the base period consumption was approximately equal to production, the projection would suggest net imports of about 8.5 million tons in the low economic growth and a balancing of production and consumption on the basis of the high growth consumption.

Taking into account the current technical developments related to grain production, it may be realistic to assume that production will increase at a more rapid rate than that under a low economic growth. Accordingly, the developing countries may import from four to six million tons of coarse grains by 1975.

Centrally Planned Countries

A lack of familiarity with the philosophy and objectives of the centrally planned countries in relation to resource use in the production of grains is a serious handicap in forecasting import requirements.^{14/}

The U.S.S.R. is the world's largest wheat producer. Production of wheat in the U.S.S.R. averaged 91.3 million metric tons for the last three crop years, 1966 to 1968; an increase of 30 per cent over the three-year average 1958/1960 (Table IV-20).

^{14/} A detailed study of developments relating to grain production and trade in the centrally planned countries which is being carried out by Dr. C. F. Wilson, who, as Minister Counsellor, Canadian Embassy, Vienna, 1964/67, was accredited to the countries of Eastern Europe, will meet a very urgent need in this regard.

Future Markets for Canadian Grains

Table IV-20

U.S.S.R.: WHEAT AREA AND YIELD, PRODUCTION,
IMPORTS, EXPORTS AND DOMESTIC USE
AVERAGE 1958/1960, 1961/1963; ANNUAL 1963 TO 1968

	Area (Million hectares)	Yield (100 kg/ hectare)	Production	Imports (Thousand metric tons)	Exports	Domestic Use
Average						
1958/1960	63.3	11.0	69,990	165	5,497	64,658
1961/1963	65.0	9.6	62,321	2,953	3,888	61,386
1963	64.6	7.7	49,700	8,859	1,282	57,277
1964	67.9	11.0	74,399	2,656	1,159	75,896
1965	70.2	8.5	59,600	9,187	2,201	66,596
1966	70.0	14.4	100,499	4,683	4,126	101,056
1967	67.0	11.5	77,300	1,534	5,084	73,750
1968	67.2	14.3	96,200	147	5,332	91,015

Source: Production Yearbook, *op. cit.*; World Wheat Statistics, *op. cit.*; Review of the World Grains Situation, *op. cit.*

During the intervening period, however, the 1963 and 1965 crops were 30 and 15 per cent, respectively, below the 1958/1960 average, resulting in imports of about nine million tons each year as well as a substantial cutback in exports. During the above period, the area in wheat remained relatively stable but yields per hectare averaged nearly 30 per cent higher during the 1966/1968 period than in 1958/1960.

As a result of a high variability in yield and a large area under production, wheat production in the U. S. S. R. is subject to extreme variations which can give rise to a high degree of instability in the world wheat market through a sudden stimulation of import demand or the offering of surpluses at reduced prices. Under these circumstances, forecasting U. S. S. R. imports or exports at any specific point in time can be extremely hazardous. It would seem, however, that, as indicated by the FAO projections for 1975, the U. S. S. R. will continue to be a substantial net exporter of wheat, except on occasional years when climatic conditions are adverse.

Projected Trade in Wheat and Coarse Grains

In the six Eastern European countries, aggregate wheat production averaged 18.9 million tons for the years 1965/1967, as compared with an average of 13.5 million during 1961/1963 and the 17.4 and 18.0 million tons production included in the FAO projections for 1975 under low and high productivity, respectively (Table IV-21). Apparent domestic consumption of wheat similarly had increased to an average of 22.6 million tons for the 1965/1967 period, representing a greater increase than had been projected for 1975. The current gap between consumption and production was, therefore, 4.4 million tons as compared with a projected gap of 2.8 million.

The wheat situation in individual Eastern European countries varies considerably. As a result of increased production, Bulgaria and Rumania have been net exporters since 1965 and Hungary has only a small wheat trading deficit. The area in wheat has declined slightly in all three countries but yields have increased by more than 50 per cent as compared with 1957 to 1959 (Table IV-22). Sharply increased yields during the last four or five years probably reflect the use of increased capital and other production inputs including fertilizer. It is likely that this shift towards more intensive farming will continue in these three countries and result in a further expansion in wheat production and their continuation as net exporters.

Although wheat production in Czechoslovakia, East Germany and Poland has increased by more than 50 per cent, consumption has also grown but at a somewhat slower rate. These three countries, therefore, continue to import 36, 41 and 25 per cent, respectively, of their requirements. The area seeded to wheat increased slightly and yields were raised about 40 per cent in all three countries. The levels of yields in Czechoslovakia and East Germany suggest reasonably intensive use of resources and a continuation indefinitely as net importers of wheat. Yields in Poland, on the other hand, reflect possibilities of more intensive resource use and a still undeveloped potential for increased wheat production.

It is suggested that these three countries jointly will have import requirements for wheat of about 3.5 million metric tons in 1975, most of which will probably be provided by the U. S. S. R.

Table IV-21

WHEAT: PRODUCTION, IMPORTS, EXPORTS AND DOMESTIC USE IN EASTERN EUROPEAN COUNTRIES
 AVERAGE 1958/1960, 1961/1963, 1964 TO 1968
 (Thousand metric tons)

	Average						
	1958/1960	1961/1963	1964	1965	1966	1967	1968
<u>Bulgaria</u>							
Production	2,383	2,004	2,118	2,921	3,193	3,254	2,549
Imports	87	190	265	50	220	18	243
Exports	7	7	--	--	406	424	n.a.
Domestic use	2,463	2,187	2,383	2,971	3,007	2,848	n.a.
<u>Czechoslovakia</u>							
Production	1,499	1,692	1,835	1,992	2,247	2,516	3,128
Imports	1,141	1,178	1,380	1,456	1,292	1,454	1,233
Exports	39	--	--	--	--	--	--
Domestic use	2,601	2,870	3,215	3,448	3,539	3,970	n.a.
<u>East Germany</u>							
Production	1,399	1,211	1,348	1,802	1,521	2,012	2,050
Imports	1,423	1,420	1,622	1,996	1,561	1,354	1,200
Exports	61	55	--	--	5	--	--
Domestic use	2,761	2,576	2,970	3,798	3,077	3,366	n.a.
<u>Hungary</u>							
Production	1,721	1,806	2,131	2,453	2,349	2,718	2,829
Imports	292	346	181	109	128	68	80
Exports	35	60	17	17	63	7	n.a.
Domestic use	1,978	2,092	2,295	2,545	2,414	2,779	n.a.
<u>Poland</u>							
Production	2,364	2,853	3,042	3,422	3,646	3,934	4,655
Imports	1,536	1,716	1,433	1,636	1,755	1,332	1,046
Exports	--	4	38	8	1	5	n.a.
Domestic use	3,900	4,565	4,437	5,050	5,400	5,261	n.a.
<u>Rumania</u>							
Production	3,455	3,948	3,824	5,937	5,065	5,820	4,848
Imports	36	133	170	--	--	--	--
Exports	95	137	28	571	578	1,216	n.a.
Domestic use	3,396	3,944	3,966	5,366	4,487	4,604	n.a.
<u>Eastern Europe</u>							
Production	12,821	13,514	14,298	18,527	18,021	20,254	20,180
Imports	4,515	4,983	5,051	5,247	4,956	4,226	3,833
Exports	237	263	83	556	1,053	1,652	n.a.
Domestic use	17,099	18,234	19,266	23,178	21,924	22,828	n.a.

Source: World Wheat Statistics, op. cit.

Table IV-22

WHEAT: AREA AND YIELD IN COUNTRIES OF EASTERN EUROPE
1957 TO 1968

(Area - Million hectares; Yield - 100 kg. per hectare)

	Bulgaria		Czechoslovakia		East Germany		Hungary		Poland		Rumania	
	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield	Area	Yield
1957	1.4	16.4	0.7	20.6	0.4	30.0	1.2	15.7	1.4	16.1	3.0	12.5
1958	1.4	16.2	0.7	18.2	0.4	31.0	1.2	12.5	1.5	15.8	3.0	9.8
1959	1.4	17.4	0.7	22.9	0.4	31.5	1.1	17.1	1.4	17.3	3.0	13.4
1960	1.2	19.0	0.6	23.3	0.4	34.8	1.0	16.8	1.4	16.9	2.8	12.2
1961	1.3	15.4	0.6	26.0	0.4	27.5	1.0	19.1	1.4	19.9	3.0	13.4
1962	1.2	16.7	0.7	24.5	0.4	31.1	1.1	17.9	1.4	19.4	3.0	13.3
1963	1.2	15.9	0.7	24.6	0.4	30.0	1.0	15.7	1.5	19.9	2.9	13.2
1964	1.2	17.7	0.8	22.2	0.4	31.1	1.1	18.6	1.6	18.7	3.0	12.9
1965	1.2	25.5	0.8	24.2	0.5	36.7	1.1	21.7	1.7	20.6	3.0	19.9
1966	1.1	28.0	0.9	25.3	0.5	31.4	1.1	21.7	1.7	21.5	3.0	16.7
1967	1.1	30.4	0.9	27.3	0.5	33.3	1.0	25.8	1.8	22.4	2.9	20.3
1968	1.1	23.9	1.0	31.3	0.6	37.3	1.1	25.2	1.9	24.7	3.0	17.0

Source: Production Yearbook, op. cit.; World Wheat Statistics, op. cit.

Future Markets for Canadian Grains

Available information on the production of wheat in Mainland China indicates a more or less static 25 million hectares seeded to wheat, with yields per hectare and resultant production declining about 25 per cent over the last decade (Table IV-23). Factors encouraging continued imports of wheat into Mainland China include a continuing, favourable rice-wheat price relationship. The saving on domestic transport, and the convenience of supplying large Chinese coastal cities with imported wheat, as well as regional deficiencies of cereal supply, make it likely that Mainland China will continue to import about five million tons of wheat per year.

Table IV-23

MAINLAND CHINA: WHEAT AREA AND YIELD, PRODUCTION,
IMPORTS, EXPORTS AND DOMESTIC USE
AVERAGE 1958/1960, 1961/1963; ANNUAL 1963 TO 1968

	Area	Yield	Production	Imports	Exports	Domestic
	(Million hectares)	(100 kg/ hectare)		(Thousand metric tons)		Use
Average						
1958/1960	25.7	12.0	27,268	672	--	27,940
1961/1963	24.6	11.5	19,933	4,938	--	24,871
1963	24.2	11.6	21,800	5,198	--	26,998
1964	25.5	10.0	23,100	5,046	--	28,146
1965	26.2	10.0	21,500	6,325	--	27,825
1966	24.5	9.5	20,100	5,124	--	25,224
1967	24.5	9.4	23,000	4,156	--	27,156
1968	25.0	8.4	21,000	3,776	--	24,776

Source: Production Yearbook, *op. cit.*; World Wheat Statistics, *op. cit.*

Projected Trade in Wheat and Coarse Grains

Since wheat and coarse grains are not important crops in Cuba, it has been assumed that imports will continue at current levels of about 500 thousand tons for wheat and flour and 200 thousand tons for coarse grains.

Coarse grain production in the U.S.S.R. in 1967 was 58 million tons as compared with averages of 48 million tons for the period 1956/1960 and 54 million for the years 1961/1965 (Table IV-24).

The FAO projections for coarse grains for 1975 show the U.S.S.R. to be a continuing net exporter but with coarse grain production increasing 31 to 48 per cent, respectively, over the base period on the basis of a low or high rate of growth as compared with an increase of 45 and 52 per cent, respectively, in consumption.

U.S.S.R. exports of coarse grains averaged 1.7 million tons for the years 1961/1965 or about 3 per cent of production. About 60 per cent of U.S.S.R. exports of coarse grains were shipped to Eastern European countries (Table IV-25).

The six Eastern European countries, which were in a slightly deficit position with respect to trade in coarse grains in the 1961/1963 base period, are shown as being in balance on an aggregate basis as between production and consumption in the 1975 projection. In 1967, aggregate production of coarse grains for the six countries was 36 million tons as compared with an average of 33 million tons for the 1960/1964 period. The greatest increases in production of coarse grains occurred in Bulgaria and Rumania which will be self-sufficient in terms of coarse grains by 1975. Only minor production increases occurred in East Germany, Hungary and Poland, which, along with Czechoslovakia, will continue to depend on imports of one to two million tons from U.S.S.R. to supplement production.

Table IV-24

COARSE GRAINS: AREA AND PRODUCTION IN EASTERN EUROPE AND U.S.S.R.
 AVERAGE 1955/1959, 1960/1964; ANNUAL 1965 TO 1967
 (Area - Thousand hectares; Production - Thousand metric tons)

	Average		1960/1964		1965		1966		1967	
	Area	Production	Area	Production	Area	Production	Area	Production	Area	Production
Bulgaria	1,327	2,102	1,203	2,570	1,199	2,410	1,141	3,508	1,158	3,437
Czechoslovakia	1,836	3,739	1,762	3,913	1,576	3,244	1,615	3,621	1,480	3,523
East Germany	1,874	4,321	1,601	3,902	1,580	4,322	1,554	3,872	1,569	4,759
Hungary	2,378	4,519	2,205	4,711	2,026	4,924	2,008	5,848	1,938	4,777
Poland	7,580	11,037	7,069	11,513	6,934	12,325	6,416	11,759	6,380	11,914
Rumania	4,394	6,001	3,897	6,626	3,711	6,590	3,763	8,774	3,695	7,581
Eastern Europe	19,439	31,719	17,757	33,235	17,026	33,815	16,497	36,920	16,320	35,991
U.S.S.R. (1)	46,804	48,585	47,337	54,469	41,566	50,758	43,408	58,641	43,700	58,198

(1) Average 1956/1960, 1961/1965.

Source: Review of the World Wheat Situation, op. cit.; Grain Crops, op. cit.

Table IV-25

U.S.S.R.: EXPORTS OF BARLEY, OATS AND CORN BY DESTINATION
CALENDAR YEARS 1957 TO 1966
(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966
<u>Developed countries</u>										
United Kingdom	--	--	5	61	506	68	--	--	--	--
EEC countries	278	194	131	93	270	118	107	124	194	--
Other Western Europe	168	76	134	125	155	160	116	9	100	3
Western Europe	(446)	(270)	(269)	(279)	(931)	(346)	(223)	(133)	(294)	(3)
Japan	--	--	--	--	7	--	--	--	--	--
Total	446	270	279	279	938	345	223	133	321	3
<u>Developing countries</u>										
Africa	--	--	--	--	3	--	--	1	7	--
<u>Centrally planned countries</u>										
Bulgaria	--	--	--	--	--	14	--	27	113	--
Czechoslovakia	273	158	18	77	226	374	328	442	623	126
East Germany	511	260	111	133	308	483	254	406	416	73
Hungary	134	72	--	--	30	254	78	15	378	--
Poland	88	--	--	--	28	135	256	60	491	--
Eastern Europe	(1,006)	(490)	(129)	(210)	(593)	(1,260)	(916)	(922)	(2,021)	49
Cuba	--	--	--	--	59	143	198	250	179	228
Korea, North	--	--	--	--	--	--	--	--	101	--
Total	1,006	490	129	210	652	1,403	1,114	1,172	2,301	476
<u>Unspecified</u>										
TOTAL	1,522	760	408	489	1,593	1,749	1,339	1,333	2,631	482

Source: World Grain Trade Statistics, op. cit.

Future Markets for Canadian Grains

Projected Imports of Wheat and Coarse Grains

This Chapter has presented estimates of probable levels of imports of wheat and coarse grains in 1975, based on an analysis of the FAO and OECD projections of the consumption and production of wheat and coarse grains as modified by policy and other developments in selected countries. Particular consideration has been given to the effects of policies in some of the principal importing countries in the economically developed group, which directly or indirectly affect the volume of imports.

The estimated 1975 imports of wheat and flour by economic groupings of importing countries are presented in Table IV-26, along with actual imports for current and past years. It may be noted that during the three five-year periods covering the years 1949 to 1963, total wheat imports averaged 25.5, 30.5 and 43.8 million bushels, respectively. Estimates of wheat imports in 1975, based on the projected consumption and production of wheat in importing countries, suggest that the volume of international trade in wheat may be between 44 and 51 million metric tons, representing a return to levels closer to those of earlier years which may be more representative of normal market demand than conditions experienced during intervening years.

Table IV-26

CURRENT AND PROJECTED IMPORTS OF WHEAT AND FLOUR
BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1949/1953, 1954/1958, 1959/1963; ANNUAL 1963 TO 1968
(Million metric tons)

	Developed Countries	Developing Countries	Centrally Planned Countries	Total
Average				
1949/1953	16.0	9.4	0.1	25.5
1954/1958	19.5	7.6	3.4	30.5
1959/1963	16.6	16.7	10.5	43.8
1963	16.4	17.7	20.5	54.6
1964	15.7	20.5	13.4	49.6
1965	17.2	22.9	21.5	61.6
1966	16.5	26.2	15.4	58.1
1967	14.8	26.3	10.7	51.8
1968	15.4	20.9	8.5	45.1
Projected 1975 range	15-16	20-25	9-10	44-51

Source: Review of the World Grains Situation, op. cit.; Agricultural Commodities - Projections for 1975 and 1985, op. cit.

Projected Trade in Wheat and Coarse Grains

Table IV-27

CURRENT AND PROJECTED IMPORTS OF COARSE GRAINS
BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1959/1963; ANNUAL 1964 TO 1967
(Million metric tons)

	Developed Countries	Developing Countries	Centrally Planned Countries	Total
Average 1959/1963	23.4	2.4	1.3	27.1
1964	28.5	2.5	1.6	32.6
1965	35.1	4.0	2.0	41.1
1966	36.2	5.0	1.4	42.6
1967	35.7	4.2	1.1	41.0
Projected 1975 range	26-27	3-6	1-2	30-35

Source: Review of the World Grains Situation, op. cit.; Agricultural Commodities - Projections for 1975 and 1985, op. cit.

Estimates of imports of coarse grains in 1975 are summarized in Table IV-27 in comparison with actual imports for 1964 to 1967 and the five-year average 1959/1963. The projected imports for 1975 for all groups of countries represent a considerable decrease from imports for 1965 to 1967 and a return to the pre-1964 level. The total import trade in coarse grains is projected as falling in the range of 30 million to 35 million metric tons.

CHAPTER V

COMPETITION IN THE EXPORT MARKET FOR WHEAT

The world import requirements for wheat are provided by six large exporting countries together with a number of other countries which regularly export small quantities of wheat or flour (Table V-1). The four major wheat-exporting countries are Argentina, Australia, Canada and the United States which together supplied 81 per cent of the wheat exports during the five years 1963/1967. These countries do not normally import wheat but regularly produce wheat surplus to their domestic requirements for the export market.

The U. S. S. R., which is the world's largest wheat-producing country, is also a regular wheat-exporting country, being the traditional source of imported wheat required by countries of Eastern Europe. In 1963 and 1965, as a result of adverse weather, the U. S. S. R. was also the world's largest wheat-importing country. In 1966, exports from the U. S. S. R. made up nearly 11 per cent of the world export supplies as compared with 2 per cent in 1963. At the same time Russian imports of wheat had fallen to 1.5 million tons in 1967 as compared with nearly 9 million tons in 1963 and in 1965.

Although all members of the EEC except France are net importers of wheat, the EEC has become a consistent competitor on the export market, having provided annually between 6 and 12 per cent of the world wheat exports since 1957. Although other EEC countries export some wheat, France is the largest surplus wheat producer and is the main source of exports within the EEC group. At the same time all EEC countries are important traditional wheat-importing countries, drawing their supplies both from other EEC member countries and from countries outside the EEC.

Other countries which export wheat, including Sweden, Spain, Greece, Mexico, Bulgaria and Rumania, made up 4 per cent of wheat exported during the period 1963 to 1967.

Table V-1

EXPORTS OF WHEAT AND FLOUR BY EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	EEC Countries						U.S.S.R.	Others	Total
	Argentina	Australia	Canada	Total	Excluding Intra-trade	United States			
1957	2,114	1,656	8,592	3,877	3,152	10,966	3,909	1,388	32,432
1958	2,805	2,050	8,175	2,610	2,117	12,066	5,913	2,119	35,798
1959	2,144	3,164	7,527	3,007	2,286	13,843	5,530	1,548	36,753
1960	1,946	4,999	9,307	2,451	1,799	17,986	5,058	961	42,708
1961	2,377	6,277	9,938	3,141	2,323	19,536	5,052	1,146	47,467
1962	1,806	4,788	9,015	3,798	3,786	17,332	5,330	1,455	43,524
1963	2,777	7,813	15,088	4,375	3,776	23,099	1,282	1,959	56,393
1964	4,443	6,469	11,909	6,060	5,669	19,607	1,159	1,550	51,197
1965	7,948	5,681	14,833	6,266	5,838	23,398	2,201	2,160	62,487
1966	3,059	7,005	14,833	4,747	4,479	20,205	4,126	2,372	56,347
1967	1,367	7,011	8,902	5,518	4,350	20,491	5,084	3,611	50,186
1968	2,666	5,571	8,685	n.a.	4,681	15,018	5,332	3,122	45,075(1)

(1) Excludes intra-EEC trade.

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Export Competition for Wheat

The share of the wheat export market which each exporting country has supplied has varied considerably from year to year. The United States has been the major supplier with from 33 to 42 per cent of the market, followed by Canada whose share has varied between 20 and 26 per cent until 1967 when it fell to 17 per cent. Australia's share of the export market has increased from 5 per cent in 1957 to between 11 and 13 per cent during more recent years. Argentina, which has provided between 4 and 8 per cent of the import requirements during most of the last decade, had a share of nearly 13 per cent in 1965 but less than 5 per cent in 1967.

The Supply Situation

The composite wheat supplies in the five principal exporting countries and their disposition, as shown in Table V-2, indicate an increasing accumulation of stocks since 1965. A persistent increase in production in exporting countries during the last decade, as well as a falling-off of exports, have contributed to increased stocks in a highly competitive world market situation.

Table V-2

SUPPLY AND DISPOSITION OF WHEAT AND FLOUR IN FIVE EXPORTING COUNTRIES⁽¹⁾
AVERAGE 1958/1962; ANNUAL 1963 TO 1969

(Million metric tons)

	Average 1958/1962	1963	1964	1965	1966	1967	1968	(Estimated) 1969
Opening stocks	57.4	55.1	45.9	45.9	33.4	35.1	42.8	61.8
Production	83.6	93.4	101.7	97.1	103.7	103.8	113.2	109.3
Imports ⁽²⁾	5.4	5.0	3.8	4.3	4.0	3.7	4.7	3.9
Total supply	146.4	153.5	151.4	147.3	141.1	142.6	160.8	175.0
Domestic use	52.9	55.0	57.6	56.6	56.9	57.1	62.0	65.0
Exports ⁽²⁾	35.0	52.6	47.9	57.3	49.1	42.7	36.9	110.0
Closing stocks	58.5	45.9	45.9	33.4	35.1	52.8	61.8	110.0

(1) Argentina, Australia, Canada, the United States and EEC.

(2) Excluding intra-Community trade in EEC countries.

Source: Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

Production in the five principal exporting countries^{1/} amounted to 113 million metric tons in 1968, an increase of about 35 per cent over the average production during the 1958/1962 period. The joint exports of the group, which averaged 35 million tons during the 1958/1962 period, reached a peak of 57 million tons in 1965 but decreased to 37 million tons in 1968 (excluding intra-EEC trade). The resultant stocks had grown to about 62 million tons at the end of the 1968 crop year, as compared with 33 million tons at the end of 1965 and an average of 58 million tons for the 1956/1960 period (Table V-3). On the basis of a 1969 crop of 109 million tons, the estimated quantity available for export and carryover in 1969 is likely to amount to 110 million metric tons, as compared with the 1968 record of 99 million tons.

Table V-3

CLOSING STOCKS OF WHEAT IN PRINCIPAL EXPORTING COUNTRIES
1956 TO 1968

(Million metric tons)

	Argentina (Nov. 30)	Australia (Nov. 30)	Canada (July 31)	United States (June 30)	Total Four Exporting Countries	EEC (June 30)	Total 4 + EEC
1956	1.6	1.1	20.0	24.7	47.4	7.2	54.6
1957	1.4	0.4	17.6	24.0	43.4	6.4	49.8
1958	1.4	1.8	16.0	35.3	54.5	6.1	60.6
1959	1.2	1.7	16.3	35.7	54.9	5.4	60.3
1960	0.8	0.7	16.5	38.4	56.4	6.5	62.9
Average 1956/1960	1.3	1.1	17.3	31.6	51.3	6.3	57.6
1961	0.2	0.5	10.6	36.0	47.3	6.3	53.6
1962	0.5	0.6	13.3	32.5	46.9	8.2	55.1
1963	2.2	0.6	12.5	24.5	39.8	6.1	45.9
1964	3.3	0.7	14.0	22.3	40.3	5.6	45.9
1965	0.2	0.5	11.4	14.6	26.7	6.8	33.5
Average 1961/1965	1.3	0.6	12.4	25.9	40.2	6.6	46.8
1966	0.2	2.2	15.7	11.6	29.7	5.5	35.2
1967	1.0	1.4	18.1	14.7	35.2	7.6	42.8
1968	0.3	6.6	23.1	22.1	52.1	9.7	61.8

Source: Review of the World Grains Situation, op. cit.

^{1/} Argentina, Australia, Canada, United States and EEC.

Export Competition for Wheat

The record of the stocks of each of the four major exporting countries for the period 1956 to 1967 indicates a wide variation in national stock-holding policies and in the contribution which each country has made to the cost of maintaining reserves and holding stocks off the market for purposes of price maintenance (Table V-4). The record indicates that, generally speaking, Argentina and Australia have attempted to dispose of their wheat in the year in which it was harvested and have largely avoided responsibility for holding stocks. On the other hand, Canada and the United States have followed a policy of holding stocks, both to safeguard the import requirements of their customers and, in periods of market surpluses, to reduce the price-depressing effect of excess supplies on the market. On the basis of the year-end stocks of wheat as a percentage of the year's exports during the five years 1958/1962, Argentina and Australia maintained a reserve amounting to 36 and 26 per cent, respectively, of exports, while stocks held by Canada and the United States were 165 and 220 per cent, respectively, of their exports.

Table V-4

COMPARISON RATIOS OF WHEAT STOCKS TO EXPORTS FOR MAJOR WHEAT EXPORTING COUNTRIES
AVERAGE 1958/1962; ANNUAL 1963 TO 1968

(Stocks and exports - Million metric tons; Ratio - Per cent)

	Average 1958/1962	1963	1964	1965	1966	1967	1968
<u>Argentina</u>							
Closing stocks	0.8	2.2	3.3	0.2	0.2	1.0	0.3
Exports	2.2	2.8	4.4	8.0	3.1	1.4	2.7
Ratio	36.3	78.5	75.0	2.5	6.4	71.4	11.1
<u>Australia</u>							
Closing stocks	1.1	0.6	0.7	0.5	2.2	1.4	6.6
Exports	4.2	7.8	6.5	5.7	7.0	7.0	5.6
Ratio	26.2	7.7	10.8	8.8	31.4	17.1	117.8
<u>Canada</u>							
Closing stocks	14.5	12.5	14.0	11.4	15.7	18.1	23.1
Exports	8.8	15.1	11.9	14.8	14.8	8.9	8.7
Ratio	164.8	82.8	117.6	77.2	106.1	203.3	265.5
<u>United States</u>							
Closing stocks	35.6	24.5	22.3	14.6	11.6	14.7	22.1
Exports	16.2	23.1	19.6	23.4	20.2	20.5	15.0
Ratio	219.8	106.1	113.8	62.4	57.4	71.7	147.3
<u>Four Major Exporters</u>							
Closing stocks	52.0	39.8	40.3	26.7	29.7	35.2	52.1
Exports	31.4	48.8	42.4	51.9	45.1	37.8	32.0
Ratio	165.6	81.5	95.0	51.4	65.8	93.1	162.8

Source: World Wheat Statistics, op. cit., Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

On the basis of the years 1963 to 1967, it would seem that, as a result of an increase in production and limited export outlets, Argentina and Australia are holding more wheat stocks, while stocks in the United States have decreased. Apart from the period 1959 to 1963 when the accumulated stocks in the United States became excessive, Canada's contribution to stock holding has surpassed that of the United States.

Competitors in the Export Market

Argentina

Wheat Production and Disposition -- Argentina is one of the world's important producers and exporters of wheat as well as coarse grains and oilseed crops. The area in wheat was 5.8 million hectares in both 1967 and 1968, as compared with an average of 4.6 million for the five years 1949/1953 and 4.9 million for the five years 1954/1958. Production is estimated at 8.2 million metric tons in 1968 and 7.3 million in 1967. This compares with an average production during the two five-year periods, 1949/1953 and 1954/1958, of 5.4 and 6.5 million tons, respectively. Over the past four years, Argentina's exports of wheat have averaged almost four million metric tons, just equal to the amount used domestically. During the 10-year period 1949 to 1958, exports accounted for 40 per cent of the disposition of Argentina's wheat. Exports in 1967, however, amounted to only 1.4 million tons as compared with 2.2 million for 1966 and the record 6.4 million tons exported in 1964.

Argentina's stocks of wheat amounted to one million tons at the end of the 1967 crop season. Although Argentina has been adding to her storage facilities more recently, her practice has been to dispose of most of her crop soon after harvest and to keep stocks to a minimum. Stocks during the two five-year periods, 1949/1953 and 1954/1958, averaged 1 million and 1.5 million tons, respectively.

Export Competition for Wheat

Marketing Arrangements^{2/} -- The private trade operates actively in the marketing of Argentine grains and oilseeds, and the Government also plays a major role through the Junta Nacional de Granos, or "National Grain Board".

The National Grain Board has broader functions than the Canadian Wheat Board in that it is responsible for all grains and oilseeds and their products and, unlike the Canadian Wheat Board, operates for Government account, rather than as a producers' marketing agency. The Board of Directors is normally made up of nine members: a President nominated by the Secretary of Agriculture; four members appointed by the Secretaries of Agriculture, Trade, Finance and Transport; and four members representing the agricultural producers' associations, the co-operatives, the industry and the private grain trade.

The National Grain Board has four branches. The nerve centre of the Board is the "technical" branch, which is responsible for the formulation of all regulations regarding the production and marketing of grain and oilseeds and for the establishment and maintenance of quality standards. In addition, all aspects of the sale of grains and oilseeds are closely supervised by the technical branch.

The "commercial" branch, which works within the framework of regulations laid down by the technical branch, is the purchasing and sales agency of the National Grain Board. Funds for the Board's grain and oilseed purchases are provided by the Federal Treasury.

The "administration" branch handles the payment and other bookkeeping activities of the Board.

The "elevator" branch is responsible for the operation of the terminal elevators, all of which are owned by the Board. The Board also owns about 70 of the 1,000 country elevators in Argentina and these are also operated by the elevator branch. The elevator tariffs are generally sufficient to support the activities of this branch. The other operations of the Board, apart from the

^{2/} Based in part on an article by S. E. Kidd, "The Grain Marketing System in Argentina", Agriculture Abroad, October 1969.

Future Markets for Canadian Grains

purchasing activities of the commercial branch, are financed by a fixed export tax of 1 per cent on all export sales of grain and flaxseed.

Day to day prices for grains and oilseeds are established on the open market, rather than by the Board. There is also an active grain futures market in Buenos Aires. The Government, however, does establish minimum and support prices for the major grains and oilseeds each crop year. The higher support price is the level at which the National Grain Board is committed to purchase from producers. The industry and private trade may purchase at, but not below, the minimum price, which is established in relation to the cost of production. In practice, sales are seldom made below the support price.

In the past crop year (December 1, 1967 to November 30, 1968) the minimum and support prices for Grade 1 hard wheat, for example, were 1,300 and 1,500 pesos per 100 kilograms, respectively. However, the marketing expenses of the Board, other than transportation costs, amount to about 80 pesos per 100 kilograms and are paid by the Board rather than being deducted from the price paid to the producer. The Board also pays a similar amount to the private trade for the marketing expenses that they incur.

In the 1968 crop year, the minimum and support prices for Grade 1 hard wheat will be 1,450 and 1,650 pesos per 100 kilograms but the producer, rather than the Board, will pay the marketing expenses. Thus, the real increase in the support price will be only about 70 pesos rather than 150 pesos per 100 kilograms.

The Argentine grain producer may sell his crop to independent country buyers (acopiadores), or to the co-operatives. These sales are closely supervised as the details of each sale must be reported to the Board by the buyer. The larger producers may even sell directly to exporters and millers. It is the policy of the National Grain Board to stay out of the market as much as possible, although, depending on the level of prices and other marketing circumstances, they may be called upon to purchase on a large scale from time to time. The Board seldom deals directly with producers; their purchases are made from the acopiadores and co-operatives provided that they have paid at least the support price to the producer.

Export Competition for Wheat

The National Grain Board may sell in the export market, particularly when they have negotiated a bilateral agreement involving wheat. However, most export sales are handled by the private trade and even contracts negotiated by the Board are often turned over to private exporters. It is possible for the Board to exercise strict supervision over all grain export sales, as the Government has decreed that these sales be reported to the Board within 48 hours of shipment. In addition, the customs documents specifying the quantities, prices and destination of all grain shipments require the signature of officials of the Board.

There are two types of export taxes in Argentina on grain and oilseed sales: a variable "retention" tax and a series of five "fixed" taxes. Both the variable "retention" tax and the "fixed" taxes are levied on what are called the "base index" prices which are established for each type of grain and oilseed by the Argentine Department of Commerce. The base index price is directly related to the market price; for example, the current base index price for bread wheat of U. S. \$55.00 per metric ton was established in January on the basis of the prices which were expected to prevail on the world market during the remainder of the crop year. An interesting feature of the base index price is that the Central Bank has decreed that it is the least foreign exchange which can be brought into Argentina on an export sale. Thus, bread wheat, for example, must be sold for export for the equivalent of at least U. S. \$55.00.

The variable "retention" tax, in effect, establishes a special rate of exchange for grains and oilseeds. Thus, in 1967, when the peso was devalued from 250 to 350 pesos relative to the U. S. dollar, the application of a "retention" tax of 25 per cent brought the effective rate of exchange down to 262.5 pesos. The use of this tax was effective in forcing exporters to adjust their prices in keeping with the devaluation as well as in stabilizing grain prices on the domestic market. As shown in Table V-5, the present "retention" tax on most grains and oilseeds is only 18 per cent.

The "fixed" taxes currently total 5.3 per cent of the base index price on the export sales of most grains. This amount is made up of taxes of 1.5 per cent for INTA (National Technological Institute); 1 per cent for a road-building fund; 0.3 per cent for statistical services; 1.5 per cent for elevator construction programs; and, as mentioned above, 1 per cent for the National Grain Board.

Table V-5

 ARGENTINA: WHEAT AREA, SUPPLIES, DISPOSITION AND STOCKS
 AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

Crop Year Dec. 1 - Nov. 30	Area (Thousand hectares)	Stocks at				Production	Imports (Thousand metric tons)	Total Supply	Domestic Use	Exports	End of Year Carryover
		Beginning of Crop Year	End of Crop Year	End of Crop Year	End of Crop Year						
Average 1949/1953	4,618	1,057	5,375	42	6,474	3,299	2,125	1,050			
Average 1954/1958	4,910	1,587	6,514	--	8,101	3,853	2,700	1,548			
1959	4,378	1,425	5,837	--	7,262	3,666	2,404	1,192			
1960	3,599	1,192	3,960	--	5,152	3,308	1,083	761			
1961	4,198	761	5,100	--	5,861	2,888	2,730	243			
1962	3,438	243	5,697	--	5,940	3,580	1,856	504			
1963	5,676	504	8,940	--	9,444	3,748	3,483	2,213			
1964	6,135	2,213	11,260	--	13,473	3,730	6,403	3,340			
1965	4,593	3,340	6,079	--	9,419	3,705	5,539	175			
1966	5,214	175	6,247	133	6,555	4,108	2,202	245			
1967	5,812	245	7,320	--	7,565	5,198	1,367	1,000			
1968	5,800	1,000	5,900	--	6,900	6,334	2,666	300			

Source: World Wheat Statistics, op. cit.

Export Competition for Wheat

Australia

Wheat Production and Disposition -- The area in wheat in Australia increased every year except one since 1956 to reach a record of 10.5 million hectares in 1968, compared to an average of 4.5 million hectares for the five-year period 1949/1953 and 3.9 million hectares for the five years 1954/1958 (Table V-6).

Wheat yields in Australia are highly variable with the result that total production fluctuates widely from year to year. Production for 1968 is estimated at 13.8 million metric tons as compared with 7.5 million for 1967 and 12.7 million in 1966 from a considerably smaller acreage. Production during the two five-year periods, 1949/1953 and 1954/1958, averaged 5.2 and 4.4 million tons, respectively.

Australian exports of wheat in 1967 amounted to 7.0 million tons as compared with a record export of 8.5 million tons in 1966 and an average 2.7 million tons for the two five-year periods, 1949/1953 and 1954/1958. Domestic disappearance of wheat amounted to 1.5 million tons in 1967 as compared with about 2.5 million tons during each of the preceding three years and an average of 2.0 million for the two five-year periods, 1949/1953 and 1954/1958.

Stocks at the beginning of the 1968 crop year amounted to 1.2 million tons, compared with 2.2 million tons at the beginning of the 1967 crop year. As a result of the bumper crop in 1968, it is likely that stocks at the end of the current crop year will set a new high record.

Table V-6

AUSTRALIA: WHEAT AREA, SUPPLIES, DISPOSITION AND STOCKS
 AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

Crop Year Dec. 1 - Nov. 30	Area (Thousand hectares)	Stocks at		Production	Total Supply (Thousand metric tons)			Exports	End of Year Carryover
		Beginning of Crop Year	of Crop Year		Domestic Use	Domestic Use	Exports		
Average 1949/1953	4,472	745	745	5,200	5,945	2,054	2,733	1,158	
Average 1954/1958	3,882	1,800	1,800	4,415	6,223	1,907	2,670	1,646	
1959	4,937	1,780	1,780	5,402	7,182	2,167	3,367	1,648	
1960	5,438	1,648	1,648	7,449	9,097	2,129	6,298	6,770	
1961	5,958	670	670	6,727	7,397	2,059	4,842	496	
1962	6,665	496	496	8,353	8,849	1,999	6,222	628	
1963	6,667	628	628	8,926	9,554	2,106	6,896	552	
1964	7,252	552	552	10,038	10,590	2,659	7,268	663	
1965	7,088	663	663	7,067	7,730	2,522	4,755	453	
1966	8,205	453	453	12,700	13,153	2,437	8,527	2,189	
1967	9,191	2,189	2,189	7,550	9,739	1,328	7,011	1,400	
1968	10,520	1,400	1,400	14,700	16,100	3,929	5,571	6,600	

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Export Competition for Wheat

Marketing Arrangements -- Provision is made under the Wheat Stabilization Act of 1963 for the orderly marketing of wheat in Australia through the establishment of the Australian Wheat Board as a statutory monopolistic marketing authority. Growers are required to deliver to the Board all wheat grown by them except that retained for use on the farm where it is grown. The Board becomes the owner of the wheat but the actual handling is carried out by a bulk handling authority on behalf of the Board. The Board sells wheat in many markets and in many different ways. It operates an office in Tokyo and has an agent, the Australian Wheat Committee, in London. Most of its business west of the Suez is handled by the Australian Wheat Committee. In its sales to some countries, the Board negotiates directly with government purchasing agencies. In some markets, sales are handled by one or more of the big international grain houses.

The Act provides for the pooling of the returns from each crop and for a government-supported Wheat Industry Stabilization Plan which operates for a period of five years to protect growers against extreme year-to-year fluctuation in returns. The Commonwealth Government guarantee has been based on production costs determined by an economic survey carried out prior to the beginning of the Plan. In 1963, the guarantee amounted to 144.67¢ bulk basis f. o. r. Australian ports, and was adjusted for subsequent years in accordance with cost indexes as follows:

1964	--	145.83¢
1965	--	151.67¢
1966	--	155.0 ¢

The guarantee was paid to growers on up to 150 million bushels of wheat exported from each year's crop. The Plan is financed through a stabilization fund which draws its funds from a tax on the export of wheat, equivalent to the excess of the returns from export sales over the minimum return, but with a maximum tax rate of 15¢ per bushel. When the average export returns fall below the guaranteed price, the deficiency is made up by drawing on the Stabilization Fund up to 150 million bushels of wheat for each crop. When the fund is exhausted, the Australian Government meets its obligations under the guarantee.

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The Plan also established a home consumption price for the period of the Plan as follows:

1963	--	145.83¢
1964	--	146.67¢
1965	--	153.0 ¢
1966	--	156.5 ¢

A new Wheat Stabilization Plan to apply for five years beginning with the 1968 crop year has been negotiated. Major departure from the previous Plan, which has been in effect since 1963, relates to the guarantee price and the home consumption price. The guarantee price will apply to exports up to 200 million bushels of a crop in any season and will no longer be based on the cost of production concept. For 1968, it will be A\$1.45 per bushel f. o. b. vessel basis, which is 19¢ per bushel less than the f. o. r. price of the 1967 crop year. For subsequent years, the minimum price will be adjusted for any movements in the cash cost including interest paid, rail freight and handling charges. The home consumption price will be A\$1.71 (for wholesale sales of F. A. Q. bulk f. o. r. ports) for 1968. This is an increase of 5¢ over the 1967 price, and will be adjusted in subsequent years by the same amount as the guaranteed price.

Provision is made for a wheat research tax of one-quarter of a cent per bushel on all wheat delivered to the Board. This amount of money is matched by a contribution from the Commonwealth Government and is used to finance research on wheat. A contribution of \$10.5 million was made available to carry out research on wheat during the period 1956 to 1966 inclusive.

Wheat Grades -- Traditionally, Australia has been known as an exporter of soft "F. A. Q." (fair average quality) wheat but in recent years a wider range of wheats has been marketed. Each of the 11 wheat types is a distinct grade with characteristics which reflect its original origin. The names and description of the grades are as follows:

Queensland Prime Hard: a uniformly vitreous, free milling, high protein wheat producing a strong flour of good baking quality

N. S. W. Prime Hard: a uniformly vitreous, free milling, high protein wheat producing a strong flour of well balanced dough qualities

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South Australian Hard: a vitreous, good milling, relatively high protein wheat with well balanced dough qualities

Queensland F. A. Q. : a predominantly hard grain of good strength with medium protein content

N. S. W. Northern F. A. Q. : a predominantly hard grain of good strength with relatively high protein content

N. S. W. Southern/Western F. A. Q. : a predominantly soft wheat of moderate strength and medium protein content

Victorian F. A. Q. : a free milling, uniformly soft grain of low strength and medium protein content

South Australian F. A. Q. : a predominantly soft wheat of moderate strength and medium protein content

Western Australian F. A. Q. : a free milling, predominantly soft medium to low protein wheat

Western Australian Soft: a uniformly soft wheat with very low protein content

Victorian Soft: a uniformly soft, low protein biscuit wheat.

Standards for the grades of wheat marketed are established each year by Wheat Standard Committees in each state. In 1966, the proportion of wheat marketed falling into each class was as follows: Prime Hard, 8 per cent; Hard, 2 per cent; F. A. Q., 78 per cent; and Off-grade, 12 per cent.

Sales have tended to be on a c. i. f. basis, under which arrangements for ocean freight are chartered through the Shippers Chartering Committee which operates through the Baltic exchange in London. Sales are also made on an f. o. b. basis.

On April 30, 1969, the Australian Minister for Primary Industry announced in the House of Representatives that the Australian Wheat Growers' Federation had formulated a plan intended to bring wheat production to manageable levels. Under this plan, quotas would be imposed on deliveries in each state for

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the 1969 season amounting to a maximum of 357 million bushels for the Commonwealth. A first advance payment of A\$1.10 per bushel would be made on all wheat delivered to the Australian Wheat Board within the quota, to be financed by the Commonwealth Government up to a total of A\$440 million. In spite of the difficult storage situation and impending delivery quotas, indications are that Australian wheat acreage may be maintained at current levels in 1970.^{3/}

United States

Wheat Production and Disposition -- The area planted to wheat in the United States in 1967 was 23.9 million hectares (59 million acres), the largest since 1953, and 18 per cent higher than 1966 and the five-year averages for 1959/1963 and 1954/1958 (Table V-7). Production of wheat in the United States in 1968 matched the new record high of 1967 at 42.8 million metric tons.

As a result of a sharp increase in the use of wheat for feeding livestock, total domestic use of wheat in 1968 increased to 20.6 million tons as compared with 17.6 million in 1967.

Exports of wheat from the United States in 1968 were 14.8 million metric tons, the smallest in 10 years, and end-year stocks rose for the third consecutive year to 22.0 million metric tons.

Production of wheat in 1969 is projected at 38.4 million metric tons with about 38 million tons available for export and carryover as compared with 42 million in 1968.^{4/}

^{3/} Canada Department of Agriculture and Department of Industry, Trade and Commerce, Spot News from Abroad, Ottawa, No. 22, May 30, 1969.

^{4/} Economic Research Service, Wheat Situation, USDA, Washington, D. C., July 1969.

Table V-7

 UNITED STATES: WHEAT AREA, SUPPLIES, DISPOSITION AND STOCKS
 AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

Crop Year July 1 - June 30	Area (Thousand hectares)	Stocks at					Exports	End of Year Carryover
		Beginning of Crop Year	Production	Imports (Thousand metric tons)	Total Supply	Domestic Use		
Average 1949/1953	27,372	10,850	30,402	397	41,649	19,141	8,249	14,259
Average 1954/1958	20,124	26,091	29,064	221	55,376	16,368	10,949	28,059
1959	20,955	35,246	30,512	202	65,960	16,326	13,886	35,748
1960	21,002	35,748	36,939	224	72,911	16,490	18,015	38,406
1961	20,862	38,406	33,539	160	72,105	16,539	19,591	35,975
1962	17,620	35,975	29,718	151	65,844	15,844	17,480	32,520
1963	18,295	32,520	31,211	109	63,840	16,014	23,299	24,527
1964	20,138	24,527	34,928	30	59,485	17,500	19,731	22,254
1965	20,056	22,254	35,805	24	58,083	19,916	23,601	14,566
1966	20,181	14,566	35,699	46	50,311	18,539	20,205	11,567
1967	23,878	11,567	41,486	21	53,074	17,883	20,491	14,700
1968	22,383	14,700	42,741	--	57,441	20,323	15,018	22,100

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

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Marketing Arrangements -- The wheat acreage allotment for 1969 and for 1968 was fixed at 59.3 million acres compared with 68.2 million acres in 1967 and 51.6 million acres in 1966. Wheat prices in the United States have been supported at U.S. \$1.25 per bushel since 1965 by means of (1) non-recourse loans on the security of the wheat which can be redeemed by repayment of the loan plus interest, or allowed to lapse with transfer of the wheat as payment in full; or (2) sale of wheat not put under loan to the Commodity Credit Corporation. Prior to 1966, financial assistance was provided directly to private grain traders for commercial wheat exports through (1) a cash payment or export subsidy which was established each day; or (2) by selling the wheat acquired under support programs to traders at the world price.

Under the Food and Agriculture Act (1965), a co-operator in the program, who does not exceed his farm acreage allotment and carries out his obligation to put the required part of his land in soil conserving crops, receives the market price for that part of his wheat which is exported and 100 per cent of the parity price for the part which is used domestically. In 1966 and 1967, when there was no acreage diversion, co-operators received domestic marketing certificates for 45 and 35 per cent, respectively, of their projected production. In 1969, certificates are being issued on the projected production from the planted acreage up to 43 per cent of the farm allotment as compared with 40 per cent in 1968. In 1968, the parity price was \$2.63 per bushel and the value of marketing certificates was \$1.38. Part of the cost of marketing certificates is passed on to the consumer by requiring millers to purchase certificates at 75¢ per bushel for domestically consumed wheat.

Export Competition for Wheat

In summary, producers who comply with the 1969 program may receive as a minimum:

	<u>Return per Bushel</u> (\$U. S.)
(a) on all wheat sold -- the price of wheat sold in the open market as the guaranteed loan rate	\$1. 25
(b) on approximately 520 million bushels used domestically for food (43 per cent of allotment)	
(i) a certificate paid by millers and thus the consumer	\$. 75
(ii) a government subsidy equal to the difference between \$2. 00 and the U. S. parity price (\$2. 63 - \$2. 00)	<u>. 63*</u> \$1. 38
Average payment per bushel 43 per cent of \$1. 38 domestic certificate	<u>. 59</u>
Total	\$1. 84

Noncompliers receive only the open market price, thus their return is about 59¢ per bushel less than that received by a co-operating participant. Because of this wide spread in returns, about 85 per cent of the wheat acreage is in the program each year.^{5/}

The cost of wheat to the domestic wheat food processor is 75¢ per bushel over the market price, and is usually in excess of \$2. 00 per bushel. Livestock feeders pay only the market price for wheat, and its use in livestock and poultry feeds has increased from about 35 million bushels per year in the early 1960's to as much as 150 million bushels per year.

* Parity price for 1970 program established \$2. 77.

^{5/} Wheat Situation, op. cit., May 1969, p. 13.

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The wheat exporter pays the open market price but receives payment as necessary from the government to enable him to compete on export markets. When world prices are above the U. S. market price, the U. S. exporters pay an export tax. Commodity export payments on wheat in the 1967/68 fiscal year were \$164, 135. ^{6/}

Wheat is exported by the United States under cash dollar sales, credit dollar sales, and concessional programs largely under PL 480.

The cash dollar sales are normal commercial sales handled by private traders. These commercial sales make up about one-third of all wheat sales for export.

The credit dollar sales are sales from privately owned stocks for dollars on credit provided by the CCC at subsidized rates of interest. The usual period of the credit is six months but it may be up to three years. This form of sale is classified by the United States as "commercial" in reporting to the International Wheat Council.

In the last decade, about two-thirds of wheat exports have been under PL 480 (Table V-8). The most important program under PL 480 has been Title I which covered government-to-government agreements for sales paid for with local currencies. It is understood that a policy decision has been made to have local currency sales under Title I replaced by long-term dollar credit sales, formerly under Title IV.

Shipments of CCC-owned wheat are made under Title II as donations for direct assistance in cases of disaster or emergency relief and for economic development. Title II also includes donations through voluntary relief organizations and through the FAO/UN World Food Program.

Title III shipments are from CCC stocks and cover barter transactions for strategic materials used in U. S. foreign aid or for stockpiling purposes. The United States claims that barter transactions are commercial and has discontinued reporting them as special under the International Grains Arrangement.

^{6/} Commodity Credit Corporation, Report of Financial Conditions and Operations, USDA, Washington, D. C. , as of March 31, 1969.

Table V-8

EXPORTS OF WHEAT AND FLOUR UNDER GOVERNMENT-ASSISTED PROGRAMS; UNITED STATES, CANADA AND AUSTRALIA
1954 TO 1968

(Thousand metric tons)

	United States										Canada			Australia		
	Title I		Donations		Barter		Title IV		CCC Credit	Total	Donations Govt. to Govt.	Credit		Total	Donations Govt. to Govt.	Total
	Local Currency	Govt.	Emergency Relief	Farmers and Relief	Including Open-ended	PL 480	PL 480	Export Insurance				Guaranteed				
1954	2,575	26	435		1,264	--	--	--	4,300					22	22	
1955	4,335	77	324		1,815	--	--	--	6,551					--	--	
1956	7,191	319	332		2,965	--	--	--	10,207					23	23	
1957	5,723	490	389		258	--	--	--	6,860	841	79	--	--	920	5	5
1958	6,805	551	296		549	--	--	--	8,201	501	148	--	--	649	36	36
1959	8,543	660	292		693	--	--	--	10,188	226	133	--	--	359	21	21
1960	9,874	826	830		930	--	137	137	12,597	297	487	215	215	999	20	20
1961	10,387	955	700		1,125	198	139	139	13,504	196	335	2,262	2,262	2,793	276	276
1962	11,126	920	832		177	155	184	184	13,394	49	612	1,535	1,535	2,196	--	--
1963	10,574	821	1,018		957	331	167	167	13,868	79	827	1,224	1,224	2,130	--	--
1964	12,014	490	792		339	1,589	38	38	15,262	321	1,483	1,834	1,834	3,638	155	155
1965	10,273	915	915		1,243	2,151	363	363	15,860	817	566	2,235	2,235	3,618	195	195
1966	5,786	1,020	--		1,838	1,072	1,592	1,592	11,308	1,478	479	2,602	2,602	4,559	150	150
1967	1,467(1)	1,208	--		2,207	8,040(1)	721	721	13,643	691	223	1,467	1,467	2,381	187	187
1968	2,112(1)	1,257	--		1,377	3,414(1)	365	365	8,525	675	174	2,262	2,262	3,111	214	214

(1) Long-term credit now combined with local currency sales under Title I. Title IV discontinued.

Source: United States and Australia -- Review of the World Grains Situation, op. cit.
Canada -- Unpublished records, Grain Division, Department of Industry, Trade and Commerce.

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Title IV includes sales on long-term dollar credit.

The total cost of the U. S. wheat program for the 1968/69 fiscal year, including government payments and the payment for certificates by millers, was \$1.0 billion. ^{7/}

Grading -- U. S. wheat is graded in accordance with the provisions of the Official Grain Standards of the United States. The names and descriptions of the classes are as follows:

Hard red spring includes all varieties of hard red spring wheat and is divided into three subclasses:

- (a) dark northern spring: hard red spring wheat with 75 per cent or more of dark, hard, and vitreous kernels;
- (b) northern spring wheat: hard red spring wheat with 25 per cent or more but less than 75 per cent of dark, hard, and vitreous kernels; and
- (c) red spring wheat: hard red spring wheat with less than 25 per cent of dark, hard, and vitreous kernels.

Durum wheat includes all varieties of white (amber) durum wheat and is divided into three subclasses:

- (a) hard amber durum wheat: durum wheat with 75 per cent or more of hard and vitreous kernels of amber colour;
- (b) amber durum wheat: durum wheat with 60 per cent or more but less than 75 per cent of hard and vitreous kernels of amber colour; and
- (c) durum wheat: durum wheat with less than 60 per cent of hard and vitreous kernels of amber colour.

Red durum wheat includes all varieties of red durum wheat.

^{7/} Commodity Credit Corporation, op. cit.

Export Competition for Wheat

Hard red winter wheat includes all varieties of hard red winter wheat and is divided into three subclasses:

- (a) dark hard winter wheat: hard red winter wheat with 75 per cent or more of dark, hard, and vitreous kernels;
- (b) hard winter wheat: hard red winter wheat with 40 per cent or more but less than 75 per cent of dark, hard, and vitreous kernels; and
- (c) yellow hard winter wheat: hard red winter wheat with less than 40 per cent of dark, hard, and vitreous kernels.

Soft red winter wheat includes all varieties of soft red winter wheat.

White wheat includes all varieties of white wheat and is divided into four subclasses:

- (a) hard white wheat: white wheat with 75 per cent or more of hard kernels and may contain not more than 10.0 per cent of wheat of the white club varieties;
- (b) soft white wheat: white wheat with less than 75 per cent of hard kernels and may contain not more than 10.0 per cent of wheat of the white club varieties;
- (c) white club wheat: white wheat consisting of wheat of the white club varieties and may contain not more than 10.0 per cent of other white wheat; and
- (d) western white wheat: white wheat containing more than 10.0 per cent of wheat of the white club varieties and more than 10.0 per cent of other white wheat.

Mixed wheat includes mixtures of two or more classes of wheat.

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Grades of Wheat -- The following numerical grades and grade requirements apply for all classes of wheat:

Grade	Minimum Test Weight per Bushel		Maximum Limits of Defects					Wheat of Other Classes (1)			
	Hard	All	Heat Damaged	Damaged	Foreign	Shrunken & Broken	Defects	Contrast-	Wheat		
									Other		
	Spring	Other	Kernels	(Total)	Materials	Kernels	(Total)	ing	Other		
	(Pounds)		(Per Cent)							Classes	(Total)
1	58.0	60.0	0.1	2.0	0.5	3.0	3.0	1.0	3.0		
2	57.0	58.0	0.2	4.0	1.0	5.0	5.0	2.0	5.0		
3	55.0	56.0	0.5	7.0	2.0	8.0	8.0	3.0	10.0		
4	53.0	54.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0		
5	50.0	51.0	3.0	15.0	5.0	20.0	20.0	10.0	10.0		

(1) Red durum wheat of any grade may contain not more than 10.0 per cent of wheat of other classes.

Protein Inspection -- Inspection and certification of cargo wheat for protein content is carried out on application and in accordance with established procedures. The inspection certificate shows the protein content in terms of whole per cent and tenths of a per cent. Individual farmers may also arrange for protein testing and certification of all or part of their wheat.

France (EEC)

France accounts for about two-thirds of the wheat exports from the EEC countries and is the only EEC country which is a net exporter of wheat. As a result of high price supports, production has increased irregularly from an average of 9.4 million metric tons for the 1954/1958 period to 14.3 million tons in 1967 (Table V-9). About 80 per cent of shipments of wheat out of France are to non-EEC destinations. Most of the wheat imported into France is durum and comes from outside the Community.

Table V-9

SUPPLY AND UTILIZATION OF WHEAT IN FRANCE
AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

Crop Year July 1 - June 30	Imports		Exports		Stock Changes (Thousand metric tons)	Domestic Consumption (1)			Degree of Self- Sufficiency (Per cent)	
	Total	Excluding Intra-EEC	Total	Excluding Intra-EEC		Total	Food	Feed		Seed
Average 1949/1953	8,060	520	790			7,668			105	
Average 1954/1958	9,459	764	1,773			8,298			114	
1959	11,544	419	1,789	(1,279)	+ 850	9,324	5,510	3,077	737	124
1960	11,014	530	1,678	(1,125)	+ 357	9,509	6,047	2,739	723	116
1961	9,573	441	1,904	(1,277)	- 543	8,653	5,832	2,016	805	111
1962	14,054	684	3,083	(2,923)	+1,561	10,094	5,996	3,210	888	139
1963	10,249	817	2,756	(2,235)	- 996	9,306	5,788	2,718	800	110
1964	13,838	728	4,698	(4,102)	- 252	10,120	5,616	3,684	820	137
1965	14,760	774	4,844	(4,119)	+ 660	10,030	5,697	3,611	722	147
1966	11,297	714	3,130	(2,635)	- 954	9,835	5,449	3,609	777	115
1967	14,288	317	4,167	(3,266)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1968	14,842	486	n.a.	(486)	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

(1) Food, feed and seed estimated; data from various sources.

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

Exports of wheat from France and other members of the EEC are made possible by export rebates financed by the Community which may be set at a level which will enable exports from France to undercut the market (see Chapter IV, pp. 62-64).

Grading -- The French National Cereals Office (ONIC) recently announced that effective August 1, 1969, French wheat will be offered for export on world markets in four different classes, indicated by Roman numerals I to IV, each of which will be divided into four grades which will be designated by Arabic numerals 1 to 4.

The "Class" of wheat will serve as an indication of protein quantity and quality as determined by the Kjeldahl protein test and the Zeleny sedimentation test. The quality designations are as follows:

Class	Protein Content	(Zeleny)	Variety
		Sedimentation Value	
I	Over 13 per cent	Over 38	Must be indicated
II	Over 12 per cent	Over 30	Indication desirable
III	Over 10 per cent	Over 16	Indication desirable
IV	No minimum	No minimum	No indication required

Within each of the above classes, the following physical quality characteristics will be the basis for four grades:

Grade	Hectoliter Weight (Kg/hl)	Bushel ⁽¹⁾	Moisture Content	Non-grain Impurities (Per cent)	Broken Kernels and Other Grains	Maximum Other Grains	Falling Number (Hagberg)
		Weight (Approx.) (lb/bu.)					
1	over 77	over 61.75	under 16	under 0.5	under 4	1	150
2	over 76	over 60.93	under 16	under 0.5	under 5	1.5	150
3	over 75	over 60.12	under 16	under 0.5	under 6	2	120
4	over 74	over 59.30	under 16	under 1.5	under 7	3	120

(1) Not specified in French regulations.

U. S. S. R.

As indicated in Chapter IV, the U. S. S. R. is the world's largest wheat producer; production having averaged 91.3 million metric tons for the last three crop years 1966 to 1968. As a result of extremely high variability of yields associated with climatic conditions, production fluctuates widely from year to year. When supplies are surplus to domestic needs and to the import requirements of other bloc members, the U. S. S. R. is an important competitive factor in the export market. Much of the wheat grown in the U. S. S. R. is similar to U. S. hard winters but some also is in the hard red spring class and possesses very high quality.

Grading Standards -- The Soviet Government has set nationwide quality standards for cereals and flours. These standards are principally intended to establish approximate utilization values for the different types of cereals for the domestic consumer, but the standards are also used for export purposes.

The Soviet Union specializes in exports of vitreous quality wheats.

Classes and Grades -- I red spring wheat
II durum wheat
III white spring wheat
IV red winter wheat
V white winter wheat.

This classification is, as can easily be seen, rather similar to the basic classification of American wheats. Again similar to the American system, the Russians divide up each of the above-mentioned classes of wheat into five subclasses which are mainly differentiated by their respective proportions of vitreous kernels and by the relative darkness of their colour, e.g. "dark" red spring wheat as against the lighter-shaded varieties of red spring wheat.

Finally, each one of the subclasses is divided into "grades" according to the hectoliter weight of the wheat, its foreign material and impurities, and its moisture content.

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Inspection -- On the collectives and the state farms, the wheat is inspected just before the harvest in order to determine its type and variety. On the basis of that inspection, a first certificate is made out for the wheat at the time when the truck or the railcar carrying the wheat is leaving the farm. Subsequently, at each collection or storage point the wheat is inspected by an official grain inspector.

In order to obtain, in addition to external quality characteristics, an idea of the chemical and physical quality characteristics of the wheat, it is normal procedure at interior elevators to apply a type of "wet-gluten" test in which a meal ground from the entire wheat kernel is used instead of a flour of standard extraction as is done in North America and Western Europe.

The 5 or 6 per cent of total Soviet wheat production which ultimately will flow into export channels is selected by Exportkholeb at interior terminal positions. The wheat is then moved to export terminals where the State Grain Inspection once more certifies the class and grade of the wheat before it enters the terminal. In the terminal, the wheat undergoes the normal cleaning and, if necessary, drying processes. Maximum moisture content of export wheat is set at 14 per cent (usually it has a moisture content of approximately 12.5 per cent).

On leaving the export terminal, the wheat is sampled by automatic samplers and receives a final inspection. If the wheat is sold under a protein guarantee, a protein test is taken before loading. An inspection certificate, patterned on the Canadian "Certificate Final", is made out for all export grain, showing the grade and the weight of the wheat. Samples, taken from export shipments, are kept for a period of two months.

Quality Designations of Export Wheat -- With the exception of the hard spring wheat of the 100 series and the durum wheats, most of the wheat exported by the Soviet Union is comparable in quality to American hard winters. A group of four digits is used to designate the quality of the individual wheat parcel.

Export Competition for Wheat

The first number indicates the basic type of wheat:

- 1 red spring wheat
- 2 durum wheat
- 3 white spring wheat
- 4 red winter wheat
- 5 white winter wheat

The second number is supposed to express the quality of the wheat by indicating the subclass for which the wheat would qualify according to the subclass criteria of vitreousness and darkness of colour:

- 1 highest quality
- 2 lowest quality

The third digit indicates the "grade" of the wheat as set by moisture content, hectoliter weight, foreign material, etc.

- 1 highest grade
- 2 lowest grade

The fourth digit, usually placed after an oblique indicates the port of exportation.

Example: A parcel of wheat designated as 431/3 would, accordingly, be a straight-grade red winter wheat of a satisfactory milling and baking value, well-cleaned and of high hectoliter weight, exported from a terminal position designated as a number "3" on the Soviet schedule.

In addition to the traditional export-wheat classification described above, the Soviet Union has recently moved high quality wheat, under a new type of quality designation, into Western Europe. This consists of two or three capital letters preceding a two-digit number.

The letters are used to indicate the type of wheat and the region of origin; the figures, in their turn, show the guaranteed minimum percentage of protein (N x 5.7) on a 13.5 per cent moisture basis.

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Example: The Soviet wheat SKS 14 has recently been marketed in Western Europe on a large scale. The wheat, according to its lettering, is a red spring wheat, grown in Kazakhstan, and is sold with a guarantee of a minimum protein content of 14 per cent. In general, this wheat would correspond to the traditional classification number "121", except that the "121" wheat is not sold with a protein guarantee and its geographical origin would not be ascertainable.

Canada

Wheat Production and Disposition -- Wheat production in Canada reached an all-time high of 827 million bushels (22.5 million metric tons) in 1966 (Tables V-10 and V-11). This compared with an average of 664 million bushels (18 million tons) for the five years 1964/1968 and 507 million bushels (13.8 million tons) for the preceding five years. Production for the five years 1954/1958 averaged 443 million bushels (12.0 million tons), a reduction of about 100 million bushels (3 million tons) from the average for the postwar period 1949/1953.

The area seeded to wheat, which averaged 26.5 million acres (10.6 million hectares) in the 1949/1953 period, was reduced to an average of 22.9 million acres (8.7 million hectares) in the 1954/1958 period. Increasing sales of wheat to the U. S. S. R., the Eastern European countries and Mainland China in the early 1960's gave rise to increased acreages in wheat, which averaged 25.7 (10.4) and 29.4 million acres (11.9 million hectares), respectively, for the 1959/1963 and 1964/1968 periods.

Domestic use of wheat in Canada varies between 150 and 160 million bushels per year (4.0 to 4.4 million tons). Of this amount, some 40 to 45 per cent is processed either into flour for bread and other food products or into processed feeds. The balance, 55 to 60 per cent, is used for feed or seed on farms and does not, in general, enter commercial trade channels.

The export trade, providing an outlet annually for two-thirds to three-quarters of Canada's wheat, is crucial to the economic welfare of western wheat producers. Exports of wheat and flour, which averaged 293 million bushels (8 million tons) wheat equivalent in the postwar 1949/1953 period, declined to an average of 288 million bushels (7.8 million tons) in the five years 1954/1958.

Table V-10

CANADA: WHEAT AREA, SUPPLIES, DISPOSITION AND STOCKS
AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

	Area (Thousand hectares)	Stocks at				Imports (Thousand metric tons)	Total Supply (Thousand metric tons)	Domestic Use	Exports	End of Year Carryover
		Beginning of Crop Year	Production	Exports	Domestic Use					
Average 1949/1953	10,629	5,466	14,818	3	20,287	4,051	7,961	8,275		
Average 1954/1958	8,742	16,966	12,057	2	29,024	4,369	7,857	16,799		
1959	9,906	16,003	12,113	T	28,116	4,251	7,547	16,318		
1960	9,918	16,318	14,108	T	30,426	4,269	9,614	16,543		
1961	10,245	16,543	7,713	T	24,256	3,869	9,744	10,643		
1962	10,852	10,643	15,392	T	26,035	3,755	9,019	13,261		
1963	11,156	13,261	19,689	T	32,950	4,265	16,181	12,504		
1964	12,013	12,504	16,341	T	28,845	4,008	10,875	13,962		
1965	11,445	13,962	17,661	--	31,623	4,270	15,919	11,434		
1966	12,016	11,434	22,516	--	33,950	4,313	14,024	15,613		
1967	12,190	15,613	16,137	--	31,750	4,648	8,902	18,200		
1968	11,907	18,200	17,685	--	35,885	4,100	8,685	23,100		

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table V-11

CANADA: WHEAT AREA, SUPPLIES, DISPOSITION AND STOCKS
 AVERAGE 1949/1953, 1954/1958; ANNUAL 1959 TO 1968

	Area Sowed (Million acres)	Stocks Beginning of Year	Production	Total Supply	Disposition			Stocks End of Year
					Domestic Use		Exports of Wheat and Flour	
					Farm (Commercial)	(Million bushels)		
Average 1949/1953	26.5	201	545	746	87	62	293	304
Average 1954/1958	22.9	623	443	1,066	96	64	288	618
1959	24.5	588	444	1,032	90	66	277	600
1960	24.5	600	518	1,118	92	64	353	608
1961	25.3	609	283	892	83	59	358	391
1962	26.8	391	566	957	83	55	331	487
1963	27.6	487	724	1,211	91	66	594	459
1964	29.7	459	601	1,060	81	67	400	513
1965	28.3	513	649	1,162	85	72	585	420
1966	29.7	420	827	1,247	84	71	515	577
1967	30.1	577	593	1,170	99	69	336	665
1968	29.4	668	650	1,315	96	67	304	948

Source: Canadian Wheat Board, Annual Reports.

Export Competition for Wheat

As a result of growing sales of wheat and flour to the Soviet Bloc countries and to Mainland China, average exports increased to 383 million bushels (10.4 million tons) during the five years 1959/1963 and to 429 million bushels (11.7 million tons) for the five years 1964/1968. A major factor in these increased exports has been the large sales to the U. S. S. R. in 1963, 1965 and 1966 to make up a temporary deficit resulting from severe drought. Following exports which averaged 524 million bushels (14.2 million tons) for the four years 1963 to 1966, exports for 1967 and 1968 have dropped back to the 300-330 million bushel (9 million tons) level which prevailed prior to the large Soviet purchases.

Without a comparable reduction in wheat acreage, and with high yields, end-year stocks of wheat rose to a record high of 668 million bushels (18.2 million tons) at July 31, 1968 and are likely to be about 848 million bushels (23.1 million tons) at the same date in 1969.

Marketing Arrangements -- In 1935 the Canadian Wheat Board was established with responsibility for marketing wheat and certain other grains produced in Western Canada.

The Canadian Wheat Board Act provides for the constitution and powers of the Canadian Wheat Board, which exercises, on behalf of producers, monopolistic controls in the marketing of wheat, and of oats and barley, grown in the provinces of Manitoba, Saskatchewan and Alberta, and in the Peace River District and other designated parts of the province of British Columbia. The present Wheat Board system of marketing grain developed over a lengthy period and has resulted from a number of main influences. These influences include the early and continuing interest of producers in improving their marketing procedures and achieving a greater measure of price stability, as evidenced by the important role of co-operative enterprise in grain marketing, as well as the part played by the government in ensuring quality standards and in exercising monopoly control of grain marketing during periods of emergency.

The Canadian Wheat Board Act was passed in 1935 but has been amended extensively since that time. The Act provides for a Board, as a body corporate consisting of from three to five

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commissioners appointed by the Governor in Council, which has as its objective the "marketing in an orderly manner, in inter-provincial and export trade, grain grown in Canada".

The Board does not own any marketing facilities but enters into handling agreements, covering handling and storage charges, each year with owners of country elevators and terminal elevators, and appoints private grain firms as its agents.

Initial payments in respect of the basic grades of wheat, oats and barley are established annually by the Government. The Board establishes the initial payment for other grades in relationship to the payments established for the basic grades. Such initial payments are guaranteed by the federal government and thus represent a support or floor price.

The Board buys all wheat, oats and barley delivered by producers at country elevators and pays for it on the basis of initial payments, less the handling charge which has been negotiated by the Board. Producers also receive a certificate, indicating the number of bushels of each grade delivered. This certificate entitles the producer to share in the equitable distribution of the surplus returns over operating costs from the sale of each grain delivered during a pool period, for which separate accounts are maintained.

Cash advances on the security of grain held on farms may be made by the Canadian Wheat Board under the authority of the Prairie Grain Advance Payments Act, repayment being made by deductions from the initial payment on grain delivered subsequent to the loan.

Grain delivery quotas are established by the Board from time to time throughout the season for different shipping points, as a means of allocating delivery opportunities among producers as equitably as possible during periods when there is not sufficient space available in country elevators to take delivery of all the grain which they may wish to market.

A permit book is issued to each producer each year, which sets out the acres in the different crops and in summerfallow on his farm and calculates the number of "specified" acres on the farm in accordance with an established formula.

Export Competition for Wheat

Following the completion of a "unit" quota which provides an equal opportunity for all permit-book holders to deliver a fixed quantity of grain early in the season, delivery quotas are established on the basis of a certain number of bushels per "specified" acre on each farm.

The control of grain movement from country elevators to terminal positions at the Lakehead, Pacific Coast ports, Eastern Canada and interior and domestic mills is exercised by the Board through the issuance of shipping orders to the various elevator companies, based on the percentage of grain receipts obtained at their elevators during the preceding 12-month period. The railway companies are advised by the Board of all shipping orders issued as a basis for the distribution of boxcars.

The cost of storage is paid by the Board according to a rate negotiated annually. Such storage costs are a charge against producer returns from the sale of grain, except that in accordance with the Temporary Wheat Reserves Act (1965) the Federal Government pays the Board, for the benefit of producers, an amount equal to the carrying charge paid by the Board on the number of bushels in storage at August 1, in excess of 178 million bushels.

Wheat Board agents are appointed from among the grain trade, shipping and exporting firms to actually sell the grain, although the merchandising function, particularly in the case of wheat is a combined and complex operation, also involving the Board and its overseas offices, the railways, lake steamship companies, the Trade Commissioner Service of the Department of Trade and Commerce, and in some instances the Government of Canada. In cases where a foreign government prefers, it may deal directly with the Board in purchasing grain but in such cases the agents usually are involved in contracts which are supplementary to a master sales agreement.

Wheat, oats and barley are offered for sale for export by the Canadian Wheat Board, either through its agents or on the basis of a direct agreement between the Board and the foreign government or a government agency as purchaser of the grain. The Board sets its selling price for various grades of wheat daily. Wheat is quoted for export basis in store Fort William/Port Arthur, Churchill and Vancouver terminal positions, and c. i. f. Atlantic,

Future Markets for Canadian Grains

St. Lawrence, Baie Comeau, Seaway and Lake Ports, and separate prices may be established for each of these positions at the same time. Sales of wheat for domestic use are made at the same price as for export, except that a minimum price of \$1.95½ per bushel for No. 1 Manitoba in store Fort William/Port Arthur applies to wheat for domestic milling. There is no wheat futures market in Canada.

The Board's operations relating to the marketing of oats and barley are less extensive than those relating to wheat. These two grains are sold in store at the terminal elevators at Fort William/Port Arthur and Vancouver. Oats and barley are marketed either on a cash basis at prices quoted daily by the Board or on the basis of trading in futures on the Winnipeg Grain Exchange. The Board does not control the movement of coarse grains from the Lakehead to Eastern Canada and the private trade is solely responsible for the movement of oats and barley out of Fort William/Port Arthur and Vancouver.

The Canadian Wheat Board's general pricing policy permits the use of a deferred pricing policy on export sales of wheat at the discretion of the purchaser. Since there is no futures market for wheat in Canada, this measure lends flexibility to the Board's pricing and provides a degree of hedging for the buyer. Under this policy, settlement may be made at prices prevailing on any day, up to the maximum number indicated below, after the final delivery date of the contract for the respective ports of shipment.

(a) After date of calling

Fort William/Port Arthur	14 market days
Georgian Bay ports	13 market days
Goderich, Sarnia and Walkerville	12 market days
Fort Colborne, Humberstone	11 market days
Toronto	10 market days
Kingston, Prescott	9 market days
Churchill	9 market days
St. Lawrence and Canadian Atlantic ports	8 market days
Fort William/Port Arthur to Prescott	8 market days

(b) After date of completion of loading

For exports out of Pacific coast ports the period is conditioned by the destination. For destination west of the Panama Canal but including South America, Central America and the Caribbean areas, up to 15 market days. For areas east of the Panama Canal, with the exception of South America, Central America and the Caribbean areas, up to 22 market days after date of completion of loading.

An "accounting price" is established at the time of call or delivery but the final price may be fixed by the purchaser within the time limits set out above. If the purchaser does not declare his option prior to the expiry date, the market price prevailing on that date is automatically used in finalizing the sale.

Since 1952, payment for Canadian cereals exported on credit has been insured by the Export Credits Insurance Corporation, under Section 21 of the Act, with the specific authorization of the Federal Government. The terms of credit, which have been amended from time to time, have recently been made more flexible and more generous. Credit facilities are now extended to 39 developing countries. The credit terms will be set as appropriate for particular markets and may extend in some cases to a maximum of three years. The insurance premium is reduced to 0.125 per cent per year and payment requirements are flexible. Provision is made in certain markets to make available more lenient credit provisions, including the subsidization of interest rates. In addition, the Canadian Wheat Board sells to Mainland China and East Germany on credit terms of 25 per cent cash and the balance in 18 months with a direct Canadian Government guarantee.

Control of imports into Canada of wheat, wheat flour, oats and barley, and certain of the primary manufactured products derived therefrom, is vested in the Board and imports are subject to licence issued by the Board.

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The schedule of Canadian Wheat Board payments for pool account years 1945 to 1966, on the basis of No. 1 Manitoba Northern, which is presented in Table V-12, shows the limited degree of government involvement in providing a support price for wheat through the guaranteed initial payment.

Table V-12

SCHEDULE OF CANADIAN WHEAT BOARD PAYMENTS FOR NO. 1 NORTHERN WHEAT
BASIS IN STORE FORT WILLIAM/PORT ARTHUR OR VANCOUVER
POOL ACCOUNT YEARS 1945 TO 1969

(Dollars per bushel)

Pool Account	Initial Payment	Adjustment Payment	Interim Payment	Final Payment(1)	Total Realized Price(1)
1945	1.25	.50	--	.084	1.834
1946	1.35	.40	--	.084	1.834
1947	1.35	.40	--	.084	1.834
1948	1.55	.20	--	.084	1.834
1949	1.75	--	--	.084	1.834
1950	1.40	.20	--	.258	1.858
1951	1.40	.20	--	.236	1.836
1952	1.40	.20	.12	.099	1.819
1953	1.40	--	.10	.064	1.564
1954	1.40	--	.10	.151	1.651
1955	1.40	--	.10	.109	1.609
1956	1.40	--	.10	.088	1.588
1957	1.40	--	.10	.121	1.621
1958	1.40	--	.10	.096	1.596
1959	1.40	--	.10	.090	1.590
1960	1.40	--	.10	.295	1.795
1961	1.40	.10	--	.410	1.910
1962	1.50	--	--	.374	1.874
1963	1.50	--	--	.474	1.974
1964	1.50	--	--	.387	1.887
1965	1.50	--	--	.497	1.997
1966	1.50	--	--	.487	1.987
1967	1.70	--	--	.114	1.814
1968	1.70	--	--		
1969(2)	1.50				

(1) Final payment and final realized price after deduction of Board operating costs, but prior to deduction of PFAA Levy.

(2) Pool account not closed out at date of report.

Source: Canadian Wheat Board, op. cit.

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Grading and Handling of Wheat -- With the passage of the Canada Grain Act of 1912, the Board of Grain Commissioners was established to maintain strict grade standards and control the movement of grain, with the dual purpose of maintaining the competitive position of Canadian grain in world markets and upholding the interests of the producer and the merchandiser. The Act was revised in 1925 and in 1930. It has jurisdiction over the grading and weighing of grain, the deduction made for dockage and shrinkage, elevator shortages or overages, the deterioration of any grain during storage or treatment, and the refusal or neglect of any person to comply with the provisions of the Canada Grain Act. On a fee basis the Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts. The fees received generally cover the cost of inspection, grading and weighing. It licenses annually all operators of elevators in Western Canada and of elevators in Eastern Canada that handle western grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers. The Board also manages and operates the Canadian Government Elevators, as well as maintaining a research laboratory and a statistics branch.

There are two sets of terminal grain elevators owned by the federal government. One group, which is known as the Canadian Government Elevators and is under the direction of the Board of Grain Commissioners for Canada, comprises five interior terminal elevators located at Moose Jaw, Saskatoon, Calgary, Edmonton and Lethbridge and one terminal elevator at Prince Rupert. The first elevator in this series was constructed in 1913 at Port Arthur and was sold in 1962 to a private company. Other terminals, which were constructed at seaboard at Vancouver and Halifax in 1916 and 1924, respectively, subsequently became part of the National Harbours Board system. The first two interior elevators were constructed in 1914, followed by others in 1915, 1924 and 1931. The reasons given in the Board's 1913 Report for constructing interior terminals were:

- (a) to provide inspection and terminal facilities closer to the producer and thus enable him to secure better returns;
- (b) grain stored at interior terminals could be routed directly in final inspection and clean condition to any of the three principal shipping locations;

Future Markets for Canadian Grains

- (c) they would be a source of supply for western mills and thus foster the development of a western milling industry; and
- (d) they would provide an interior storage reservoir against production or transportation emergencies, and would even out seasonal fluctuations in grain shipping by making use of the western route when navigation was closed on the Great Lakes.

The present capacity of the five interior elevators is 17.1 million bushels. The capacity of the terminal elevator at Prince Rupert is being increased from 1.25 million bushels to 2.25 million bushels.

The National Harbours Board operates terminals at Churchill (capacity 5 million bushels), at Port Colborne (capacity 3 million bushels), at Prescott (capacity 5.5 million bushels), at Montreal (capacity 22.2 million bushels) and at Halifax (capacity 4.2 million bushels), with a total capacity of 40 million bushels. The Board also owns three terminal elevators at Vancouver with a capacity of 9.4 million bushels, which are leased. A summary of the number and capacity of all licensed elevators by province and class of licence is shown in Table V-13.

The grading and inspection of grain is carried out under the direction of the Board of Grain Commissioners. When farmers deliver their grain to country elevators on the Prairies it is given a grade by the elevator agent. When the farmer and elevator agent fail to agree on the grade, a sample is taken in the presence of the farmer and forwarded to the inspector in charge of an inspection point. The decision of the inspector with respect to grade is final, subject to appeal under prescribed conditions to the Grain Appeal Tribunal established by the Board. The Tribunal reviews the decision of the inspecting officer and assigns the final grade to the grain in question.

Table V-13

LICENSED ELEVATORS: NUMBER AND CAPACITY, BY PROVINCE AND CLASS OF LICENCE
AT AUGUST 1, 1967

(Capacity of elevators - Thousand bushels)

	Kind of Elevator												Total Capacity			
	Public Country		Private Country		Semi-public		Private		Terminal		Mill			Eastern		
	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity	No.	Capacity		No.	Capacity	No.
Manitoba	645	49,048.6			1	5,000.0	2	3,602.8	5	2,083.7					653	59,735.1
Saskatchewan	2,775	207,620.6			2	11,000.0			4	3,231.5					2,781	221,852.1
Alberta	1,587	128,716.6	2	80.0	3	6,100.0	1	1,490.0	9	3,971.9					1,602	140,358.5
British Columbia	23	2,771.0			9	24,846.5			1	18.3					33	27,635.8
Ontario	2	1,439.0			23	104,947.2	2	2,973.9	3	1,480.0	17	55,660.0			47	165,906.1
Quebec													10	59,470.0	10	59,470.0
Maritimes													4	7,229.3	4	7,229.3
Total	5,032	389,595.8	2	80.0	38	151,293.7	5	8,066.7	22	10,785.4	31	122,365.3	5,130	682,186.9		

Source: Annual Report of the Board of Grain Commissioners for Canada.

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As grain moves to terminals or mills, an unofficial loading sample taken by the agent who loads the boxcar is placed inside and accompanies the car for grade checking purposes. When the boxcar is unloaded at the terminal elevator, an official sample is taken by an automatic sampler consisting of a small metal cup dipping into the grain as it is transferred by a belt conveyor. This sample is graded by the Board of Grain Commissioners inspector who has his laboratory at the elevator. All grain is cleaned before leaving the terminal and the utmost care is taken to safeguard the quality of the grain until it is loaded on board ship. Shipments out of terminal elevators are similarly sampled continuously by automatic samplers in the conveyor system or from the hold of a vessel to ensure that the grain is equal to or better than the minimum requirements of the grade specified. When the grade of a shipment from a terminal elevator has been established, the Board of Grain Commissioners issues a "Certificate Final", which goes with the shipment to its final destination as the basis and guarantee of quality.

The Canada Grain Act requires that wheat of the higher grades may only be binned with wheat of the same grade and that wheat in the terminal is not transferred from a lower grade to a higher grade. Special binning of selected wheat for any buyer is also prohibited. These controls are designed to ensure that shipments of any grade to any buyer will be very close to the average of the grade.

Before an ocean vessel is loaded for export, the Port Warden must issue a certificate that the cargo space is fit to receive grain and the Plant Protection Division of the federal Department of Agriculture must certify that the vessel is free from insects capable of infesting stored grains.

Before the beginning of each crop year, the Board must appoint a representative and highly qualified Committee on Grain Standards to establish standard samples. As soon as possible after August 1, the Board collects samples of the new crop and from these, prepares tentative standard samples of the statutory grades and other commercial grades as required. After reports on the milling and baking qualities have been obtained, the Grain Standards Committee is convened. The standard samples established by the

Export Competition for Wheat

Committee represent the minimum of each grade for that year. The Committee further prepares, under even more rigid conditions, standard export samples of the first nine statutory grades and of all commercial grades considered advisable.

The basic quality of Canadian grain production is secured and maintained through the licensing of varieties for seed. Most basic plant breeding for new varieties is carried out by the federal Department of Agriculture in research stations across Canada and by universities. No hard red spring wheat varieties are licensed unless they are judged equal to or better than Marquis, an excellent variety of wheat produced at the turn of the century, using 10 basic criteria associated with milling and baking requirements. Similarly for the other grains, basic standards of quality are used for the approval of new varieties. These criteria are aside from improvements looked for in better varieties such as freedom from rust, disease resistance, high yields, shorter growing season and so forth.

The main factors on which the actual grading of grains is based are: moisture; bushel weight; total foreign material, including other cereal grains; grain of classes other than the type being graded; and soundness of grain. Other than moisture and bushel weight which require testing and measuring, the grading is based on visual inspection. This visual inspection has been developed during a period of many years and is undertaken with the aid of such special equipment and guides that the margins by which each grade is specified are quite narrow. For example, Western Canadian red spring wheat is graded on a number series with the highest standards for No. 1 and with a larger tolerance of foreign material and other wheats as the grade gets lower (Table V-14).

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Table V-14

GRADE STANDARDS FOR EXPORT WHEAT

Grade	Test Weight per Bushel (Pounds)	Total Foreign Materials		Wheats of Other Classes & Varieties	
		Other Cereal Grains	Other Seeds	Not Equal to Marquis (Per cent)	Contrasting Classes
No. 1 Manitoba Northern	64.1	0.15	0.05	0.2	0.1
No. 2 Manitoba Northern	62.7	0.30	0.15	1.5	0.2
No. 3 Manitoba Northern	61.4	0.45	0.15	6.0 (4.0) ⁽¹⁾	0.5
No. 4 Manitoba Northern	60.4	0.65	0.15	(5.0) ⁽¹⁾	
No. 5 Wheat	59.4	0.80	0.15	(7.5) ⁽¹⁾	2.5 ⁽²⁾

(1) Wheats of other classes.

(2) Durum.

In addition to those described in Table V-14, there are three grades of Canada Western garnet, six of Canada Western amber durum, four of Alberta winter. The care with which wheat is graded is brought out by the definition of the lowest grade, No. 6 wheat; minimum bushel weight, 51 pounds; any variety of spring or winter wheat excluded from the higher grades on account of frosted or otherwise damaged kernels; maximum foreign material other than wheat including cereal grains, about 3 per cent; and maximum limit of durum wheat, 6 per cent.

Prices

Wheat is not a highly uniform, homogeneous commodity, but varies widely in its characteristics. This variation extends all the way from the extremely hard highly vitreous durums from which semolina is milled for use in the pasta industry, through the high protein hard springs and hard winters which traditionally have commanded a premium for blending in the milling of flour for use in bread-making, the medium wheats used as "filler" in bread-making, and the soft wheats. Just as durums are specialty wheats for use in the pasta industry, so also the soft wheats are specialty wheats for use in the making of biscuits and cakes. Since over

Export Competition for Wheat

75 per cent of the wheats produced in the world are soft wheats, a large proportion is used for bread particularly in the countries in which produced, even though they are inferior to hard wheats for this use. The increasing use of wheat for livestock feeding has also stimulated the movement of soft wheats in international trade.

This variation in wheat is reflected in the breakdown of wheat exports according to the different types and by country of destination classified by economic groupings as developed, developing, and centrally planned, for the period 1956 to 1966 (Table V-15). This Table shows a relatively large increase in total trade; a small increase in hard springs; a small decrease in hard winters; a relatively unchanged level of medium hards; and a large increase in trade in soft wheats. Within the developed group of countries, sales of hard springs have declined, hard winters and medium hards have both fluctuated widely, and soft wheats have increased considerably.

This increase in the movement of soft wheats in world trade is primarily a reflection of the composition of supplies available for export rather than particular market preference. These increased supplies of soft wheats have resulted from increased production in Australia, in the EEC, and in a number of other traditional importing countries which offer for export, often with the aid of subsidies, wheat surplus to their domestic needs.

The developing countries have shown some increase in recent years in imports of both hard springs and hard winters but the greatest increase has occurred in soft wheats.

Exports of hard springs to the centrally planned countries have expanded as a result of the dramatic increases in shipments from Canada to the U. S. S. R. and to Mainland China.

Because of their special characteristics and their special role in the manufacture of wheat products, the market prices of the different wheats have varied widely, thus reflecting their relative scarcity or abundance in relation to the respective demand for each particular type.

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Table V-15

WHEAT EXPORTS BY TYPE OF WHEAT AND ECONOMIC GROUPINGS

(Million metric tons)

	Durum	Hard Springs	Hard Winters	Medium Hard	Soft	Total
<u>Developed countries</u>						
1956	.91	7.61	3.12	2.11	3.56	17.32
1957	.77	7.03	1.34	1.79	2.64	13.57
1958	.69	6.25	1.37	2.34	3.04	13.69
1959	.73	5.61	1.05	1.71	2.63	11.74
1960	1.23	6.05	2.96	1.98	3.61	15.83
1961	.50	5.57	2.88	2.24	5.99	17.18
1962	.63	4.72	1.46	2.14	4.27	13.22
1963	.57	5.90	2.35	0.67	6.04	15.53
1964	.60	4.64	1.72	2.10	5.12	14.18
1965	1.12	5.18	4.01	1.37	4.98	16.66
1966	1.28	5.18	2.98	1.17	4.86	15.47
<u>Developing countries</u>						
1956	.16	3.31	1.84	2.07	1.93	9.30
1957	.13	3.20	2.56	1.35	1.56	8.80
1958	.03	3.07	3.81	2.15	1.21	10.26
1959	.07	4.26	4.40	1.23	2.82	12.79
1960	.11	4.69	5.81	1.17	3.41	15.19
1961	.12	1.14	7.46	1.34	4.59	14.65
1962	--	1.39	7.51	1.57	4.02	14.49
1963	.05	1.60	8.84	1.05	3.84	15.38
1964	--	1.47	10.32	1.75	5.76	19.30
1965	.25	3.11	10.42	2.21	4.75	20.74
1966	.46	4.77	5.20	2.51	7.96	20.90
<u>Centrally planned countries</u>						
1956	.01	.26	--	3.16	.02	3.44
1957	--	.44	.11	3.08	.51	4.14
1958	.03	.32	.10	4.10	.15	4.70
1959	--	.13	.44	4.37	.32	5.26
1960	.02	.81	.71	3.11	.48	5.12
1961	--	2.56	.44	3.51	2.21	8.72
1962	--	2.13	.36	3.43	3.99	9.91
1963	.81	7.41	1.67	2.33	7.06	19.28
1964	.53	3.32	.02	1.74	5.52	11.13
1965	.47	7.30	--	6.57	6.39	20.73
1966	.26	5.37	1.37	2.90	3.84	13.74
<u>Total exports</u>						
1956	1.07	11.18	4.96	7.34	5.51	30.06
1957	.90	10.68	4.02	6.22	4.70	26.51
1958	.75	9.64	5.28	8.60	4.40	28.66
1959	.80	10.00	5.89	7.32	5.77	29.78
1960	1.35	11.54	9.48	6.26	7.50	36.14
1961	.62	9.27	10.78	7.09	12.80	40.56
1962	.63	8.24	9.33	7.14	12.30	37.64
1963	1.43	14.90	12.87	4.06	16.92	50.18
1964	1.13	9.41	12.06	5.58	16.40	44.58
1965	1.84	15.59	14.44	10.15	16.10	58.12
1966	2.00	15.33	8.32	6.58	16.54	48.77

Source: G. A. Hiscocks, "An Analysis of World Wheat Exports by Types of Wheat", Canadian Farm Economics, Economics Branch, CDA, Vol. 3, No. 4, October 1968.

Export Competition for Wheat

Wheat, being a basic staple food commodity in much of the world, has a low elasticity of demand, especially in the developed countries. Accordingly, a decrease in prices of wheat is unlikely to greatly increase the volume consumed or to clear the market of surpluses unless prices drop to a point where wheat is competitive with feed grains and larger quantities are utilized in the feed compounding industry. This would only have its full effect under conditions of an expanding market for feed grains.

Postwar wheat price movements, though reflecting the supply and demand for wheat, were moderated by international pricing agreements administered by the International Wheat Council and by the marketing organizations of the main producing countries. From 1949 to July 1967, the International Wheat Agreement provided a wide price range ($162\frac{1}{2}$ to $202\frac{1}{2}$ U. S. cents per bushel for the basic grade, No. 1 Manitoba Northern, in store Fort William/Port Arthur, under the 1962 Agreement and its successive extension), and while the range was reconsidered at each triennial renewal of the Agreement after its introduction, the changes made throughout the duration were relatively small. Except for the years 1949 to 1953, when prices for non-Agreement sales were above the upper limit, world market prices for wheat remained within the IWA range, and generally moved freely within this range. Although prices of some wheats in individual transactions came close to the minimum level or to the upper limit of the range, only minor breaches of the Agreement occurred and no formal action was required to maintain the degree of market stability which the Agreement envisaged. Although it is difficult to measure, the Agreement exercised a considerable indirect effect on wheat prices by providing a reference basis for the pricing operations of individual member exporting countries, by fostering co-operation between them, and by discouraging policies liable to disturb the wheat market.

On July 1, 1968, the International Grains Arrangement replaced the IWA. Unlike the IWA, it consists of two parts: a Wheat Trade Convention and a Food Aid Convention. Like the IWA, the Wheat Trade Convention is a multilateral contract between exporting and importing member countries but it introduced significant changes to the level and to the definition of prices by establishing quality differentials between certain classes and grades of wheat.

Future Markets for Canadian Grains

Under the IWA, a price range was established for one quality of wheat in one position (No. 1 Manitoba Northern at Fort William/Port Arthur), and minimum and maximum prices for other types and grades in other centres were determined by formulae. The IGA uses a new reference wheat and basing point -- U.S. hard red winter No. 2 (ordinary) at U.S. Gulf ports -- and raised minimum prices significantly. In addition to defining minimum prices more precisely, a series of minimum prices were set at common points for important types of wheat, reflecting their different historical market values and quality (Table V-16). Maximum prices are set 40¢ (U.S.) above the minimum, providing a range within which prices can respond to supply and demand.

Higher minimum prices were established under the IGA in anticipation of a wheat shortage. However, the present wheat surplus has accentuated competition between exporting countries and has resulted in market prices falling well below the minimum prices of the new price schedule. These lower market prices can give rise to an incongruous situation. In the case of the three largest importers, the United Kingdom, the EEC countries and Japan, which account for about one-third of commercial imports of wheat, the reduced export prices may not be reflected in a reduction in the cost of wheat to the miller and to the ultimate consumer. The use of import levies to adjust the lower import price to the domestic level in the United Kingdom and the EEC countries, and the Japanese Food Agency system of establishing prices for resale to millers, may mean that the reduced import prices only further reduce the competitive advantage of imported wheats by helping to build up funds used to finance domestic price supports and export subsidies.

The course of export prices of the more important wheats, which is shown graphically in Chart I for the period August 1965 to May 1969, indicates the variation in price differentials between different wheats as well as the variation in the general level of wheat prices. Export prices of wheat were generally steady from August to December 1965. From January to June 1966, there was a steady moderate rise, reflecting the high level of world trade. Beginning in June, however, prices rose very sharply, partly in response to demand factors, but also because of diminishing stocks reflecting a tightening of the world supply position. Prices of most wheats held firm till about the end of the crop year 1966.

Export Competition for Wheat

The beginning of the 1967 crop year brought sharp downward adjustments in the prices of most wheats as a result of an easier supply position. This lower level of prices was maintained until June 1968 when, in anticipation of the entry into force of the International Grains Arrangement, prices in general moved up to a point around the minimum of the new price range. During the first half of the 1968 crop year, prices were normally at the minimum level of the price range, with isolated sales taking place at prices below the minimum with increasing frequency towards the latter part of the year.

Table V-16

SCHEDULE OF MINIMUM AND MAXIMUM PRICES, BASIS F.O.B. GULF PORTS
ESTABLISHED IN ACCORDANCE WITH THE WHEAT TRADE CONVENTION
OF THE INTERNATIONAL GRAINS ARRANGEMENT, 1967⁽¹⁾

(U.S. \$ per bushel)

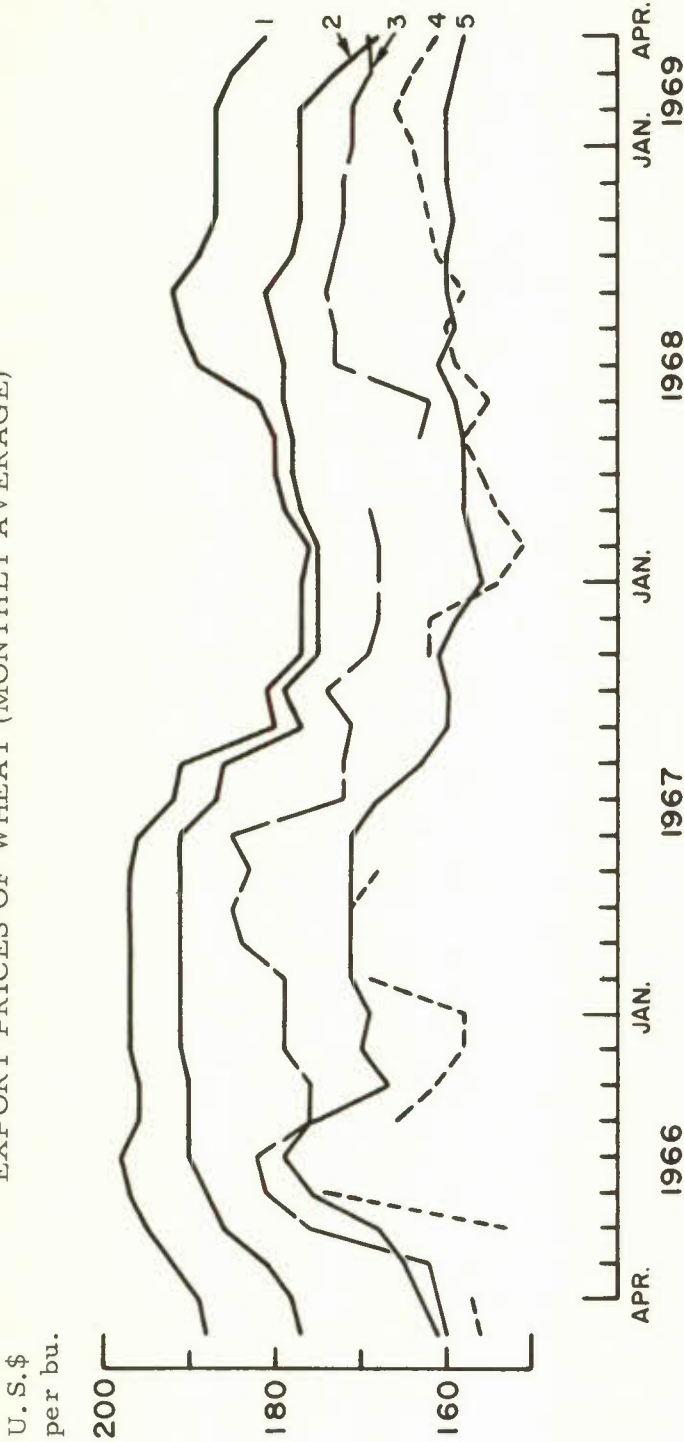
Representative Wheats	Minimum Price	Maximum Price
<u>Canada</u>		
Manitoba No. 1	1.95½	2.35½
Manitoba No. 3	1.90	2.30
<u>United States</u>		
Dark northern spring, No. 1, 14%	1.83	2.23
Hard red winter No. 2 (ordinary)	1.73	2.13
Western white No. 1	1.68	2.08
Soft red winter No. 1	1.60	2.00
<u>Argentina</u>		
Plate	1.73	2.13
<u>Australia</u>		
F.A.Q.	1.68	2.08
<u>European Economic Community</u>		
Standard	1.50	1.90
<u>Sweden</u>		
	1.50	1.90
<u>Greece</u>		
	1.50	1.90
<u>Spain</u>		
Fine wheat	1.60	2.00
Common wheat	1.50	1.90

(1) Formulae for calculating the equivalent minimum and maximum prices for these and certain other wheats at points other than those referred to above are provided in the Wheat Trade Convention.

Source: International Grains Arrangement, 1967, FAS-M-195, USDA, Washington, November 1967.

Chart I

EXPORT PRICES OF WHEAT (MONTHLY AVERAGE)



- 1 Cda. Manitoba Northern No. 1 in Store Fort William/Port Arthur
- 2 Cda. Manitoba Northern No. 2 in Store Fort William/Port Arthur
- 3 U.S. No. 2 Hard Winter (Ordinary) f.o.b. Gulf
- 4 Argentine 63½ lb. up River f.o.b.
- 5 Australia F.A.Q. bulk f.o.b.

Export Competition for Wheat

The variations in the spreads between different wheats under varying demand and supply conditions at different points of time are illustrated in Chart I. It may be observed that a change in the price of certain wheats is usually followed by an adjustment in prices of other wheats in an effort to remain competitive. In order to re-establish Canadian Manitobas on a competitive basis, Canada announced in March 1969 that she would be forced to offer wheat at prices below the minimum of the range. In the late months of the 1968 crop year, the export price situation continued to deteriorate, developing, in the early months of 1969, into a price war.

Competitive Structure of the World Wheat Market

The competitive structure of the export market for wheat is summarized in Table V-17, which shows the distribution of wheat and flour exports for each of the principal exporters according to country of destination, classified by economic groupings, for the years 1964 to 1968. On the basis of this five-year period, it would seem that developing countries are tending to make up a larger part of the total market while a corresponding decrease has occurred in the share of the exports going to centrally planned countries.

The distribution of U. S. exports for the five years 1963 to 1967 was 25 per cent to the developed group, 71 per cent to the developing and 4 per cent to the centrally planned group. Australia shipped 22 per cent of her wheat to the developed countries, 34 per cent to the developing group and 44 per cent to the centrally planned bloc. The distribution of Argentina's exports is somewhat similar to that of Australia, being 27, 38 and 35 per cent, respectively, to the developed, developing and centrally planned groups. The EEC shipped 20 per cent of its exports of wheat to the developed countries, 47 per cent to the developing group and 33 per cent to the centrally planned bloc. For the five years, 80 per cent of the U. S. S. R. export market is made up by its neighbouring Eastern European countries and Cuba, all members of the centrally planned group. However, shipments to the hard currency developed group increased substantially in 1967.

Table V-17

DISTRIBUTION OF WHEAT AND WHEAT FLOUR EXPORTS BY SOURCE AND ECONOMIC GROUPINGS OF COUNTRIES
1964 TO 1968

(Thousand metric tons)

	Argentina	Australia	Canada	EEC ⁽¹⁾	United States	U.S.S.R.	Others	Total
<u>Developed countries</u>								
1964	2,029	1,277	5,542	781	4,465	79	735	14,902
1965	1,372	1,341	4,945	978	7,011	3	613	16,263
1966	872	1,555	5,644	620	5,603	62	1,224	15,580
1967	532	1,564	4,408	923	4,471	496	1,016	13,410
1968	751	2,355	4,300	1,363	4,582	637	1,260	15,248
Five-year average	1,111	1,618	4,968	933	5,226	254	970	15,080
Per cent of total	28	25	42	20	26	7	35	28
<u>Developing countries</u>								
1964	1,708	2,017	1,328	2,276	15,004	35	508	22,876
1965	2,083	1,680	1,191	1,841	16,344	217	815	24,121
1966	1,856	3,179	2,494	2,422	14,450	791	790	25,982
1967	824	2,991	947	2,763	15,379	931	2,376	26,811
1968	1,915	1,820	1,453	2,742	10,422	1,180	1,762	21,294
Five-year average	1,667	2,338	1,483	2,409	14,440	631	1,250	24,218
Per cent of total	43	37	13	52	73	18	46	46
<u>Centrally planned countries</u>								
1964	685	3,175	4,964	1,878	103	1,051	765	12,621
1965	4,543	2,660	8,697	2,230	71	1,980	1,120	21,301
1966	331	2,271	6,695	1,135	152	3,273	358	14,215
1967	11	2,456	3,547	664	41	3,657	219	10,595
1968	--	1,396	2,932	576	14	3,515	100	8,533
Five-year average	1,114	2,392	5,367	1,297	76	2,695	512	13,453
Per cent of total	29	38	45	28	1	75	19	26
<u>Total</u>								
1964	4,422	6,469	11,834	4,935	19,572	1,159	2,008	50,399
1965	7,948	5,681	14,833	5,049	23,426	2,200	2,348	61,685
1966	3,059	7,005	14,833	4,177	20,205	4,126	2,372	55,772
1967	1,967	8,902	4,350	3,681	20,491	5,084	3,611	50,816
1968	2,666	5,571	8,685	4,681	15,018	5,332	3,122	45,075
Five-year average	3,892	6,348	11,818	4,639	19,742	3,580	2,732	52,751
Per cent of total	100	100	100	100	100	100	100	100

(1) Intra-EEC shipments omitted.

Source: Review of the World Grains Situation, op. cit.

Export Competition for Wheat

In the five years 1963 to 1967, 40 per cent of Canada's exports have gone to the developed countries, 11 per cent to the developing group and 49 per cent to the centrally planned countries. The proportion of Canada's wheat exports which were marketed in the developed group of countries in 1956 to 1960 was 81 per cent. During the same period, developing countries provided an outlet for 10 per cent and the centrally planned group accounted for 9 per cent of Canada's wheat exported (Table V-18).

Table V-18

CANADA: PERCENTAGE DISTRIBUTION OF EXPORTS OF WHEAT
BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1956/1960, 1961/1965; ANNUAL 1965 TO 1968

	Developed Countries	Developing Countries	Centrally Planned Countries	Total
Average 1956/1960	81.5	9.9	8.6	100.0
Average 1961/1965	47.2	7.4	45.4	100.0
1965	33.3	7.9	58.8	100.0
1966	41.4	12.6	46.0	100.0
1967	50.0	11.0	39.0	100.0
1968	54.9	12.0	33.1	100.0

Source: Board of Grain Commissioners for Canada, Canadian Grain Exports.

With the forecast falling-off of exports to the centrally planned group already in evidence in 1967 and 1968, the developed countries will have resumed their former status as the most important export market for Canadian wheat. As indicated in Chapter IV, the increased proportion of domestic wheat in the grist and technological developments in baking should give Canada's stronger, high protein wheat a competitive advantage in these markets, provided the necessary changes are made in our grading system and an effective market development program is carried out. It is evident, however, that the very favourable reception

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which Australia's new hard wheats have received, together with a lowering of their shipping costs through the use of bulk ocean carriers and the modern grain handling and trans-shipment facilities at ports like Rotterdam and Tilbury, will assure Australia of a continuing wheat market in Western Europe. Also, the United States, which ships a volume of wheat equal to that of Canada into Western Europe, will likely continue to maintain the advantage which it has derived from the intensive market development program which her producer organizations have carried out and will be a formidable competitor in those markets. In the light of their strong competitive situation in the developed countries, it is likely that Canada's share of these wheat markets will continue to decline unless effective steps are taken to improve our grading systems.

In the developing countries, concessional sales will continue to assure the United States of its position as principal supplier. However, a shift to protein grading in Canada could provide Canada with a range of qualities of wheat which will improve her competitive position both in such quality-conscious markets as Venezuela and the Philippines, as well as in markets where, competitively, quality is secondary to price.

With an expected decrease in the imports of wheat in India and Pakistan, which were the destination of most of Canada's exports to the developing countries, Canada will have to do some intensive market development work with this group in order even to maintain its current 5 per cent share of this market.

Within the centrally planned countries, the competitive situation is different for the Soviet Eastern European Bloc countries and Mainland China and the Communist neighbours. Our analysis in Chapter IV indicates that by 1975 the U. S. S. R. will not normally require imports of wheat and that the import requirements of Eastern European countries may be reduced to 3.5 million metric tons, most of which will be supplied by the U. S. S. R. On the basis of available information, it is expected that imports by Mainland China will continue about the five million ton level. Assuming that Canada retains her current share in the Chinese market, Canadian exports to the centrally planned countries by 1975 would probably be reduced to about 70 million bushels rather than in the 100 million to 300 million bushel range of recent years. This sudden drop in the wheat exports to the centrally planned countries will, of course, radically change the competitive structure of the world wheat market.

CHAPTER VI
CANADA'S COMPETITIVE POSITION
IN THE EXPORT OF WHEAT

Canada's share of the world wheat market has varied from a high of over 26 per cent in 1957, 1963 and 1966 to a low of 17 per cent in 1967 (Table VI-1). Canada provided 22 per cent of average annual world wheat exports of 39 million tons during the 1957/1961 period, and 24 per cent of the 54 million ton average marketings for 1962/1966. In 1966, she had a 26 per cent share in a 56 million ton export market. In 1968, however, world exports fell to 45 million bushels and with large supplies available for export, Canada's share in the market was reduced to 19 per cent. In 1967, while the Canadian and Argentine shares in the market declined, the United States, Australia, the EEC, the U. S. S. R. and other countries including Eastern Europe increased their percentage of diminishing world imports. In 1968, Canada and Argentina increased their share of world exports, but the United States and Australia lost ground.

The structure of Canada's export wheat market has changed over the past decade (Table VI-2). Our average annual exports, which amounted to 260 million bushels during the five years 1956/1960 and 414 million during the 1961/1965 period, were 546 million bushels in 1965 and 280 million in 1968. The economically developed countries, which provided an outlet for an average of 212 million bushels during 1956/1960 and accounted for 82 per cent of Canada's exports, decreased their imports from Canada to 154 million bushels, making up about 55 per cent of the export market in 1968. The United Kingdom which traditionally has been Canada's principal wheat export market imported 56 million bushels from Canada in 1968, accounting for 20 per cent of Canada's exports, as compared with an average of 83 million bushels, making up 32 per cent of total exports for the five years 1956/1960.

The EEC countries accounted for 16 per cent of Canada's wheat exports in 1968 as compared with an average of 25 per cent in the 1956/1960 period. Aggregate Canadian exports to other

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Western European countries decreased by more than 50 per cent. Japan has been Canada's only market among the developed countries which has shown sustained growth. Canadian exports of wheat to Japan, which increased from an average of about 43 million bushels for the 1956/1960 period to 60 million in 1966, decreased to 41 million bushels in 1967 and 43 million in 1968.

Table VI-1

EXPORTS OF WHEAT AND FLOUR BY EXPORTING COUNTRIES AS PERCENTAGE OF TOTAL
1957 TO 1968

	Argentina	Australia	Canada	EEC	United States	U.S.S.R.	Others	Total
1957	6.5	5.1	26.5	11.9	33.8	12.0	4.2	100.0
1958	7.9	5.7	22.9	7.3	33.8	16.5	5.9	100.0
1959	5.8	8.6	20.5	8.2	37.7	15.0	4.2	100.0
1960	4.6	11.7	21.8	5.7	42.1	11.8	2.3	100.0
1961	5.0	13.2	20.9	6.6	41.2	10.6	2.4	100.0
1962	4.2	11.0	20.7	8.7	39.8	12.2	3.4	100.0
1963	4.9	13.7	26.8	7.8	41.0	2.3	3.5	100.0
1964	8.7	12.6	23.3	11.8	38.3	2.3	3.0	100.0
1965	12.9	9.2	24.0	8.2	38.0	3.6	4.1	100.0
1966	5.5	12.6	26.6	7.5	36.2	7.4	4.2	100.0
1967	2.7	13.8	17.5	8.6	40.3	10.0	7.1	100.0
1968	5.9	12.4	19.3	10.4	33.3	11.8	6.9	100.0

Source: World Wheat Statistics, op. cit.

Little change occurred in the proportion of Canada's wheat exports taken by the developing countries as a group. This has varied between 8 and 13 per cent of total exports in the last three years, as compared with averages of 10 per cent for the period 1956/1960 and 7 per cent for the 1961/1966 period. Some changes have occurred, however, in the distribution of Canada's exports within this group of countries. These changes reflect increased shipments to Asia, particularly as food aid.

Table VI-2

CANADA: EXPORTS OF WHEAT (1) BY ECONOMIC GROUPINGS OF COUNTRIES
AVERAGE 1956/1960, 1961/1965; ANNUAL 1965 TO 1968

	Average 1956/1960		Average 1961/1965		1965		1966		1967		1968	
	(Mill. bu.)	(Per cent)	(Mill. bu.)	(Per cent)	(Mill. bu.)	(Per cent)	(Mill. bu.)	(Per cent)	(Mill. bu.)	(Per cent)	(Mill. bu.)	(Per cent)
<u>Developed countries</u>												
EEC	63.8	24.6	56.0	13.5	48.0	8.8	50.2	10.4	43.4	13.5	45.7	16.3
United Kingdom	83.1	32.0	74.1	17.9	69.9	12.8	67.8	14.1	62.1	20.0	55.7	19.9
Other Western Europe	19.0	7.4	14.3	3.5	14.6	2.6	12.0	2.4	8.0	3.0	9.2	3.3
Japan	42.6	16.4	48.3	11.7	49.6	9.1	60.2	12.5	40.8	13.2	43.3	15.4
South Africa	3.0	1.1	2.3	0.6			9.4	2.0	0.9	0.3		
Total	211.5	81.5	195.2	47.2	182.1	33.3	199.6	41.4	155.2	50.0	153.9	54.9
<u>Developing countries</u>												
Africa	1.0	0.4	1.3	0.3	1.0	0.2	1.7	1.4	2.6	0.8	5.2	1.9
Asia	14.7	5.7	17.8	4.3	32.3	5.9	52.5	10.9	27.2	8.8	23.2	8.2
Western Hemisphere	10.0	3.8	11.6	2.8	9.7	1.8	6.6	0.3	4.3	1.4	5.3	1.9
Total	25.7	9.9	30.7	7.4	43.0	7.9	60.8	12.6	34.1	11.0	33.7	12.0
<u>Centrally planned countries</u>												
Eastern Europe	8.7	3.3	46.9	11.3	33.2	6.0	30.5	6.3	14.5	4.6	6.4	2.3
U.S.S.R.	5.9	2.3	73.9	17.8	198.4	36.4	93.2	19.3	49.0	15.8	1.7	0.6
Mainland China	7.8	3.0	61.2	14.8	74.0	13.6	90.4	18.7	52.0	16.7	83.1	29.6
Korea North	--	--	0.8	0.2	3.9	0.7	1.0	0.2	--	--	--	--
Cuba	--	--	5.4	1.3	11.4	2.1	7.2	1.5	5.8	1.9	1.7	0.6
Total	22.4	8.6	188.2	45.4	320.9	58.8	222.3	46.0	121.3	39.0	92.9	33.1
ALL COUNTRIES	259.6	100.0	414.1	100.0	546.0	100.0	482.7	100.0	310.6	100.0	280.5	100.0

(1) Wheat flour not included.

Source: Canadian Grain Exports, op. cit.

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The greatest change in the distribution of Canada's wheat exports occurred within the centrally planned countries which in 1965 imported 321 million bushels or 59 per cent of Canada's total wheat shipments. Canadian exports to this group of countries decreased to 121 million bushels in 1967 and 93 million in 1968 accounting for 39 per cent and 33 per cent, respectively, of Canada's wheat exports for those years.

A more detailed analysis of Canada's exports of wheat by country of destination, which is presented in Table A-7 provides a basis for a regional and a country by country assessment of export markets.

Canada's Competitive Position in Selected Wheat Markets

Unpublished records in the files of the Department of Industry, Trade and Commerce, and the Canadian Wheat Board, and interviews with various persons associated with the grain trade have provided a basis for an appraisal of the competitive position of Canadian wheat in selected markets, which should serve as a guide in estimating Canada's future share of each market and, at the same time, indicate the type of action which may be effective in improving Canada's export position.

The countries selected for this examination are listed in Table VI-3, which shows Canada's share in each market for the years 1957 to 1968. They include both large and small importing countries, most of which have been customers of Canada over a period of years. In aggregate, they account for over 80 per cent of world wheat imports and over 80 per cent of Canada's exports of wheat in 1967.

Table VI-3

CANADA'S SHARE IN THE WHEAT IMPORTS OF SELECTED COUNTRIES
1957 TO 1968

(Per cent)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
United Kingdom	56.1	55.2	57.8	56.0	50.4	56.8	50.3	54.0	44.1	48.3	46.2	35.5
EEC(1)	48.4	34.2	35.4	34.5	30.3	39.1	36.3	37.8	27.6	36.1	30.1	27.4
Switzerland	63.0	52.6	64.4	48.4	43.6	18.8	33.2	28.7	27.7	28.9	15.0	27.1
Norway	29.3	30.0	27.6	42.1	13.7	13.7	13.1	12.5	10.6	10.6	16.8	4.6
Japan	40.4	50.8	47.9	53.7	47.4	47.2	33.6	40.1	35.8	38.7	27.9	28.7
South Africa	66.7	69.2	65.4	100.0	--	79.8	22.3	98.7	--	22.2	100.0	--
Venezuela	35.3	37.6	26.9	26.5	25.0	53.7	38.4	44.7	32.8	22.0	12.3	9.8
Central America	25.0	27.9	26.4	23.9	30.0	33.3	23.5	28.0	24.7	20.9	2.5	--
Philippines	34.6	33.5	44.5	29.5	33.3	42.8	37.6	36.5	14.7	3.5	3.3	--
Ecuador	57.1	64.6	65.9	71.7	69.8	66.7	50.0	56.1	46.4	16.7	12.1	14.7
Peru	24.2	15.0	20.8	13.3	0.3	3.6	4.9	6.5	1.5	0.3	0.2	--
Brazil	--	--	--	--	--	--	--	--	--	--	--	--
India	21.3	7.9	5.0	3.0	3.0	0.5	0.4	2.9	4.0	25.3	5.1	22.5
Pakistan	10.3	13.0	7.6	4.7	6.5	0.6	0.6	3.8	3.2	10.1	1.1	12.4
United Arab Republic	--	0.5	--	--	0.9	0.3	--	--	--	--	--	0.8
Israel	5.2	16.4	16.0	20.1	7.9	14.3	13.8	12.6	5.2	--	4.7	5.4
U.S.S.R.	100.0	87.0	--	100.0	--	--	56.6	43.6	59.8	94.6	89.4	100.0
Eastern Europe	2.9	3.0	2.5	9.5	16.9	11.1	17.3	41.0	15.9	18.4	8.4	7.6
Cuba	6.1	4.4	2.3	13.5	--	--	79.2	61.5	100.0	82.8	61.7	51.8
Mainland China	94.7	83.3	--	39.5	41.4	34.4	19.3	34.8	32.2	49.2	32.9	56.3
WORLD	26.5	22.9	20.5	21.8	20.9	20.7	26.8	23.3	23.7	26.3	17.2	19.3

(1) Percentage of trade with outside countries.

Source: World Wheat Statistics, op. cit.

Table VI--4

 UNITED KINGDOM: IMPORTS OF WHEAT AND FLOUR BY SOURCE
 1957 TO 1968

(Thousand metric tons - wheat equivalent)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	284	483	269	221	355	282	87	488	339	216	44	132
Australia	507	630	613	807	717	528	8.8	556	675	412	657	768
Canada	2,982	2,815	2,551	2,453	2,353	2,418	2,404	2,265	2,126	2,000	1,878	1,586
France	735	40	127	102	186	142	551	254	378	92	311	849
Germany	--	32	3	8	1	22	125	19	19	45	18	849
Other EEC	--	230	28	--	--	--	--	326	146	147	215	849
Sweden	--	--	1	2	--	32	29	10	27	60	15	183
United States	806	704	626	495	494	153	523	244	812	702	277	123
U.S.S.R.	--	132	119	282	339	400	72	--	--	--	150	308
Others	--	37	76	10	221	276	173	224	236	361	502	518

Source: World Wheat Statistics, op. cit.; Review of the World Grains Statistics, op. cit.

Canada's Competitive Position in Wheat

United Kingdom -- U.K. imports of wheat and flour have declined from 5.3 million tons in 1957 to 4.5 million tons in 1968 (Table VI-4). The distribution of imports by type of wheat has remained generally the same throughout the period (Table VI-5). Hard red springs have continued to be the predominant type of wheat imported, ranging from about 50 to 60 per cent. They have been supplemented in the grist by hard red winters and medium hard as filler wheats. The increase in the proportion of soft wheats imported is associated with the expanding use of wheat in livestock feeding. Canada, which is the source from which hard springs are imported, has continued to be the main supplier of wheat to the United Kingdom, although a decline in Canadian shipments has resulted in a decrease in Canada's share in that market.

Table VI-5

PERCENTAGE DISTRIBUTION OF U.K. WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	55.1	6.5	14.0	24.0	0.4	100.0
1959	56.3	11.1	10.0	22.2	0.4	100.0
1960	52.8	9.8	12.4	24.3	0.7	100.0
1961	50.7	2.1	17.7	29.2	0.3	100.0
1962	58.9	0.2	18.8	21.8	0.3	100.0
1963	52.0	5.5	3.7	38.5	0.3	100.0
1964	55.3	0.8	14.0	29.4	0.5	100.0
1965	48.9	5.7	8.5	35.2	1.7	100.0
1966	62.1	4.9	6.6	20.4	6.0	100.0

An authoritative observer of the grain trade in the United Kingdom reports that the adoption of changes in the Canadian wheat grading system assuring a uniformly high protein content in export cargoes of top grade Manitobas would maintain their premium value which has developed through the years, and it would help to maintain and expand Canada's percentage share of the quality wheat market.

Table VI-6

DISTRIBUTION OF EXPORTS OF WHEAT TO EEC COUNTRIES FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	652	593	555	395	1,028	533	639	1,309	881	600	466	565
Australia	--	48	115	581	556	55	226	1	10	120	151	240
Canada	1,906	1,582	1,401	2,033	1,812	1,416	1,768	1,402	1,184	1,497	1,119	1,217
Sweden	65	96	54	132	163	58	58	117	31	5	144	T
United States	918	1,150	936	2,100	1,883	845	1,930	797	1,948	1,663	1,496	1,923
U.S.S.R.	10	542	282	622	369	290	53	--	--	35	255	270
Others	388	620	613	23	160	425	193	87	231	223	83	232
Total outside countries	3,939	4,631	3,958	5,886	5,971	3,622	4,867	3,713	4,285	4,143	3,714	4,447
France	644	294	510	553	607	160	521	596	725	495	952	n.a.
Germany, F.R.	234	180	216	99	233	5	T	1	--	4	12	n.a.
Other EEC	22	79	13	1	4	6	35	19	76	71	294	n.a.
Total intra-EEC	900	553	739	653	844	171	556	616	801	570	1,260	n.a.
TOTAL	4,839	5,184	4,697	6,539	6,815	3,793	5,423	4,329	5,086	4,713	4,974	n.a.
Canada as per cent of outside countries	48.4	34.2	35.4	34.5	30.3	39.1	36.3	37.8	27.6	36.1	30.1	27.4

Source: World Wheat Statistics, op.cit.; Review of the World Grains Statistics, op.cit.

Canada's Competitive Position in Wheat

EEC Countries -- Total shipments of wheat to EEC countries, both from outside countries and between member countries, declined from an average of 5.6 million tons for the five years 1957 to 1961 to 4.4 million tons in 1968 (Table VI-6). Total intra-EEC trade, which averaged 0.7 million tons for the five years 1957 to 1961, has varied greatly from year to year from a low of 171 thousand tons in 1962 to a high of 1.3 million tons in 1967. Canada's share in the EEC imports from outside countries had declined from a 1957/1961 average of 1.7 million tons to 1.2 million tons in 1968. On a percentage basis, Canada generally has maintained her share in the total EEC market but this situation has varied between member countries. While it is generally agreed that the financial advantage of using maximum proportions of EEC wheat in the grist will tend to favour the importation of quality wheat for blending, the comments which follow give no assurance that Canada will automatically maintain her current position as a supplier of wheat to the EEC. They suggest an urgent need for changes in Canada's system of grading and pricing which, if implemented, could enhance Canada's future competitive position in these markets.

Federal Republic of Germany -- As a result of increased domestic production, West Germany's imports of wheat have declined from 2.5 million tons in 1957 to 1.6 million tons in 1968 (Table VI-7). Increasing shipments from other EEC member countries since 1962 have reduced imports from outside countries to one million tons. The distribution of imports by types of wheat has remained relatively constant (Table VI-8). Canada has been the principal supplying country throughout the period, but shipments have declined.

The calculation of the "utilization value" in dollars per ton for each wheat shipment received on the basis of laboratory analysis, and the use of such utilization value figures in comparison with actual market prices as a basis for buying, has caused German millers to question the prices of Manitobas. In the above comparison, Dark Northern Springs are reported to have scored much more favourably than Manitobas. Whereas in former years, the term "quality wheat" in Germany was synonymous with Manitobas, Hamburg traders are now reported to consider U.S. Northern Spring 15 per cent protein "even money" with No. 2 Manitobas, pointing out that, in practice, the U.S. wheat is available at a discount of \$3.00 per ton.

Table VI-7
DISTRIBUTION OF EXPORTS OF WHEAT TO FEDERAL REPUBLIC OF GERMANY FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968
(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	382	302	273	122	572	52	253	176	113	42	1	1
Australia	--	48	115	121	304	55	226	--	10	--	15	40
Canada	871	919	690	871	1,223	740	984	612	537	696	461	358
France	532	266	461	514	556	114	161	107	206	204	390	n.a.
Other EEC	19	19	11	T	T	3	33	18	73	69	205	n.a.
Sweden	61	89	51	113	153	48	47	105	31	5	128	--
United States	556	445	303	189	386	212	401	93	385	450	336	323
U.S.S.R.	--	15	64	107	113	126	--	--	--	--	16	46
Others	58	205	150	13	40	227	18	32	26	48	81	169
Total EEC	551	285	472	514	556	117	194	125	279	273	608	n.a.
TOTAL	2,479	2,305	2,118	2,050	3,347	1,577	2,123	1,143	1,381	1,514	1,547	n.a.
Total outside countries	1,928	2,020	1,646	1,536	2,791	1,460	1,930	1,018	1,102	1,241	1,025	937
Canada as per cent of outside countries	45.2	45.5	41.9	56.7	43.8	50.7	51.0	60.1	48.7	56.1	45.0	38.2

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Table VI-8

PERCENTAGE DISTRIBUTION OF WEST GERMAN WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	41.2	9.3	15.1	22.8	11.6	100.0
1959	25.1	7.3	15.6	36.0	16.0	100.0
1960	29.8	5.3	8.8	38.0	18.1	100.0
1961	34.6	7.9	20.0	32.9	4.6	100.0
1962	38.3	2.3	11.0	25.1	23.3	100.0
1963	40.6	3.6	11.8	32.2	11.8	100.0
1964	36.4	--	13.2	24.6	25.8	100.0
1965	35.0	8.0	8.4	27.9	20.7	100.0
1966	42.4	9.6	3.2	21.8	23.0	100.0

Netherlands -- The total imports of wheat by the Netherlands have been maintained at levels comparable with the pre-EEC period. The position of Canadian wheat imports in the Netherlands market has greatly deteriorated from 58 per cent of the market in 1957 to only 9 per cent of imports in 1965 and 1966 (Table VI-9). Canadian imports have been replaced by increased imports from the United States, the U. S. S. R., and in 1966, 1967 and 1968 from Australia.

The relationship between levy-paid prices of third country wheats and the internal prices of Community wheat makes it financially advantageous to maximize the percentage of Community wheat in the grist. On the basis of the Netherlands standards of bread quality, millers consider the maximum level to be 40 to 50 per cent. This should tend to decrease the use of medium hard wheats as filler wheats and favour the inclusion of a higher proportion of strong spring wheats within the wheat imported (Table VI-10).

Table VI-9

DISTRIBUTION OF EXPORTS OF WHEAT TO THE NETHERLANDS FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	101	156	104	60	240	149	94	478	157	158	25	78
Australia	T	--	--	13	5	--	T	--	--	120	122	193
Canada	545	274	221	158	115	127	97	96	99	81	144	182
France	103	25	43	33	48	15	70	131	77	42	237	n.a.
Germany, F.R.	185	160	211	90	230	5	T	--	T	3	6	n.a.
Other EEC	2	17	2	T	--	--	2	--	T	T	54	n.a.
Sweden	4	7	--	3	10	8	11	12	--	T	16	
United States	215	352	346	347	694	325	813	340	845	551	560	622
U.S.S.R.	7	271	192	206	125	128	46	--	--	31	142	84
Others	91	118	168	10	70	22	4	3	2	4	1	1
Total EEC	290	202	256	123	278	20	72	131	77	45	310	n.a.
TOTAL	1,253	1,380	1,287	920	1,537	779	1,137	1,060	1,180	990	1,010	n.a.
Total outside countries	963	1,178	1,031	797	1,259	759	1,065	929	1,130	945	700	1,160
Canada as per cent of outside countries	58.7	23.3	21.4	19.8	9.1	16.7	9.1	10.3	9.0	8.6	20.6	15.7

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Table VI-10

PERCENTAGE DISTRIBUTION OF THE NETHERLANDS WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	31.4	5.4	41.9	21.3	T	100.0
1959	35.7	7.7	35.5	20.9	0.2	100.0
1960	35.6	14.6	32.8	13.2	3.8	100.0
1961	23.9	14.3	28.8	23.8	9.2	100.0
1962	40.5	12.5	36.0	8.7	2.3	100.0
1963	28.4	20.1	7.2	35.6	8.7	100.0
1964	18.5	9.9	41.3	24.1	6.2	100.0
1965	22.0	48.2	7.8	11.1	10.9	100.0
1966	17.7	45.9	8.9	13.8	13.7	100.0

The following opinions were frankly expressed by a representative miller in the Netherlands:

- (1) Canada should have taken steps years ago to make wheat available on a guaranteed protein basis since in the Netherlands, and in many other importing countries using domestic soft wheat as the basis for their grist, a certain percentage of guaranteed high protein wheat in the grist is essential and takes precedence over all other considerations;
- (2) While the quality of Manitoba cargoes has remained more or less stable, Canada's competitors in recent years have greatly improved the quality and uniformity of their export shipments. This development should have resulted in a narrowing of price spreads between Manitobas and other wheats, but instead Manitobas are being priced out of many markets; and

Table VI-11

DISTRIBUTION OF EXPORTS OF WHEAT TO BELGIUM-LUXEMBOURG FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	67	64	32	28	38	70	31	103	24	21	5	48
Australia	--	--	--	2	--	--	--	1	--	--	14	7
Canada	409	317	298	335	321	265	429	424	296	403	262	192
France	9	3	6	6	2	31	184	23	135	70	126	n.a.
Germany, F.R.	49	20	5	4	1	T	T	T	T	1	2	n.a.
Other EEC	--	--	--	T	T	--	T	1	1	T	9	n.a.
United States	60	132	90	123	161	88	223	38	193	160	160	201
U.S.S.R.	3	25	26	68	58	23	7	--	--	3	3	6
Others	1	14	1	T	1	3	17	--	4	2	--	9
Total EEC	58	23	11	10	3	31	184	24	136	71	137	n.a.
TOTAL	598	575	458	566	582	480	891	590	653	660	581	n.a.
Total outside countries	540	552	447	556	579	449	707	566	517	589	444	463
Canada as per cent of outside countries	75.7	57.4	66.7	60.2	55.4	59.0	60.7	74.9	57.2	68.4	59.0	41.5

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

- (3) Because of regional differences in milling skill and bread-making requirements, the acceptable premium for Manitobas varies from one country to another to a much greater degree than in the past. Canada stood to lose many of her markets unless this was recognized and her traditional "one price for all" system was replaced by a regional pricing system or "special deals".

Belgium-Luxembourg -- Belgium-Luxembourg imports of wheat have been maintained generally at the 600 thousand ton level since 1957 (Table VI-11). Hard red springs have made up 50 to 60 per cent of imports, supplemented irregularly by hard red winters and medium hard wheats (Table VI-12). Up to 1967, Canada maintained her position as principal supplier, her share of the market ranging generally from 50 to 70 per cent.

Table VI-12

PERCENTAGE DISTRIBUTION OF BELGIUM-LUXEMBOURG WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	61.4	8.5	18.7	5.5	5.9	100.0
1959	63.6	4.4	13.9	6.6	11.5	100.0
1960	59.3	6.9	18.1	5.5	10.2	100.0
1961	53.0	15.1	16.5	12.3	3.1	100.0
1962	54.3	4.4	24.7	9.3	7.3	100.0
1963	47.5	10.0	2.4	35.6	4.5	100.0
1964	68.0	1.3	7.9	6.8	16.0	100.0
1965	47.0	17.2	3.4	23.4	9.0	100.0
1966	57.8	17.8	2.6	10.2	11.6	100.0

Table VI-13
DISTRIBUTION OF EXPORTS OF WHEAT TO ITALY FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968
(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	90	13	66	185	53	176	185	308	482	320	392	417
Australia	T	--	--	445	235	--	--	--	--	--	--	--
Canada	42	36	59	400	108	127	112	106	171	268	237	369
France	--	--	T	--	1	--	106	335	307	179	199	n.a.
Germany, F.R.	--	--	--	5	2	T	T	--	--	--	T	n.a.
Other EEC	--	--	--	--	--	--	--	T	1	2	2	n.a.
United States	87	148	197	1,397	537	144	188	148	226	222	185	450
U.S.S.R.	--	--	--	241	3	--	--	--	--	1	94	112
Others	133	54	16	--	5	28	9	17	81	9	1	53
Total EEC	--	--	T	5	3	T	106	335	308	181	201	n.a.
TOTAL	352	251	338	2,673	944	475	600	914	1,268	1,001	1,110	n.a.
Total outside countries	352	251	338	2,668	941	475	494	579	960	820	909	1,401
Canada as per cent of outside countries	11.9	14.3	17.5	15.0	11.5	26.7	22.7	18.3	17.8	32.7	29.1	26.3

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Reports from the trade, however, have been sounding warnings that Canadian quality is "not what it used to be"; that Canadian prices are higher than prices for substitutes of equal quality from other non-EEC sources; and that Canadian interest in other areas of the world, where market prospects have appeared brighter and returns more imminent, has resulted in some tendency to neglect its small, but traditional, customers. In 1968, imports from the United States exceeded those from Canada for the first time, and Canada's share in the market fell to 42 per cent.

Italy -- Production of wheat in Italy since 1957 has varied generally between 8 million and 9.5 million metric tons. Imports of wheat into Italy from all sources have also varied greatly from year to year, but have increased fairly steadily from 475 thousand tons in 1962 to a high of 1.3 million tons in 1965 (Table VI-13). Imports have been largely from non-EEC countries, a greater part having been durum wheat, supplemented by hard red springs, for use in the manufacture of alimentary pastes (Table VI-14). Canada has enjoyed an increasing proportion of these shipments.

Table VI-14

PERCENTAGE DISTRIBUTION OF ITALIAN WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	69.7	--	30.3	--	--	100.0
1959	9.8	--	36.1	--	54.1	100.0
1960	3.0	--	26.4	37.9	32.7	100.0
1961	12.7	50.9	5.2	29.5	1.7	100.0
1962	38.9	9.8	34.1	--	17.2	100.0
1963	23.1	16.2	23.1	21.9	15.7	100.0
1964	11.3	9.2	23.7	35.8	20.0	100.0
1965	16.1	6.0	8.6	27.0	42.3	100.0
1966	22.5	8.8	10.5	18.4	39.8	100.0

Table VI-15
 DISTRIBUTION OF EXPORTS OF WHEAT TO SWITZERLAND FROM PRINCIPAL EXPORTING COUNTRIES
 1957 TO 1968
 (Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	14	1	9	3	12	10	5	15	13	11	T	10
Australia	--	--	--	--	4	--	T	--	--	--	1	13
Canada	232	189	222	178	233	80	202	122	196	144	58	144
France	34	16	44	42	69	191	128	225	218	83	214)
Germany, F.R.	47	50	T	18	16	7	15	23	53	71	41)
Other EEC	24	86	46	1	10	6	2	T	1	16	--)
Sweden	T	1	T	2	1	T	1	--	1	--	--	T
United States	14	6	24	111	150	118	251	36	224	156	78	150
U.S.S.R.	--	--	--	11	--	2	2	--	--	--	--	12
Others	3	10	--	2	40	11	2	4	1	18	--	--
TOTAL	368	359	345	368	535	425	608	425	707	499	387	532
Canada as per cent of total	63.0	52.6	64.4	48.4	43.6	18.8	33.2	28.7	27.7	28.9	15.0	27.1

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Switzerland -- Production of wheat in Switzerland, which has been maintained at a level of 300 thousand to 400 thousand metric tons, has been supplemented by imports ranging from 350 thousand to 700 thousand tons. Canada was the principal supplier of wheat to Switzerland up to 1962, but since that time large portions of the market have been taken by other exporters, particularly France and the United States (Table VI-15). Excessively high export subsidies available to France through the EEC restitutions and superior quality of U.S. wheats in relation to price are given as reasons for this change. An increase in Canada's share of Swiss imports of wheat occurred in 1968.

Norway -- Norway's imports of wheat have been maintained at a level of 300 to 400 thousand tons (Table VI-17). There has been a high degree of flexibility in the types of wheat imported, reflecting a shift in sources of supply (Table VI-16).

Table VI-16

PERCENTAGE DISTRIBUTION OF NORWEGIAN WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	33.9	21.0	30.6	14.5	--	100.0
1959	36.0	13.4	38.8	11.8	--	100.0
1960	36.4	--	42.9	20.7	T	100.0
1961	18.6	19.7	26.6	35.1	--	100.0
1962	15.5	5.5	31.7	46.7	0.6	100.0
1963	17.3	21.3	2.8	58.7	--	100.0
1964	13.3	--	24.0	62.7	--	100.0
1965	13.2	39.9	15.1	31.3	0.5	100.0
1966	11.9	15.1	7.2	59.2	6.6	100.0

Table VI-17

DISTRIBUTION OF EXPORTS OF WHEAT TO NORWAY FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	7	7	15	12	24	20	--	79	62	16	1	13
Australia	--	--	--	28	67	66	114	77	19	113	74	118
Canada	85	100	86	144	47	50	46	44	43	38	62	16
France	34	2	25	4	3	72	8	51	53	1	18)
Germany, F.R.	--	--	3	1	2	29	9	15	8	33	3	69
Other EEC	--	5	3	--	T	--	--	8	--	5	2)
Sweden	6	2	8	11	9	6	26	78	41	68	105	61
United States	40	132	72	48	106	22	126	T	181	73	54	18
U.S.S.R.	118	85	94	94	62	85	9	--	--	10	50	27
Others	--	--	6	--	23	14	12	--	--	--	--	28
TOTAL	290	333	312	342	343	364	350	352	407	357	369	345
Canada as per cent of total	29.3	30.0	27.6	42.1	13.7	13.7	13.1	12.5	10.6	10.6	16.8	4.6

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Canada's share of the Norwegian market has declined from an average of 35 per cent during the period 1958 to 1960 to 11 per cent during the 1966 to 1968 period. This has resulted from increased shipments from Australia, Sweden and the United States, and reflects a flexible purchasing policy followed by the Norwegian Grain Corporation in attempting to obtain their supplies where they can get the best value. The Grain Corporation has been reported as being disturbed by an apparent reduction in Canadian quality standards. Comment has also been made on the need for Canada to maintain closer contact with Norwegian grain interests.

Japan -- Japan is one of the few important markets for wheat which has had a fairly consistent growth in imports -- from 2.3 million tons in 1958 to 4.3 million tons in 1968 (Table VI-18).

About one-third of Japan's wheat imports are soft wheats. During the period 1956 to 1962, about 50 per cent of Japan's wheat purchases were hard red springs, but since 1963, the proportion of the imports made up by hard red winters has increased with a consequent decrease in hard red springs to about 40 per cent of the total imports (Table VI-19). This decrease in the proportion of hard red springs making up the Japanese grist reflects a decline in Canada's share in the market from about 50 per cent in the 1958/1961 period to between 30 and 40 per cent. In 1967, Canada's share of the Japanese wheat market decreased further to 28 per cent. This resulted from adjustments in the Japanese Food Agency's resale schedule to mills, which provided for an increase in the net sale price of Canadian Manitoba and a slight reduction in dark northern springs 14%. This resale price schedule was further adjusted in late 1967, restoring in part the earlier balance between Manitoba and dark northern springs.

The Japanese milling industries are very quality-conscious and in discussions with Canadian officials, have emphasized the fact that uniformity, particularly in respect of protein content, is assuming an ever-increasing significance. They have referred to the progress in the United States and Australia in improving their grading and the quality of their shipments, and suggested that Canada would do well to follow their examples. They have pointed out that Manitobas No. 2 or No. 3 below 13 per cent protein were absolutely unacceptable to mills in Japan.

Table VI-18
 DISTRIBUTION OF EXPORTS OF WHEAT TO JAPAN FROM PRINCIPAL EXPORTING COUNTRIES
 1957 TO 1968
 (Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	--	--	--	--	1	--	--	19	--	--	--	18
Australia	184	206	379	358	427	345	512	443	363	431	612	1,171
Canada	1,072	1,197	1,243	1,520	1,331	1,262	1,309	1,433	1,285	1,620	1,098	1,247
France	--	--	--	--	--	T	--	28	--	--	3	24
Other EEC	--	1	--	--	--	--	--	--	--	--	T	--
United States	1,400	946	925	916	1,036	1,005	2,077	1,654	1,943	2,186	2,225	1,839
U.S.S.R.	--	2	48	39	15	62	--	--	--	--	--	--
Others	--	5	2	--	--	--	--	--	--	--	--	50
TOTAL	2,656	2,957	2,597	2,833	2,810	2,674	3,898	3,577	3,591	4,187	3,938	4,349
Canada as per cent of total	40.4	50.8	47.9	53.7	47.4	47.2	33.6	40.1	35.8	38.7	27.9	28.7

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Table VI-19

PERCENTAGE DISTRIBUTION OF JAPANESE WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	50.5	8.4	0.1	41.0	--	100.0
1959	52.0	5.6	1.9	40.5	--	100.0
1960	54.9	6.8	1.4	36.9	--	100.0
1961	49.0	13.2	0.6	37.2	--	100.0
1962	46.9	18.1	2.4	32.6	--	100.0
1963	35.0	27.8	--	37.2	--	100.0
1964	38.5	26.8	0.5	34.1	0.1	100.0
1965	41.3	28.1	--	30.4	0.2	100.0
1966	42.6	26.7	--	30.1	0.6	100.0

During the 1968 crop year, the Japanese complained about an excess of alpha-amylase in shipments of wheat from both the United States and Canada. This condition in wheat is associated with pre-sprouting of kernels as a result of wet weather during harvesting and produces excessive diastatic activity in the flour.

Japan is one of the most important markets for wheat and is likely to become increasingly competitive in terms of quality and price.

South Africa -- Wheat production in South Africa, which has risen from an average of about 780 thousand tons during the period 1957 to 1961 to a record production of 1.3 million tons in 1968, varies widely from year to year. This variation in production is reflected in highly variable imports of wheat and flour (Table VI-20). Imports in 1966, for example, amounted to 834 thousand tons as compared with 79 thousand in 1964, 97 thousand in 1967, and none in 1968. During eight of the past 12 years, Canada has supplied more than two-thirds of South Africa's requirements. Other competing exporters are Australia and the United States.

Future Markets for Canadian Grains

Table VI-20

DISTRIBUTION OF EXPORTS OF WHEAT TO SOUTH AFRICA FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	United States	Total	Canada Per Cent of Total
	(Thousand metric tons)					
1957	--	1	2	--	3	66.7
1958	--	41	188	41	270	69.2
1959	--	62	174	30	266	65.4
1960	--	--	29	--	29	100.0
1961	--	104	--	T	104	--
1962	--	55	217	--	272	79.8
1963	--	--	41	143	184	22.3
1964	--	T	78	1	79	98.7
1965	--	60	--	156	216	--
1966	23	285	185	341	834	22.2
1967	--	--	97	--	97	100.0
1968	--	--	--	--	--	--

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

It is likely that South Africa will continue to expand domestic production of wheat and that imports will represent her residual requirements. Since domestic production is low quality, soft wheat, imports should reflect a preference for strong, high protein wheats for blending. Canadian wheat should continue to make up the major part of South African imports, providing it is competitive on a price and quality basis.

Venezuela -- With the building of its first flour mill in 1956, Venezuela began its transformation from a flour importer to a wheat importing country. The total milling capacity in Venezuela is 10 million hundredweight but total consumption is only 7.5 million hundredweight, so the competition between mills for the domestic flour market is very keen. Partly as a result of this situation, the Venezuelan wheat market is extremely quality and price conscious.

Canada's Competitive Position in Wheat

Venezuela's imports of wheat have increased continuously from 274 thousand metric tons in 1958 to 733 thousand in 1968 (Table VI-21). As a result of the imports of high quality flour from Canada prior to the establishment of a milling industry in Venezuela, Canadian wheat enjoyed a high reputation in Venezuela, initially making up 35 per cent of wheat imports. The distribution of Venezuela's imports of wheat by type changed substantially during this period (Table VI-22). Hard red springs declined as a proportion of total wheat imports from 93 per cent in 1958 to 53 per cent in 1966, and have been supplemented in the production of flour for bread-making by hard red winters. The increasing imports of wheat for use as feed, which amount to some 150 thousand to 200 thousand metric tons, is reflected in greater proportion of soft wheats imported.

Table VI-21

DISTRIBUTION OF EXPORTS OF WHEAT TO VENEZUELA FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Canada	France	United States	Total	Canada Per Cent of Total
	(Thousand metric tons)					
1957	11	112	--	194	317	35.3
1958	--	103	--	171	274	37.6
1959	5	93	--	248	346	26.9
1960	7	87	--	234	328	26.5
1961	21	107	--	300	428	25.0
1962	20	195	--	148	363	53.7
1963	--	191	--	311	502	38.4
1964	32	262	11	281	586	44.7
1965	--	186	--	382	568	32.8
1966	--	136	--	483	619	22.0
1967	--	85	8	596	689	12.3
1968	--	72	--	657	733(1)	9.8

(1) Included in total is 4,000 from "Others".

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

Table VI-22

PERCENTAGE DISTRIBUTION OF VENEZUELAN WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	93.1	2.3	—	4.6	--	100.0
1959	86.4	2.4	1.6	9.6	--	100.0
1960	81.3	6.2	2.2	9.9	0.4	100.0
1961	57.1	11.0	7.0	24.9	--	100.0
1962	69.6	14.5	5.8	8.8	1.3	100.0
1963	61.7	12.4	—	25.0	0.9	100.0
1964	56.1	7.9	5.7	29.1	1.2	100.0
1965	53.6	17.6	--	24.3	4.5	100.0
1966	53.3	13.5	--	28.8	4.4	100.0

The United States has been Venezuela's principal wheat supplier through most of this period. Since 1964, however, Canada's exports of wheat to Venezuela have declined steadily in favour of U. S. wheats, particularly dark northern springs. The reasons for this decline, which have emerged from discussions with milling interests, are basically twofold -- protein and price. Representatives of practically all of the mills expressed dissatisfaction with the low level of protein in shipments of Manitobas, particularly during 1967 when it was reported as 12.7 per cent. They also complained about lack of uniformity of protein. The opinion was also expressed that the prices of Canadian Manitobas were too high relative to U. S. dark northern springs. Since Canada and the United States are the only suppliers of bread wheat to Venezuela, the price problem is specifically the relationship of the price of U. S. dark northern springs ex the Gulf and the United States West Coast to the price of Canadian high grade Manitobas ex the Pacific, the Atlantic and St. Lawrence River ports. Even if prices were maintained at competitive levels with U. S. prices on an f. o. b. basis, the fact that the cost of freight from Vancouver to Venezuela is usually higher than that paid on U. S. wheat shipments means that Canadian wheat may not be competitive on a c. i. f. basis. The Canadian freight disadvantage

Canada's Competitive Position in Wheat

occurs particularly in respect of parcel lots which represent the bulk of Canadian shipments to Venezuela and are higher than the rates available on cargo lots.

Canadian wheat is not used by any of the Venezuelan mills at present as the principal ingredient in their grists. As a result of the protein and price situation, individual mills reported making further reductions in the proportion of Manitobas in their grist from 50 per cent to 40 per cent in one mill, 20 per cent in another and 10 per cent in a third, and one of the larger mills does not use any Canadian wheat.

A continuation of this adverse competitive situation could lead to a further deterioration in Canada's position in the Venezuelan wheat market.

Central American Countries -- The countries of Central America have had combined imports of wheat and flour amounting to about 280 thousand tons per year (Table VI-23). In 1964, Canada provided 25 per cent of the combined wheat imports of the area and had nearly 50 per cent of the market in Costa Rica, Nicaragua and El Salvador. Since that time, Canada's sales to these markets have practically disappeared.

Table VI-23

CANADIAN AND U.S. EXPORTS OF WHEAT AND FLOUR TO CENTRAL AMERICAN COUNTRIES
1964 TO 1968

(Thousand metric tons)

	1964		1965		1966		1967		1968	
	Cdn.	U.S.	Cdn.	U.S.	Cdn.	U.S.	Cdn.	U.S.	Cdn.	U.S.
Guatemala	13	53	6	61	1	72	--	59	1	59
Honduras	3	25	3	30	2	30	--	27	T	39
El Salvador	23	30	15	44	17	39	5	56	--	69
Nicaragua	14	16	14	18	7	28	--	22	--	35
Costa Rica	<u>24</u>	<u>26</u>	<u>28</u>	<u>18</u>	<u>24</u>	<u>37</u>	<u>--</u>	<u>46</u>	<u>--</u>	<u>71</u>
Total CACOM	77	150	66	171	51	206	5	210	1	273
Per cent	34	66	28	72	20	80	2	98	--	100
Panama	<u>2</u>	<u>33</u>	<u>1</u>	<u>52</u>	<u>1</u>	<u>23</u>	<u>--</u>	<u>40</u>	<u>T</u>	<u>38</u>
Total Central America	79	183	67	223	52	229	5	250	1	311
Per cent	26	74	23	77	19	81	2	98	--	100

Future Markets for Canadian Grains

The following factors associated with the decline in Canadian exports to the Central American countries emerged from discussions with milling representatives in Central America:

- (1) In order to produce a quality flour which will compete with high protein imported flour, the wheat imported by the mills in the area must have a high and uniform protein content. Canadian wheat has suffered competitively because of variation in protein and lack of protein guarantee;
- (2) Current prices of Canadian wheat are out of line with those of competing qualities of U.S. wheats because historical f. o. b. differentials, which are no longer valid, are being used in establishing prices in the market place;
- (3) Due to lack of storage capacity in the individual mills, shipments must generally be in small lots and there is a lack of suitable and reasonably priced freight from Vancouver to Central American ports. Consequently on a calculated c. i. f. basis, Canadian prices are even more out of line with prices of U.S. wheats than on an f. o. b. basis;
- (4) The continuing use of established U.S. brand names for flour milled in local mills operated by U.S. milling interests has favoured the use of U.S. wheats;
- (5) Since 1965, an increasing proportion of the wheat imported into the area has been provided by the United States under its barter program. In 1967, all U.S. shipments to Guatemala, Honduras, Nicaragua and Costa Rica were barter transactions. Only El Salvador and Panama continued to obtain their wheat on a commercial basis. In addition, gift shipments of flour were made to all Central American countries by the United States; and
- (6) Failure by Canadian trade interests to maintain adequate contact with Central American markets and lack of an effective market development program comparable with that carried out by the U.S. wheat producers' organizations have contributed to a falling-off in Canadian sales of wheat in those markets.

Canada's Competitive Position in Wheat

The Philippines -- Imports of wheat by the Philippines varied between 340 thousand and 411 thousand metric tons from 1957 to 1962. Consumption has been slowly increasing during the last five years with imports rising to 746 thousand tons in 1967 (Table VI-24).

Table VI-24

DISTRIBUTION OF EXPORTS OF WHEAT TO PHILIPPINES FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Australia	Canada	EEC	United States	Others	Total	Canada
							Per Cent of Total
(Thousand metric tons)							
1957	26	142	T	243	--	411	34.6
1958	13	115	--	215	--	343	33.5
1959	26	159	2	170	--	357	44.5
1960	9	106	1	243	--	359	29.5
1961	3	128	1	252	--	384	33.3
1962	20	174	1	212	--	407	42.8
1963	88	202	--	247	1	538	37.6
1964	35	172	37	219	8	471	36.5
1965	2	87	39	435	28	591	14.7
1966	3	20	57	486	--	566	3.5
1967	34	25	59	612	16	746	3.3
1968	22	T	90	513	--	625	--

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Although included in the group of so-called developing countries, the Philippines is a sophisticated wheat market with rigidly high quality requirements. About 70 per cent of the Philippines wheat imports are hard red spring wheat supplemented to some extent by hard red winters (Table VI-25). About 30 per cent of the wheat used is soft wheats made up largely from U. S. western whites and club wheats.

Future Markets for Canadian Grains

Table VI-25

PERCENTAGE DISTRIBUTION OF THE PHILIPPINES WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	88.7	—	—	11.3	—	100.0
1959	85.9	—	—	14.1	—	100.0
1960	58.4	2.0	—	39.6	—	100.0
1961	65.6	3.8	—	30.6	—	100.0
1962	60.6	3.6	—	35.8	—	100.0
1963	55.8	12.7	—	31.5	—	100.0
1964	59.6	7.3	—	33.1	—	100.0
1965	70.8	10.2	—	19.0	—	100.0
1966	71.7	5.4	—	22.9	—	100.0

Since there are no mechanized bakeries in the Philippines, the mills insist that they must produce a flour with a minimum of $13\frac{1}{2}$ per cent protein, for which they require wheat in the $14\frac{1}{2}$ per cent to 15 per cent protein range. Canada was one of the principal suppliers of quality wheat to the Philippines until 1964. The principal factor, which has caused the Philippines to obtain almost all of their quality wheat from the United States in more recent years, is the insistence of the Philippines mills on some form of protein guarantee, and complaints that the protein content of some Canadian shipments had been below the standards which they require for the production of high grade flour. Another factor which has resulted in the United States taking over this market has been the price relationship between U. S. and Canadian wheat. The Philippines mills insist that they will pay no more than \$1.00 or \$2.00 per ton premium for Canadian wheat, and then only providing the protein content is equivalent to the protein guarantee given on dark northern springs.

The Philippines mills also have a preference for mixed cargoes of hard and soft wheat which involves additional costs when ships, loading with Canadian wheat, must obtain part of their cargo at a U. S. port.

Canada's Competitive Position in Wheat

Although U. S. wheat shipments to the Philippines have been on a commercial basis since 1960, shipments of flour varying from 16 thousand to 24 thousand tons per year have been from 50 per cent to 80 per cent on a gift basis.

Finally, the U. S. wheat industry has been active in carrying out promotional work in the Philippines. A combined radio, T. V. and newspaper promotional program to increase the consumption of wheat is being carried on under the sponsorship of the millers association and U. S. wheat associates. The latter organization is also assisting in the operation of baking schools.

Ecuador -- Exports of wheat to Ecuador have varied between 28 thousand and 95 thousand metric tons during the period 1957 to 1968.

Canada and the United States have shared this market throughout the period, Canada having the major share up to 1964. Since that year, Canada's share in exports of wheat to Ecuador have fallen sharply, making up only 15 per cent of the market in 1968 (Table VI-26). A major factor in this shift has been the U. S. PL 480 barter program which covered 50 per cent of U. S. shipments in 1965 and 100 per cent in 1966 and 1967.

Table VI-26

DISTRIBUTION OF EXPORTS OF WHEAT TO ECUADOR FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Canada	United States	Total	Canada Per Cent of Total
	(Thousand metric tons)			
1957	16	12	28	57.1
1958	31	17	48	64.6
1959	27	14	41	65.9
1960	43	17	60	71.7
1961	30	13	43	69.8
1962	32	17	49	66.7
1963	31	31	62	50.0
1964	32	25	57	56.1
1965	32	37	69	46.4
1966	11	55	66	16.7
1967	8	58	66	12.1
1968	14	63	95(1)	14.7

(1) Included in total are 18,000 from "Others".

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

Peru -- Exports of wheat to Peru have increased from an average of 347 thousand tons for the five years 1957 to 1961 to more than 600 thousand tons (Table VI-27).

Table VI-27

DISTRIBUTION OF EXPORTS OF WHEAT TO PERU FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	EEC	United States	Others	Total	Canada Per Cent of Total
	(Thousand metric tons)							
1957	77	--	64	--	85	36	265	24.2
1958	80	--	51	--	193	16	340	15.0
1959	146	--	74	1	135	--	356	20.8
1960	193	--	50	2	132	--	377	13.3
1961	185	2	1	3	207	--	398	0.3
1962	289	1	16	2	142	--	450	3.6
1963	251	1	22	4	170	5	453	4.9
1964	307	T	28	1	93	--	429	6.5
1965	378	--	9	--	214	--	601	1.5
1966	365	23	2	--	241	--	631	0.3
1967	203	83	1	T	260	--	547	0.2
1968	365	154	T	--	112	--	631	--

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

The two principal supplying countries have been Argentina, which has bilateral trade and exchange clearance arrangements with Peru, and the United States, which has exported wheat to Peru under PL 480. Canada occupied the position of third supplying country but her share in the market has continued to decline to the point where it all but disappeared in 1967. In 1969, Canada filled a gap created by a reduction in U.S. aid to Peru by extending credit for five years at a concessional rate of interest, which will involve an interest subsidy paid by Canada, to cover a sale of 200 thousand tons of Canadian wheat for delivery between September 1969 and September 1970.

Brazil -- Wheat production in Brazil, which was 500 thousand tons in 1968, rather than showing any real improvement, has actually declined over the last 10 years. Supplies for consumption amounting to about three million tons are, therefore, largely

Canada's Competitive Position in Wheat

dependent on imports. Some 1.8 million tons are used for bread flour and the remaining 1.2 million tons are used for feed and other purposes. Imports have increased from 1 million tons in 1957 to 2.4 million tons in 1968 (Table VI-28).

Table VI-28

DISTRIBUTION OF EXPORTS OF WHEAT TO BRAZIL FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	Argentina	Australia	EEC	United States	U.S.S.R.	Others	Total
1957	733	--	--	290	--	8	1,031
1958	1,433	--	--	476	--	155	2,064
1959	911	--	51	938	21	9	1,930
1960	684	--	--	1,070	185	--	1,939
1961	551	--	--	1,432	292	--	2,275
1962	472	--	--	1,407	513	--	2,392
1963	689	--	--	1,253	52	83	2,077
1964	1,009	--	4	1,108	--	--	2,121
1965	1,313	--	T	882	--	131	2,326
1966	1,253	104	--	1,164	20	187	2,728
1967	104	100	153	1,309	52	368	2,370
1968	1,194	--	--	808	90	350	2,442

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Argentina, which has been the traditional principal supplier during most of this period, has been involved in special bilateral trade and payments clearing arrangements with Brazil. Brazil's other main source of wheat imports has been the United States under the PL 480 program. During the five years 1963/1967, 48 per cent of U.S. shipments to Brazil were under Title I, 40 per cent were under the barter program, 7 per cent were under Title IV, 2 per cent were donations and 3 per cent CCC credit.

In 1967, imports from Argentina were sharply reduced and replaced in part by shipments from Australia, France, and the U.S.S.R., as well as by increased shipments from the United States. In 1968, Argentina resumed its position as Brazil's principal source of imported wheat.

Future Markets for Canadian Grains

Penetration of the Brazilian wheat market will require special concessional provisions competitive with those extended by the United States which is already firmly established in that market.

India -- Production of wheat in India has varied considerably from year to year, ranging between 10 million to 12 million tons. In 1968, production is expected to be about 17 million tons.

India, in the past, has frequently been subject to regional shortages of wheat and other food grains, the implications of which, because of internal transportation problems, often exert much greater pressure for imports than the overall production statistics would indicate.

Imports of wheat ranged from 2.7 million tons in 1957 to a high of 7.6 million tons in 1965, most of which is associated with government-assisted programs (Table VI-29).

Table VI-29

DISTRIBUTION OF EXPORTS OF WHEAT TO INDIA FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	EEC	United States	Others	Total	Canada Per Cent of Total
	(Thousand metric tons)							
1957	--	12	566	--	2,082	--	2,660	21.3
1958	--	36	290	--	3,330	--	3,656	7.9
1959	--	319	180	1	3,125	--	3,625	5.0
1960	--	134	108	T	3,379	--	3,621	3.0
1961	--	576	97	--	2,545	--	3,218	3.0
1962	--	195	19	31	3,551	--	3,796	0.5
1963	--	206	20	--	4,438	--	4,664	0.4
1964	--	478	187	T	5,877	--	6,542	2.9
1965	--	169	307	T	7,136	--	7,612	4.0
1966	5	427	1,590	4	4,246	5	6,277	25.3
1967	--	689	346	11	5,771	--	6,817	5.1
1968	119	76	728	--	2,317	--	3,240	22.5

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Canada's contribution to India's import requirements for wheat and flour has varied from year to year, amounting to less than 1 per cent in 1962 and 1963 and to as much as 25 per cent in 1966. Since shipments of wheat from Canada to India for many years have been almost entirely on a gift basis, Canadian exports to that country are dependent on the availability of food aid funds.

Pakistan -- Production of wheat in Pakistan was 6.4 million tons in 1968 as compared with an average of 3.9 million tons for the five years 1958/1962. Imports of wheat by Pakistan were about 2.1 million metric tons in 1966 and 1967 as compared with 600 thousand tons in 1968.

The 47 per cent increase in the production of wheat in Pakistan in 1968 was achieved with only a 12 per cent increase in acreage. The increased yield is attributed in part to greater use of fertilizer and favourable weather, but particularly to the new high-yielding wheat varieties introduced from Mexico on one-third of the acreage planted. Prospects for a record wheat crop for the second consecutive year suggest that imports may soon be reduced to the point of self-sufficiency and even a net export position.

The principal supplier of wheat to Pakistan has been the United States which has provided 87 per cent of Pakistan's wheat and flour import needs since 1958 (Table VI-30). Of this amount, about 90 per cent has been for local currency, 3 per cent as a gift, 4 per cent on credit and 3 per cent as a commercial sale.

Australia, Pakistan's second most important regular wheat supplier, provided 9 per cent of her import needs, 95 per cent of which constituted commercial sales assisted in some cases by the extension of special short-term credit. During the same period, Canada supplied 4 per cent of Pakistan's import requirements, all of which was on a gift basis. The use of the new more flexible credit arrangements with subsidized interest rates which have been authorized by the Government of Canada should put Canada in a better competitive position to get at least part of Pakistan's dollar purchases of wheat.

Future Markets for Canadian Grains

Table VI-30

DISTRIBUTION OF EXPORTS OF WHEAT TO PAKISTAN FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Australia	Canada	EEC	United States	Others	Total	Canada Per Cent of Total
	(Thousand metric tons)						
1957	119	96	50	667	--	932	10.3
1958	20	77	--	495	--	592	13.0
1959	106	86	T	931	8	1,131	7.6
1960	106	57	T	1,060	--	1,223	4.7
1961	1	50	--	720	--	771	6.5
1962	152	10	--	1,389	--	1,551	0.6
1963	56	10	--	1,603	--	1,669	0.6
1964	59	72	--	1,761	--	1,892	3.8
1965	55	34	--	975	--	1,064	3.2
1966	698	206	T	1,141	--	2,045	10.1
1967	31	24	T	2,079	41	2,175	1.1
1968	24	75	--	505	--	604	12.4

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

United Arab Republic -- Wheat production in the United Arab Republic has been between 1.5 and 1.6 million metric tons since 1962 as compared with an average of 1.4 million tons for the 1957/1961 period. Annual imports of wheat have amounted to from 1.9 to 2.6 million tons during the 1962/1968 period as compared to an average of 1.4 million tons for the five years 1957/1961. Most of the imports have been on a concessional basis through some form of government assistance.

The United States has been the principal supplier of this market for most of the past decade (Table VI-31). During the most recent three years 1965/67, 97 per cent of the U. S. shipments to the United Arab Republic were noncommercial. Title I of PL 480 (sales for local currency) accounted for 56 per cent, barter made up about 2 per cent and CCC credit 39 per cent.

Table VI-31

DISTRIBUTION OF EXPORTS OF WHEAT TO THE UNITED ARAB REPUBLIC FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Australia	3	1	11	75	108	1	10	20	124	52	--	--
Canada	--	7	--	--	17	3	--	--	T	1	--	22
France	143	3	67	--	--	103	--	195	159	41	544)
Germany, F.R.	T	2	3	22	3	98	22	190	153	79	158)
Other EEC	432	199	79	--	3	28	--	132	176	288	30)
Sweden	--	--	--	--	--	--	--	--	--	--	34	21
United States	--	423	1,015	1,173	1,666	1,646	1,865	1,429	1,288	926	24	7
U.S.S.R.	200	401	--	--	--	--	--	--	158	536	769	850
Others	262	473	27	--	--	--	--	48	346	331	767	786
TOTAL	1,040	1,509	1,202	1,270	1,797	1,879	1,897	2,014	2,404	2,254	2,326	2,627
Canada as per cent of total	--	0.5	--	--	0.9	0.3	--	--	--	--	--	0.8

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

During the most recent two years, the United Arab Republic has been cut off from PL 480, and the U. S. S. R., France and Germany have supplied a large part of the requirements of that market. The fact that the U. S. S. R. shipments are probably part of an overall barter or commodity exchange arrangement and export shipments from EEC countries are heavily subsidized, makes competition for the U. A. R. wheat imports difficult to meet.

Canada has had numerous exploratory discussions with the U. A. R. grain import officials on the possibility of selling Canadian wheat to Egypt. These propositions included a variety of barter deals and long-term credit. The fact that Canada was omitted from the list of supplying countries eligible to compete in a recent call for tenders covering the purchase of wheat by the Government of the United Arab Republic, with the explanation that Canada has not indicated that it can price competitively, may be taken as an indication that Canada's prices are considered to be out of line with other wheats. It is also a confirmation of the extreme subsidization and price cutting that occurs in this market.

Israel -- Production of wheat in Israel was 90 thousand tons in 1967 and 1968 as compared with an average of 61 thousand tons in the five years 1962/1966. During the past decade, imports of wheat by Israel have varied between 230 thousand and 367 thousand tons (Table VI-32). Most of Israel's imports have been high quality wheats of the hard red springs or hard red winters classes (Table VI-33).

Canada's share in Israel's wheat imports varied between 8 and 20 per cent between 1958 and 1964, but has fallen off since that time. The principal supplier in Israel's market has been the United States which has accounted for more than 80 per cent of the wheat imported. Until 1966, most of the U. S. wheat was supplied for local currency under PL 480. The United States has also shipped substantial quantities of wheat flour to Israel, over 85 per cent being donations.

Canada's Competitive Position in Wheat

Table VI-32

DISTRIBUTION OF EXPORTS OF WHEAT TO ISRAEL FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	EEC	United States	Others	Total	Canada
								Per Cent of Total
(Thousand metric tons)								
1957	--	--	14	2	251	--	267	5.2
1958	--	--	52	--	212	53	317	16.4
1959	--	--	42	--	221	--	263	16.0
1960	--	--	59	--	211	24	294	20.1
1961	--	--	23	--	268	--	291	7.9
1962	--	--	45	--	269	--	314	14.3
1963	--	7	33	--	200	--	240	13.8
1964	12	--	29	10	180	--	231	12.6
1965	--	--	13	--	238	--	251	5.2
1966	--	--	--	--	223	--	223	--
1967	--	--	15	T	306	--	321	4.7
1968	--	--	20	T	347	--	367	5.4

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table VI-33

PERCENTAGE DISTRIBUTION OF ISRAELI WHEAT IMPORTS, BY TYPE,
FROM MAJOR EXPORTING COUNTRIES
1958 TO 1966

	Hard Red Spring	Hard Red Winter	Medium Hard	Soft	Durum	Total
1958	19.2	69.2	--	11.6	--	100.0
1959	19.0	71.0	--	10.0	--	100.0
1960	22.4	73.8	--	3.8	--	100.0
1961	7.1	81.5	--	11.4	--	100.0
1962	14.2	81.2	--	4.6	--	100.0
1963	14.1	82.9	--	3.0	--	100.0
1964	12.7	77.7	--	9.6	--	100.0
1965	5.3	94.7	--	--	--	100.0
1966	19.2	76.3	--	4.5	--	100.0

Future Markets for Canadian Grains

U. S. S. R. -- As already noted, production of wheat in the U. S. S. R. has varied widely from year to year over the last decade between 58 and 100 million tons (Table IV-20). Although a net exporter in 6 of the past 10 years, the U. S. S. R. had imports of about nine million tons in 1963 and in 1965. For those years when she imported wheat, Canada has been the principal supplier (Table VI-34). This relationship has been formalized through bilateral trade agreements and in 1966 and 1967, Canada's share of this market was about 90 per cent. As a result of a return to better than average yields in 1966, 1967 and 1968, U. S. S. R. imports have decreased markedly, and instead she has become an important competitor for some of the world's export trade in wheat, and in balance a net exporter. In 1968, the U. S. S. R. postponed purchasing the balance of 135.0 million bushels remaining from the current Canada/U. S. S. R. trade agreement.

Table VI-34

DISTRIBUTION OF EXPORTS OF WHEAT TO U.S.S.R. FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	EEC	United States	Others	Total	Canada
								Per Cent of Total
(Thousand metric tons)								
1957	--	--	365	--	--	--	365	100.0
1958	--	--	200	--	--	30	230	87.0
1959	--	--	--	--	--	--	--	--
1960	--	--	204	--	--	--	204	100.0
1961	--	--	--	--	--	--	--	--
1962	--	1	--	--	--	--	1	--
1963	10	1,537	5,686	592	1,720	499	10,044	56.6
1964	54	877	931	100	46	125	2,133	43.6
1965	2,186	576	5,168	130	--	577	8,637	59.8
1966	21	--	2,712	133	--	--	2,866	94.6
1967	--	--	1,372	--	--	162	1,534	89.4
1968	--	--	147	--	--	--	147	100.0

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Canada's competitive position as a source of wheat to meet the import needs of the U. S. S. R. would seem to be very good. However, on the basis of the long-term crop history of the U. S. S. R. and its last three crops, it is unlikely that she will be an important importer of wheat, except for individual years when yields are reduced because of adverse weather and for minor quantities for destinations where shipping costs from Canada may be lower than from Russian sources.

Eastern Europe -- The combined production of wheat of the six countries of Eastern Europe was 20 million tons in 1967 as compared with an average of about 13 million tons for both of the periods, 1958/1960 and 1961/1963 (Table IV-21). The joint imports of the group have decreased to a level of 15 per cent below the average of the period 1961/1963, while the combined exports are more than six times the average for that period. Bulgaria and Rumania have become net exporters during the past three years, and Hungary's net deficit has been declining rapidly. Czechoslovakia, East Germany and Poland continue to import about the same quantity of wheat as in 1961/1963 but all three have increased their production by over 40 per cent. Czechoslovakia, East Germany and Poland continue to have large import requirements.

Canada has had long-term trade agreements with the six East European countries covering commitments for the purchase and supply of specified quantities of wheat over a period of years (Table VI-35). Two consecutive agreements with Bulgaria extending over periods of three years from October 1963 and October 1966 covered minimum quantities of wheat and flour of 11 and 7.4 million bushels, respectively. At July 31, 1969, 7.4 million bushels were outstanding. Czechoslovakia fulfilled a commitment under a five-year agreement from October 1963, to purchase 44.1 million bushels of wheat.

Two consecutive agreements with Poland for three years from November 1963 and November 1966 covered 44.1 million and 33.1 million bushels of wheat, respectively. A balance of 15.2 million bushels remained at September 30, 1969.

Future Markets for Canadian Grains

Table VI-35

SUMMARY STATEMENT OF LONG-TERM AGREEMENTS
BETWEEN CANADA AND CENTRALLY PLANNED COUNTRIES

	Current Agreement		Total Quantity	Remaining Commitments
	Expiry Date			July 31, 1969
(Million bushels)				
Bulgaria	October	7, 1969	7.4	7.4
China, People's Republic of	July	31, 1969)	168 minimum	--
)	280 maximum	
	September	22, 1969	86.2	86.2 ⁽¹⁾
Czechoslovakia	October	28, 1969	44.1	--
German Dem. Rep.	July	31, 1967	27.6	5.4
Hungary	June	10, 1967	9.2	--
Poland	November	6, 1969	33.1	15.2 ⁽¹⁾
U.S.S.R.	July	31, 1969	336	135.0

(1) September 30, 1969.

Source: The Canadian Wheat Board, op. cit., 1967/68.

A three-year agreement with East Germany was signed in August 1964 covering 27.6 million bushels to be shipped in equal amounts in each of the three years of the agreement. A balance of 5.4 million bushels remains.

An agreement with Hungary extending three years from June 1964 covering 9.2 million bushels of wheat and flour was fulfilled in 1968.

Canada's exports of wheat to Eastern European countries in the 1968 crop year are shown as 293 thousand tons (10.7 million bushels). (See Table VI-36.) The remaining import commitment on agreements with Eastern European countries is for 28 million bushels.

This situation is the result of improved production in the U. S. S. R. and the Eastern European countries, which are given priority as sources for the import of wheat by members of the Bloc when supplies are sufficient. Canada, even with firm long-term commitments from purchasers, is in the position of residual supplier, and then only when supplies within the Bloc are scarce (Table VI-36).

Table VI-36

DISTRIBUTION OF EXPORTS OF WHEAT TO EASTERN EUROPE FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

(Thousand metric tons)

	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Argentina	--	--	--	--	10	--	74	51	96	4	1	--
Australia	--	--	--	29	--	24	39	--	12	--	--	--
Canada	108	134	133	457	754	506	739	1,927	852	928	360	293
France	13	--	--	29	T	574	481	1,272	1,894	756	262	276
Germany, F.R.	8	--	32	47	138	26	204	23	58	13	39	276
Other EEC	--	3	31	2	--	23	247	59	127	1	--	276
Sweden	--	--	--	1	--	91	80	72	123	--	14	--
United States	543	249	730	1,120	467	556	1,441	57	71	152	41	14
U.S.S.R.	3,080	4,103	4,368	3,109	2,970	2,753	916	773	1,897	2,840	3,365	3,150
Others	3	--	110	16	130	--	58	464	243	358	205	100
TOTAL	3,755	4,489	5,404	4,810	4,469	4,553	4,279	4,698	5,373	5,052	4,287	3,833
Canada												
as per cent of total	2.9	3.0	2.5	9.5	16.9	11.1	17.3	41.0	15.9	18.4	8.4	7.6

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Future Markets for Canadian Grains

Cuba -- Cuba, which is not a wheat producing country, has been obtaining its supplies of wheat and flour through the U. S. S. R. since 1960. In 1968, Cuba's imports amounted to 705 thousand tons as compared with 229 thousand in 1957. Since 1963, most of the supplies for Cuba have been purchased by the U. S. S. R. from Canada. During this period, Canada has supplied from 50 to 100 per cent of the requirements of the Cuban market (Table VI-37).

Table VI-37

DISTRIBUTION OF EXPORTS OF WHEAT TO CUBA FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Australia	Canada	United States	U.S.S.R.	Others	Total	Canada Per Cent of Total
	(Thousand metric tons)						
1957	--	14	215	--	--	229	6.1
1958	--	10	216	--	--	226	4.4
1959	--	6	250	--	--	256	2.3
1960	--	30	47	146	--	223	13.5
1961	--	--	--	408	--	408	--
1962	--	--	--	468	2	470	--
1963	12	369	--	85	--	466	79.2
1964	--	348	--	218	--	566	61.5
1965	--	624	--	--	--	624	100.0
1966	--	552	--	115	--	667	82.8
1967	--	448	--	278	--	726	61.7
1968	--	365	--	340	--	705	51.8

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Canada's Competitive Position in Wheat

Mainland China -- In the absence of reliable statements, production of wheat in Mainland China is estimated at about 20 million tons (Table IV-23). This compares with China's production of 80 to 100 million tons of rice.

Since 1960, Mainland China has imported an average of five million tons of wheat per year (Table VI-38). The market is being divided between Australia, Canada and France, with Argentina also sharing when supplies are available. Canada's share in the Chinese market, which has varied from 19 to 56 per cent in individual years, has on average been 38 per cent. Under the pressure of large stocks, competition for the Chinese market is very keen. In the absence of more complete information on Mainland China, it may be assumed that, so long as surplus rice can be exported and it is financially advantageous to import wheat for use in large centres of population which can be reached by ship, the current pattern of wheat purchases will continue. Canada will likely continue to maintain a fair share of the Chinese market, providing our wheat is competitively priced and Mainland China has reasonable access to the Canadian market for textiles and other exports.

Table VI-38

DISTRIBUTION OF EXPORTS OF WHEAT TO MAINLAND CHINA FROM PRINCIPAL EXPORTING COUNTRIES
1957 TO 1968

	Argentina	Australia	Canada	EEC	U.S.S.R.	Others	Total	Canada
								Per Cent of Total
(Thousand metric tons)								
1957	--	3	71	1	--	--	75	94.7
1958	--	9	45	--	--	--	54	83.3
1959	--	T	--	--	--	--	T	--
1960	--	1,175	775	10	--	--	1,960	39.5
1961	88	1,953	1,968	587	160	--	4,756	41.4
1962	98	2,059	1,678	990	46	--	4,871	34.4
1963	988	2,543	1,005	222	--	440	5,198	19.3
1964	599	2,253	1,758	399	--	45	5,054	34.8
1965	2,241	2,017	2,053	61	--	--	6,372	32.2
1966	306	2,163	2,465	73	--	--	5,007	49.2
1967	10	2,416	1,367	363	--	--	4,156	32.9
1968	--	1,396	2,127	253	--	--	3,776	56.3

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Factors Affecting Canada's Exports of Wheat

It is abundantly clear from the foregoing that Canada's competitive position in most wheat importing countries has deteriorated in recent years. It also appears that the principal factors influencing Canada's competitive position are quality, pricing, export subsidies, government-assisted export programs and market development.

Quality -- The term "quality" as it has been used in the foregoing comments relating to individual markets has referred particularly to the protein content of the wheat. In this connection, both the level of protein content and the variability or lack of uniformity of protein content in Canadian wheat shipments have been criticized.

Over the years, Canada's "Manitoba" wheats have developed a world reputation for a "quality" or "strength" of protein unequalled until recently, when it has been surpassed by some Russian wheats. The actual protein content has varied from year to year as well as between areas of production in Western Canada.^{1/} Over the 42 years for which records are available, the average protein content for the crop has varied from a low of 11.4 per cent in 1927 to a high of 15.1 in 1941. Within the last 14 years, the range in average protein has been from 13.2 per cent in 1966 to 14.9 per cent in 1964. The variation in protein content among the 5,788 samples of wheat tested from the 1968 crop ranged from a low of 8.9 per cent to a high of 18.5 per cent. The modal group was 14 per cent and the average protein content of the 1968 crop was 13.9 per cent. The average protein content of samples from the 1968 crop collected from each of the three provinces was: Manitoba 13.4 per cent, Saskatchewan 14.2 per cent and Alberta 13.1 per cent.

In the past, much of the variability of protein between areas of production was eliminated in most years by the mixing of carloads from different producing areas which occurred in the normal handling in terminal elevators. Technical information on protein content and other characteristics of wheat shipments has

^{1/} Board of Grain Commissioners for Canada, Canadian Wheat, Crop Bulletin No. 103, Grain Research Laboratory, Winnipeg, December 1968.

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been published regularly in cargo bulletins by the Grain Research Laboratory, Board of Grain Commissioners, for use by millers. So long as Canadian wheat was used as the main ingredient of a grist, the current method of grading was relatively satisfactory in most years. However, a greater participation by individual provincial wheat pools in the operations of terminal elevators in recent years has tended to narrow the areas from which wheats are mixed and to add to the protein variability between cargoes.

Most wheat importing countries now attempt to maximize the use of domestically grown soft wheat in their milling grist for flour for baking bread, while at the same time maintaining reasonable quality standards for their bread by using "strong" high protein wheat for blending. The lowest-cost combination of wheats which will provide the desired quality of flour is determined by the use of computers in the larger mills. One of the important requirements in this modern computerized approach in milling is a wheat which has a uniformly high protein content.

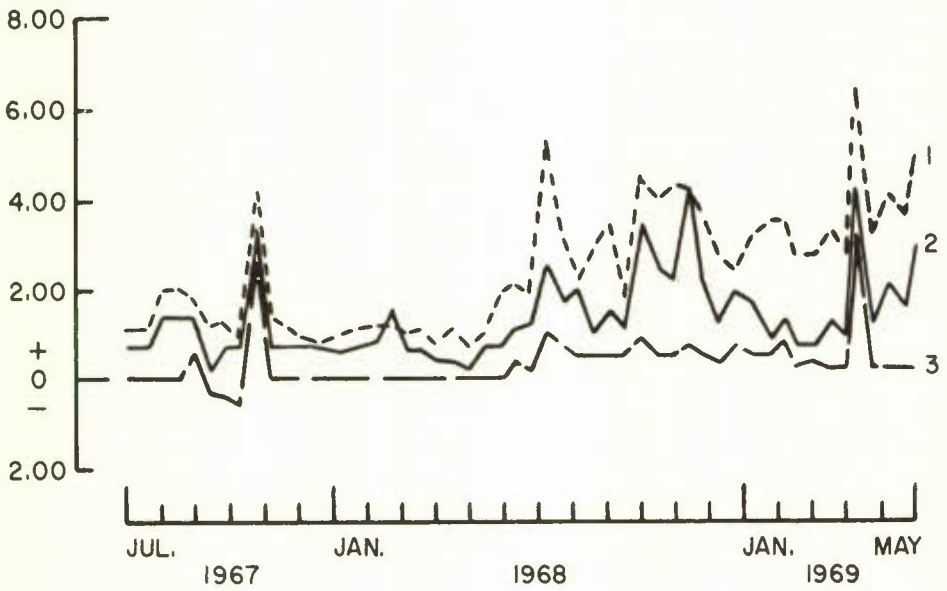
Since 1958, when the U. S. trade began to sell dark northern springs and hard winters on a guaranteed protein basis, Canadian wheat has suffered competitively in many markets. Some notion of the premium, which the market places on wheats with different percentages guaranteed protein, may be obtained from Chart II which shows the spread in the weekly c. i. f. prices at Rotterdam for No. 2 Hard Winter 12 per cent, 13.5 per cent, and 14 per cent over No. 2 Hard Winter Ordinary from July 3, 1967 to March 31, 1969. The premiums have varied greatly; the maximum differential, which was for the week of April 4, 1969, was U. S. \$3.20 per metric ton for 12 per cent protein, U. S. \$4.25 per ton for 13.5 per cent protein and U. S. \$6.45 for 14 per cent protein.

In order to evaluate the different wheats scientifically in the determination of the lowest-cost mixture, use is made of reports prepared by cereal chemists comparing measurements of such characteristics as nitrogen, protein, maltose, stability and strength determined from an analysis of samples of competing wheats as shown in Table VI-39. This sample report, made in early 1969, compares European and other non-European wheats with No. 2 Manitoba Northern. The report draws particular attention to the Russian wheats, which were the only ones included in this test, with a strength in the 90 to 100 range and a protein content of about 15 per cent, as a result of which they are described as having "excellent carrying power".

Chart II

PREMIUM PAID FOR GUARANTEED PROTEIN

(Prices c.i.f. Rotterdam
U.S.\$ per metric ton)



Bi-weekly price spread over U.S. No. 2 Hard Winter Ordinary

- 1 No. 2 Hard Winter 14%
- 2 No. 2 Hard Winter 13.5%
- 3 No. 2 Hard Winter 12%

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Table VI-39

AN EXAMPLE OF A CONSULTING CHEMIST'S REPORT COMPARING COMPETING WHEATS
ON THE BASIS OF FIVE CHARACTERISTICS SELECTED FOR BAKING QUALITY IN FLOUR

	Nitrogen Content	Protein Content (Per cent)	Maltose Content	Stability	Strength	
<u>Canadian No. 2 Manitoba</u>						
Average	2.38	13.57	2.6	90	70	
Maximum	2.44	13.91	3.2	99	79	
Minimum	2.33	13.28	2.2	84	67	
<u>Argentine Plate</u>						
Average	2.34	13.34	2.1	101	65	
Maximum	2.48	14.14	2.5	112	71	
Minimum	2.17	12.37	1.8	90	60	
<u>Russian</u>						
Average	2.55	14.54	2.5	108	87	
Maximum	2.67	15.22	2.9	134	110	
Minimum	2.48	14.14	1.5	88	64	
<u>U.S. Hard Winters</u>						
(3 Samples)	2.43	13.85	1.6	70	52	
	2.34	13.34	1.5	87	61	
	2.42	13.79	1.9	82	62	
<u>Australian</u>						
Average	2.41	13.75	2.1	71	43	
Maximum	2.49	14.19	3.0	71	48	
Minimum	2.29	13.06	1.8	64	36	
	Nitrogen Content	Protein Content (Per cent)	Maltose Content	Falling Time	Stability	Strength
<u>Spanish</u>						
Average	1.82	10.37	2.4	306	82	37
Maximum	1.90	10.83	2.9	337	96	41
Minimum	1.73	9.86	1.8	257	74	35
<u>Swedish</u>						
Average	1.62	9.23	2.4	214	90	35
Maximum	1.70	9.69	3.0	294	98	39
Minimum	1.53	8.72	1.8	154	81	33
<u>Hungarian</u>						
(2 Samples)	2.00	11.40	2.2	272	72	32
	1.87	10.66	2.3	309	70	35
<u>Dutch</u>						
(2 Samples)	1.80	10.26	3.6	101	55	26
	1.67	9.52	2.8	156	51	25
<u>English</u>						
Average	1.92	10.94	4.3	69	62	28
Maximum	2.32	13.22	6.0+	210	146	43
Minimum	1.65	9.41	2.1	2	29	14

Future Markets for Canadian Grains

The fact that provisions of the Canada Grain Act which defines Canada's statutory grades of wheat have not been amended since 1930, is an indication of extreme complacency with regard to Canada's wheat grading system. It is not surprising, therefore, that progressive changes by other exporters in the classification and grading of wheat have left Canada at a competitive disadvantage. It is imperative that action be taken urgently to review and amend Canada's wheat grading system, having regard particularly for such basic characteristics as protein, in order to maximize the competitiveness of Canadian wheat from a quality standpoint and to ensure that the individual farmer, who grows wheat of a quality which commands a premium on the market, is paid accordingly for it.

Pricing -- As the principal proponent of international co-operation in the marketing of wheat, with a demonstrated capacity to hold wheat off the market through both its extensive storage facilities and the operation of delivery quotas, Canada has made a major contribution over a long period of years to the stabilization of world wheat markets. With a product which was generally accepted as "the best wheat in the world" and the co-operation of other leading exporters in implementing a philosophy of price maintenance, the Canadian Wheat Board for years successfully provided leadership in establishing wheat export prices on an f. o. b. basis in country of origin, and has tended to adhere rather rigidly to the principle of "one price to all customers".

Since 1964, however, a number of changes have occurred. The United States has replaced its former policy of price supports and export subsidies by direct payments and free market prices, and, under pressure from the trade, has adopted an aggressive competitive pricing policy which has given rise to an international price war, with all exporters selling at prices well below the IGA minimum levels but with no aggregate increase in volume of sales. Australia has become a much more important competitor by virtue of its expanded production, higher quality wheats and the effectiveness of its destination pricing. Armed with EEC restitutions or export subsidies fixed at a level which will permit effective price competition on any market, France now also plays a vital role in price setting. At the same time, import markets have begun to question the level of quality differentials demanded

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for Manitobas in relation to the value of other wheats with a more specific system of quality classification which is better adapted for use in computerized milling.

Special costs relating to transportation, storage, or handling may be important in certain markets and become a vital factor in competitive pricing which cannot be anticipated or dealt with effectively when selling on an f. o. b. basis in country of origin. Possible advantages in chartering ocean freight and in the selection of "lowest-cost" routing may contribute to the effectiveness of competition. These and other types of evidence, including security of price information, support the use of a flexible pricing system, including destination pricing, in the marketing of Canadian wheat.

However, the complexities of wheat pricing and the institutional implications involved in any radical change in the pricing system are such that arrangements should be made forthwith for Canadian wheat pricing to be thoroughly studied by some outstanding, unbiased, international authority on the subject, as a basis for future policy decisions.

Export Subsidies -- The subsidization of exports of wheat and flour has been practised by the United States for many years and is also a well established part of policies under the EEC.

In the United States, part of the export subsidy formerly paid directly by the government now comes from higher prices paid by consumers for wheat used domestically. France, which is the principal wheat exporter in the EEC, is provided with "restitutions", or export rebates, paid in part from import levies, which are adjusted each week for each export market to a level that will allow French wheat to undercut the prices of the strongest competitor.

An indication of the range in the amount of export rebates on wheat exported by the EEC for different destinations during 1968 is presented in Table VI-40. This Table shows, for example, that during the year April 1, 1968 to March 31, 1969, the level of export subsidies for wheat exported by the EEC to other Western European countries varied from U. S. \$39. 50 to U. S. \$56. 00 per ton, a difference of U. S. \$16. 50 per ton. For purposes of comparison, it may be noted that during this same period, the actual

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average price for U. S. No. 2 soft red winters, c. i. f. Rotterdam, was about U. S. \$63.00 per ton. As already noted, export rebates are intended to cover the difference between internal EEC prices and world market prices, together with the cost of transportation to the destinations under consideration. If it can be assumed that the export rebate, even at its lowest point in the year, would be sufficient to refund the equivalent of the import levy and transportation costs, then it would seem reasonable to believe that the greater part of the difference between the lowest and highest rebate for a particular destination would be used to provide for competitive pricing.

Trade statistics are not available to indicate the relationship, if any, between the size of the range between the lowest and highest export rebates and the EEC sales of wheat to the particular markets involved. However, offers of wheat at reduced market prices can be as effective as actual sales in reducing the general level of prices.

More specific evidence of the competitive effect of EEC export rebates is available in the case of barley (Table VI-41). The most striking difference between the lowest and highest rebate on offerings to destinations in the same geographic region during the period was \$1.00 per ton for countries of Northeast Asia, excluding Japan, as compared with a difference of \$10.00 per ton for Japan. As applied to offerings of French barley to Japan, the export rebate provided by the EEC increased from U. S. \$42.00 on May 30, 1968 to \$52.50 between March 6 and 27, 1969. The more recent rate of export rebate, which is equal to U. S. \$1.14 per bushel, is more than 20¢ above the Canadian sale price for No. 1 feed barley for Pacific ports. The increase in export subsidies during this period, amounting to about 24¢ per bushel, has been used for competitive pricing, the results of which have changed the pattern of barley exports to Japan by replacing Canadian barley by barley from France. The recent institution of the sale of barley on a bid basis by the Canadian Wheat Board has resulted in increased movement of barley to Japan and some other markets.

Although the mechanism and source of funds used by the United States and the EEC are different, the competitive impact on other exporters is exerted in the form of offering prices which are lower than would have occurred if prices paid to producers on the domestic market were fully reflected in prices for export.

Table VI-40

RANGE IN AMOUNT OF EXPORT REBATES ON SOFT WHEAT EXPORTS BY EEC ACCORDING TO DESTINATION
DURING PERIOD JANUARY 1968 TO MARCH 1969
(\$U.S.)

Zone (1) or Country of Destination	Lowest Rebate		Highest Rebate		Difference Between Highest and Lowest Units of Account per Ton
	Units of Account per Ton	Date	Units of Account per Ton	Date	
Ia	47.50	Oct. 10 - Nov. 5, 1968	58.90	Feb. 8 - 13, 1968	11.40
Ib	46.00	Oct. 3, 1968	56.90	Feb. 1 - 13, 1968	10.90
II	43.75	July 31 - Sept. 9, 1968	53.25	June 28 - July 25, 1968	9.50
III	47.00	Oct. 10 - Nov. 5, 1968	48.00	Nov. 7 - 21, 1968	1.00
IIIa	55.50	Jan. 18 - 25, 1968	64.00	May 8 - 22, 1968	9.50
IIIb	45.50	July 31 - Sept. 12, 1968	62.00	May 16, 1968	16.50
IVa	45.50	July 31 - Sept. 12, 1968	53.45	March 6 - 27, 1969	7.95
IVb	48.50	Oct. 3 - Nov. 5, 1968	53.45	March 6 - 27, 1969	4.95
IVc	49.50	Oct. 10 - Nov. 5, 1968	58.90	Feb. 29 - March 14, 1968	9.40
Va	45.00	July 31 - Aug. 16, 1968	59.90	Feb. 1 - 13, 1968	14.90
Vb	45.00	July 31 - Aug. 16, 1968	58.45	Feb. 1 - 13, 1968	13.45
Vc	45.00	July 31 - Aug. 16, 1968	59.90	Feb. 1 - 13, 1968	14.90
United Kingdom	41.00	Sept. 12 - 26, 1968		Feb. 8, 1968	
Austria)		Nov. 28/68 - Jan. 3/69	56.00	Feb. 8, 1968	15.00
Switzerland)	39.50	July 31 - Nov. 5, 1968	56.00	May 8 - 16, 1968	16.50
Liechtenstein)					
Denmark	44.25	July 31 - Sept. 9, 1968	53.75	June 28 - July 25, 1968	9.50
Norway	44.00	July 31 - Sept. 9, 1968	53.50	June 28 - July 25, 1968	9.50
Portugal	45.50	Aug. 1 - Sept. 9, 1968	52.55	March 6 - 27, 1969	7.05
Japan	51.50	Aug. 1 - Oct. 30, 1968	51.50	Aug. 1 - Oct. 30, 1968	--
India	43.50	Sept. 2 - Nov. 5, 1968	54.00	June 25 - July 25, 1968	10.50
Mainland China	62.95	Jan. 4 - 25, 1968	63.90	Feb. 1 - 13, 1968	0.95
Other countries	43.00	July 31 - Sept. 9, 1968	58.50	May 2 - 16, 1968	15.50

(1) Zones: Ia - Near East; Ib - North Africa; II - Poland, U.S.S.R. (Baltic Sea ports); IIIa - Czechoslovakia, Hungary;
IIIb - Rumania, Bulgaria, U.S.S.R. (Black Sea ports); IVa - West and Central Africa; IVb - Mexico, Central America
and Caribbean Islands; IVc - South America; Va - South East Asia, Islands in the Indian Ocean; Vb - Other countries
and territories of Africa; Vc - Japan, other territories in Asia and Oceania not listed.

Source: Data compiled from EEC official journal.

Table VI-41

RANGE IN AMOUNT OF EXPORT REBATES ON BARLEY EXPORTS BY EEC ACCORDING TO DESTINATION
DURING PERIOD JANUARY 1968 TO MARCH 1969
(\$U.S.)

Zone(1) or Country of Destination	Lowest Rebate		Highest Rebate		Difference Between Highest and Lowest Units of Account per Ton
	Units of Account per Ton	Date	Units of Account per Ton	Date	
Ib	35.00	Jan. 18 - Feb. 1, 1968	43.50	May 2 - 16, 1968	8.50
II	34.00	Jan. 4 - 25, 1968	43.50	May 22 - 29, 1968	9.50
III	41.00	Aug. 22, 1968	42.00	July 25 - Aug. 16, 1968	1.00
IIIb	41.00	May 30, 1968	44.50	June 20, 1968	3.50
IVc	43.00	June 12, 1968	47.25	March 6, 1969	4.25
V	44.00	March 21, 1968	44.00	March 21, 1968	--
Vc	42.50	May 30, 1968	52.50	March 6 - 27, 1969	10.00
V (excl. Japan)	40.00	March 15, 1968	41.00	March 14, 1968	1.00
Japan	43.00	March 15, 1968	44.00	March 14, 1968	1.00
Austria)					
Denmark)					
Switzerland)	30.50	Jan. 4 - 25, 1968	42.30	June 20, 1968	11.80
Leichtenstein)					
United Kingdom)					
Austria)	40.00	Sept. 19 - Oct. 30, 1968	43.25	March 6 - 27, 1969	3.25
Switzerland)	43.50	Feb. 20 - 27, 1969	44.25	March 6 - 27, 1969	0.75
Leichtenstein)					
Switzerland)	39.00	Sept. 19 - Oct. 30, 1968	41.50	Jan. 3, 1969	1.50
Libya)	45.50	Jan. 9 - 31, 1969	47.25	Feb. 6, 1969	
Denmark)	40.50	Feb. 6 - 27, 1969	41.25	March 6 - 27, 1969	1.75
Other countries	33.00	Jan. 4 - 25, 1968	48.50	March 6 - 27, 1969	0.75
				March 27, 1969	15.50

(1) Zones: Ia - Near East; Ib - North Africa; II - Poland, U.S.S.R. (Baltic Sea ports); IIIa - Czechoslovakia, Hungary;
IIIb - Rumania, Bulgaria, U.S.S.R. (Black Sea ports); IVa - West and Central Africa; IVb - Mexico, Central America
and Caribbean Islands; IVc - South America; Va - South East Asia, Islands in the Indian Ocean; Vb - Other countries
and territories of Africa; Vc - Japan, other territories in Asia and Oceania not listed.

Source: Data compiled from EEC official journal.

Canada's Competitive Position in Wheat

The question as to how efficient producers, who are dependent on the export of wheat for their livelihood, are to defend themselves on world markets where export subsidization in some form is practised, has not been resolved, in spite of discussion in the GATT and other intergovernmental organizations for many years. Retaliation, while costly, cannot be ruled out as being a necessary course of action to maintain a fair share in some continuing markets which are vital to Canada.

Government-Assisted Export Programs -- The United States has been responsible for more than 85 per cent of the exports of wheat under government-assisted programs (Table VI-42). The competitive impact of these programs on other exporters has varied as between the type of program and recipient countries.

Since 1954, government-assisted programs have accounted for between 50 and 80 per cent of U. S. wheat exports each year but there is some indication more recently that these programs are being reduced (Table VI-43).

The most important program in terms of volume has been sales for local currency until Title I of PL 480, which have made up as much as 63 per cent of U. S. exports of wheat. It has been the principal arrangement under which wheat has been supplied to India, Pakistan, the United Arab Republic and Israel.

For past years, this program has had damaging effects on the exports of Canada and other countries in a number of markets that would otherwise have been supplied through regular commercial purchases. It is gradually being phased out and is being replaced by dollar sales on long-term credit terms.

Donations, which include direct assistance in cases of disaster or emergency relief and contributions to the World Food Program, have made up from 2 to 7 per cent of the total exports. This program has an element of "additionality" and therefore should not be damaging to other exporters providing it is properly administered, and supplies obtained for relief purposes are not diverted to commercial markets.

Table VI-42

WHEAT AND FLOUR EXPORTS UNDER SPECIAL PROGRAMS
1954 TO 1968

	United States			Canada			Australia			World		
	Under Special Program			Under Special Program			Under Special Program			Under Special Program		
	Total (Million metric tons)	Commercial (Per cent)	Total (Million metric tons)	Commercial (Per cent)	Total (Million metric tons)	Commercial (Per cent)	Total (Million metric tons)	Commercial (Per cent)	Total (Million metric tons)	Commercial (Per cent)	Total (Million metric tons)	Commercial (Per cent)
1954	7.5	4.3	42.7	6.9	0.1	98.6	2.5	T	26.4	4.4	83.1	
1955	9.3	6.6	29.0	7.9	0.7	91.1	2.8	--	28.2	7.3	74.1	
1956	14.9	10.2	31.5	7.7	0.3	96.1	3.4	T	32.6	10.5	67.8	
1957	11.0	6.9	37.2	8.6	0.9	89.5	1.6	T	32.4	7.8	75.9	
1958	12.1	8.2	32.2	8.2	0.6	92.7	2.0	T	35.2	8.9	74.7	
1959	13.8	10.2	26.1	7.5	0.4	94.7	3.2	T	36.8	10.6	71.2	
1960	18.0	12.6	30.0	9.3	0.9	90.3	5.0	T	42.7	13.5	68.4	
1961	19.5	13.5	30.8	9.9	2.9	70.7	6.3	--	47.5	16.4	65.5	
1962	17.3	13.4	22.5	9.0	2.2	75.6	4.8	--	43.5	15.6	64.1	
1963	23.1	13.9	39.8	15.1	1.8	88.1	7.8	--	56.4	15.7	72.2	
1964	19.6	15.3	21.9	11.9	4.0	66.4	6.5	0.2	51.2	19.4	62.1	
1965	23.4	15.9	32.0	14.8	3.3	77.7	5.7	0.2	62.5	19.3	69.1	
1966	20.2	11.3	44.0	14.8	4.6	68.9	7.0	0.2	56.3	16.1	71.4	
1967	20.5	12.8	37.6	8.9	2.3	74.2	7.0	0.2	51.9	15.3	70.5	
1968	15.0	8.6	42.6	8.7	3.6	58.6	5.6	0.2	45.1	12.8(1)	71.6	

(1) 1968 - Includes EEC donations of 355 thousand metric tons of wheat and flour.

Source: World Wheat Statistics, op. cit.; Review of the World Wheat Situation, op. cit.

Canada's Competitive Position in Wheat

Table VI-43

PERCENTAGE DISTRIBUTION OF U.S. EXPORTS OF WHEAT
ACCORDING TO TYPE OF EXPORT PROGRAM
1954 TO 1968
(Per cent)

	Commercial	PL 480				Other Foreign Aid	Total
		Title I	Title II	Title III	Title IV		
1954	42.2	8.7	6.2	17.0	--	26.0	100.0
1955	31.3	27.3	3.2	20.1	--	18.1	100.0
1956	31.1	36.6	2.3	18.0	--	12.1	100.0
1957	36.5	44.6	3.4	6.9	--	8.6	100.0
1958	31.8	51.6	2.6	9.1	--	4.9	100.0
1959	26.9	59.1	1.7	9.8	--	2.6	100.0
1960	35.2	49.5	4.7	9.8	--	0.8	100.0
1961	31.4	52.7	3.9	10.6	1.0	0.3	100.0
1962	25.5	63.3	3.9	6.3	0.9	0.2	100.0
1963	41.0	45.3	3.7	8.5	1.4	--	100.0
1964	21.5	60.9	2.7	6.7	8.2	--	100.0
1965	34.1	44.1	3.8	9.1	8.9	0.1	100.0
1966	50.0	29.0	7.0	9.1	5.1	0.2	100.0
1967	38.9	42.3	2.0	11.5	5.2	0.1	100.0
1968	46.6	36.6	2.9	10.8	2.9	0.2	100.0

Source: Economic Research Service, Food Grain Statistics, Statistical Bulletin 423, 1965, USDA, Washington; Wheat Situation, op. cit., August 1968 and August 1969.

Barter transactions under Title III of PL 480 have been particularly damaging competitively to other exporters. In the purchase of strategic material for stockpiling, it was possible to provide additional incentives to importing countries which, in effect, were discounts on wheat imported which could not be matched by other exporting countries and, therefore, resulted in a diversion of trade. The present barter program, which is not confined to strategic materials for stockpiling, but covers a broad range of commodities used by U. S. military and civilian personnel living abroad through which importing countries can make payment for imports of wheat, is a particularly damaging competitive device as has been demonstrated in Central America, Ecuador and Brazil.

Future Markets for Canadian Grains

Sales of CCC stocks on long-term dollar credit at subsidized interest rates were established under Title IV in 1959. This program, which accounted for 9 per cent of U. S. wheat exports in 1965, has resulted in diversion of what would otherwise have been cash sales. It has also forced other exporters to provide credit facilities with the sale of wheat in order to compete. Barter and CCC credit sales are at present reported under the International Grains Arrangement as commercial transactions.

Canada's government-assisted programs in the marketing of wheat have consisted of annual donations of wheat and flour to the Arab refugees under the UNRWA program and to governments of developing countries as well as to the World Food Program, together with the extension of credit. Donations have accounted for 2 per cent of Canada's exports of wheat since 1954. Exports in connection with which credit was provided under Section 21 of the Export Credit Insurance Act accounted for 4 per cent of Canada's wheat and flour exports, while government-guaranteed credit in connection with sales of wheat to Mainland China have made up 10 per cent of exports for this period.

Canada's financial contribution to international food aid since 1951 has amounted to \$422 million of which about \$344 million was for wheat and \$44 million for flour (Table VI-44). About \$7.3 million of the expenditure on wheat and flour was through the World Food Program and the balance was donations through bilateral programs. India was the largest recipient with about \$255 million worth of wheat and flour; Pakistan received over \$65 million worth of wheat; and Ceylon \$22.5 million worth of flour. Other recipients included Burma, Nepal, Cambodia, Indonesia and Vietnam in Asia, and Algeria, Ghana, Niger, Senegal and Tunisia in Africa.

Although the distribution of wheat and flour as an important part of Canada's foreign aid program will have general support, the question may well be raised as to whether wheat should not be distributed through carefully organized market development programs, which in addition to solving the problem of hunger, may develop new and continuing market outlets for Canadian wheat.

Canada's Competitive Position in Wheat

Table VI-44

EXPENDITURES ON WHEAT AND FLOUR IN CONNECTION WITH CANADA'S FOOD AID PROGRAM
1951 TO 1968
(\$ Million)

	Wheat and Flour	Other Commodities	Total Food Aid
1951	10.0	--	10.0
1952	10.0	--	10.0
1953	5.7	--	5.7
1954	0.8	--	0.8
1955	2.3	--	2.3
1956	0.6	--	0.6
1957	19.5	--	19.5
1958	27.5	--	27.5
1959	13.5	--	13.5
1960	14.9	--	14.9
1961	13.7	--	13.7
1962	4.7	--	4.7
1963	4.5	--	4.5
1964	20.1	--	20.1
1965	30.5	5.7	36.2
1966	89.9	10.5	100.4
1967	63.5	5.8	69.3
1968	56.2	3.2	59.4

Source: Compiled by Grain Division, Department of Industry, Trade and Commerce.

While credit terms provided in connection with the export of wheat are made possible because of government guarantees, no appreciable cost to the government has been involved. The United States does not report CCC credit sales as special transactions under the International Grains Arrangement. Australia provides credit facilities to Mainland China similar to those provided by Canada, but because of a technicality in the arrangement under which the credit guarantee is supplied directly by the Australian Wheat Board, these transactions have been reported as commercial while Canada's is registered with the IWC as concessional. The practice of including exports under either ECIC or direct government guarantees of credit as part of government-assisted programs tends to misrepresent Canada's government participation in wheat exports in relation to that of other exporters.

Future Markets for Canadian Grains

In this area there is a need for a careful study to be made of the types of Canadian government assistance that might best meet the needs of underdeveloped countries in importing wheat. This study should be carried on with a view to determining the contribution which such programs might make, not only to raising levels of nutrition, but also to market development through the stimulation of the consumption of wheat on a continuing basis.

Market Development -- Representations of the Canadian Wheat Board and the Board of Grain Commissioners, aided by Canadian Government Trade Commissioners, have done a reasonably effective job in maintaining a liaison with wheat importing countries both through visits to importing countries and by bringing representatives of those countries to Canada.

However, Canada has done little by way of special market development or research programs and, as a result, has fallen behind her competitors both in making adjustments to changing market conditions and in carrying out well-conceived public relations programs to stimulate the use of Canadian wheat. In this regard, a passing reference has already been made to efforts of the U. S. wheat producers' organizations in carrying out campaigns to stimulate the consumption of wheat products in a number of importing countries and in sponsoring training programs for their millers and bakers. Canadian producers should take particular note of the Australian research tax of one-quarter of a cent per bushel on all wheat delivered to the Australian Wheat Board to establish a fund which is matched by the Commonwealth Government to finance research on wheat. In the course of a few years, the results of such research and development work in Australia, much of which has been carried out by the Australian Bread Institute, have contributed to making Australia the strongest competitor in the world wheat market today.

Canadian wheat producers must realize that without continuing research as a basis for making progressive adjustments in their industry, the industry will stagnate. They can ill afford to continue to leave research and market development to the Government, or the Canadian Wheat Board, but must become actively involved in the determination of such programs and in their financing.

CHAPTER VII
THE EXPORT OUTLOOK
FOR WHEAT FLOUR AND DURUM WHEAT

Wheat Flour^{1/}

The production and export of wheat flour has been an important part of the total Canadian wheat trade.

During the years from 1952 to 1968, an average of just over 17 per cent of the total Canadian wheat production was made into flour in Canada. Annual flour production fluctuated between 2.9 million metric tons in 1952 and a low of 2.2 million metric tons in 1962, but as a result of purchases by the U. S. S. R. a record high of 3.2 million metric tons was recorded in 1963 (Table VII-1). Exports of flour fluctuated considerably from year to year during the 17-year period, and declined more or less steadily as a proportion of total wheat and flour exports. Canada's share of the world flour market varied from year to year during the years from 1952 to 1968, but showed a definite declining trend. During the first eight years of the period, Canada's share of the world flour trade was 23.1 per cent; during the last nine years the share was only 15.6 per cent. The domestic consumption of flour had a steady growth from about 1.3 million metric tons in 1953 to 1.7 million tons in 1968. As a result, with decreasing flour exports, the proportion of Canadian flour production consumed domestically increased steadily from about 47 per cent in 1952 to 72 per cent in 1968.

^{1/} The assistance of Maurice Hladik, Trade Commissioner Service, Department of Industry, Trade and Commerce, in the preparation of this section of the report is gratefully acknowledged.

Table VII-1

PRODUCTION, DOMESTIC CONSUMPTION AND EXPORT OF WHEAT FLOUR (WHEAT EQUIVALENT), CANADA
1952 TO 1968

Year	Total Canadian Wheat Production (Thousand metric tons)		Flour Production as Per Cent of Wheat		Exports of Wheat and Flour (Thousand metric tons)		Flour Exports as Per Cent of Exports of Wheat and Flour		Domestic Consumption as Per Cent of Flour Production		Total World Trade (Thousand metric tons)		Canada's Share of World Trade (Per cent)	
	Production	Total Flour	Production	Exports	Flour Exports	Flour Exports	Flour Exports	Domestic Consumption	Domestic Consumption	Flour Trade	World Flour Trade	World Flour Trade	World Flour Trade	World Flour Trade
1952	19,103	2,947	15.4	6,288	1,554	24.7	1,393	47.3	4,687	32.5				
1953	17,254	2,568	14.9	7,835	1,295	16.5	1,273	49.6	4,192	30.9				
1954	9,083	2,558	28.3	6,898	1,102	16.0	1,456	56.9	4,322	25.5				
1955	14,128	2,529	17.9	7,864	1,088	13.8	1,541	60.9	4,635	23.5				
1956	15,596	2,371	15.2	7,689	912	11.9	1,459	61.5	4,941	18.5				
1957	10,492	2,572	24.5	8,592	1,018	11.8	1,554	60.4	5,718	17.8				
1958	10,117	2,508	24.8	8,175	1,101	13.5	1,407	56.1	5,753	19.1				
1959	12,098	2,542	21.0	7,527	1,007	13.4	1,535	60.4	5,864	17.2				
1960	14,087	2,514	17.8	9,307	969	10.4	1,545	61.5	6,038	16.0				
1961	7,713	2,490	32.3	9,938	871	8.8	1,619	65.0	6,967	12.5				
1962	15,392	2,236	14.5	9,015	740	8.2	1,496	66.9	6,123	12.1				
1963	19,689	3,157	16.0	15,088	1,481	9.8	1,676	53.1	7,066	21.0				
1964	16,341	2,464	15.1	11,834	909	7.6	1,610	65.3	5,966	15.2				
1965	17,661	2,743	15.5	14,833	990	6.7	1,705	62.2	5,596	18.7				
1966	22,516	2,518	11.2	14,833	912	6.1	1,624	65.5	5,814	15.7				
1967	16,137	2,372	14.7	8,907	634	7.1	1,713	72.2	4,619	13.7				
1968	17,685	2,355	13.3	8,685	633	7.3	1,688	71.7	4,652	13.6				

Source: World Wheat Statistics, op. cit.; Review of the World Wheat Situation, op. cit.; Trade in Wheat Flour, Secretariat Paper No. 5, IWC, London.

Changes in Trade Patterns

Wheat flour is not a uniform and homogeneous commodity. The type of wheat used (hard, medium hard, soft or durum) and the milling process determine the type and grade of flour. The quality of a flour for commercial purposes is based on such factors as the rate of extraction, protein content, the percentage of ash, acidity and colour. Flours milled from Canada's hard spring wheat generally have commanded a premium which is primarily attributable to the protein characteristics of the wheat. Each country or area exhibits a unique consumer preference for certain types of flour. Usually this is based on the type of bread that is preferred. Confectionery, pastry, breakfast foods and alimentary pastes are made from flours of varying characteristics.

Technological advances in the milling industry have made possible the production of a wide range of flours from a single type of wheat. This has removed some of the significance formerly attached to wheat as a determinant of the type of flour. On the other hand, mechanization of the baking industry has generally required the inclusion of some high quality hard wheat in the milling grist. This requirement has been of benefit to Canadian wheat exports if not to the flour industry.

Following a period of relatively large exports in the late 1950's and early 1960's, the volume of flour traded in world markets has tended to decrease (Table VII-2). Flour has also declined as a proportion of total world wheat and flour exports.

Flour exports originate in only a few countries. In addition to Canada, the major wheat flour exporters are Australia, France, the Federal Republic of Germany, Italy and the United States. These six countries supply more than 90 per cent of the flour exported in most years. The competitive structure of world wheat flour trade has undergone a major change in recent years. The United States is the dominant country in the world flour market, sometimes supplying more than a third of the total flour exports (Table VII-3). However, the large U. S. exports include the extensive shipments made possible by government-assisted programs as well as those through regular commercial channels.

Future Markets for Canadian Grains

Table VII-2
WORLD EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT)
1950 TO 1968

	Wheat	Flour	Total Wheat and Flour	Flour as Per Cent of Total
	(Thousand metric tons)			
1950	20,963	4,422	25,385	17.4
1951	24,482	4,509	28,991	15.6
1952	21,378	4,687	26,065	18.0
1953	20,138	4,192	24,330	17.2
1954	23,452	4,322	27,774	15.6
1955	24,573	4,635	29,208	15.9
1956	31,135	4,941	36,076	13.7
1957	26,699	5,718	32,417	17.6
1958	29,964	5,753	35,717	16.1
1959	30,899	5,864	36,753	15.9
1960	36,665	6,038	42,703	14.1
1961	40,498	6,967	47,465	14.7
1962	37,530	6,123	43,653	14.0
1963	49,316	7,066	56,382	14.3
1964	45,231	5,648	50,861	12.5
1965	56,891	5,596	62,487	9.0
1966	50,319	5,814	56,133	10.4
1967	47,413	4,619	52,032	8.9
1968(1)	45,075	4,652		9.4

(1) Excluding EEC intra-trade.

Source: 1950 to 1962: Trade in Wheat Flour, op. cit.; 1963 to 1967: World Wheat Statistics, op. cit.; 1968: Review of the World Grains Situation, op. cit.

Nevertheless, U.S. exports of flour have decreased substantially in recent years, as have those of Australia and Canada. In 1963 and 1965, Canada's flour exports were relatively large because of a temporary market in the Soviet Union. Exports of wheat flour by France, Italy and the Federal Republic of Germany have increased considerably since the early 1950's.

Table VII-3

FLOUR EXPORTS OF MAJOR FLOUR EXPORTING COUNTRIES (WHEAT EQUIVALENT)
1950 TO 1968
(Thousand metric tons)

	Australia	Canada	France	Germany, F.R.	Italy	United States	Others	Total
1950	967	1,489	200	25	20	1,495	226	4,422
1951	1,022	1,414	280	42	3	1,363	385	4,509
1952	1,126	1,554	333	91	2	1,857	224	4,687
1953	959	1,296	392	66	6	906	463	4,088
1954	826	1,149	587	48	5	1,292	413	4,320
1955	840	1,016	711	357	33	1,370	308	4,635
1956	945	963	274	327	228	1,999	206	4,941
1957	606	1,078	580	640	322	2,141	359	5,726
1958	563	1,005	452	624	222	2,226	681	5,773
1959	681	996	454	769	180	2,468	316	5,864
1960	835	980	365	762	64	2,713	324	6,043
1961	736	865	497	1,091	122	2,987	669	6,967
1962	660	772	555	605	168	2,793	602	6,155
1963	901	1,489	484	1,004	147	2,553	499	7,077
1964	755	909	646	578	264	2,186	628	5,966
1965	525	990	725	492	397	2,004	463	5,596
1966	478	912	738	491	734	1,851	610	5,814
1967	513	634	601	458	214	1,394	805	4,619
1968	485	633		1,155(1)		1,648	731	4,652

(1) Total EEC.

Source: Trade in Wheat Flour, op. cit.; World Wheat Statistics, op. cit.; Review of the World Wheat Situation, op. cit.

Future Markets for Canadian Grains

In contrast to the small number of countries exporting flour, there are large numbers of importers, many of which are relatively small. On a regional basis, flour markets have undergone major changes in recent years; some areas having declined in importance as importers while others have expanded (Table VII-4). Western Europe has steadily declined from a market which accounted for 29 per cent of the total flour moving in world trade during 1950/1952 to only 10 per cent during 1964/1966. On the other hand, Africa's imports of flour expanded from 11 per cent to 28 per cent of the total flour trade. These two opposing trends are of almost identical magnitude and tend to offset each other.

Table VII-4

STRUCTURE OF WORLD FLOUR IMPORT MARKET
AVERAGE 1950/1952, 1960/1962, 1964/1966

Destination	Imports of Flour			Per Cent		
	Thousand Metric Tons - Wheat Equivalent					
	1950/1952	1960/1962	1964/1966	1950/1952	1960/1962	1964/1966
<u>Europe</u>						
Western	1,300	1,057	518	28.8	18.8	10.0
Eastern	--	73	34	--	1.3	0.7
<u>America</u>						
Central	728	605	728	16.1	10.7	14.1
South	379	253	375	8.4	4.5	7.2
<u>Asia</u>						
Near East	245	720	516	5.4	12.8	10.0
Far East	1,222	1,479	1,459	27.1	26.2	28.2
<u>Africa</u>						
Africa	503	1,390	1,487	11.1	24.6	28.7
Oceania	30	60	57	0.7	1.1	1.1
Unspecified	108	--	--	2.4	--	--
Total	4,515	5,637	5,174	100.0	100.0	100.0

Source: Trade in Wheat Flour, *op. cit.*; World Wheat Statistics, *op. cit.*

Export Outlook for Wheat Flour and Durum

The Near East's imports of flour increased from 5 per cent of the world market during 1950/1952 to 13 per cent during 1960/1962, following which they have decreased somewhat. Other importing areas such as Eastern Europe, Central and South America, the Far East and Oceania have changed little in their relative importance as flour importers.

Besides the geographic shifts in markets, changes have also occurred in the distribution of flour imports by countries grouped according to economic structure. Imports by developed countries from the six major exporters declined rapidly during the period 1962 to 1968, to a level less than one-third that of the first two years for the period (Table VII-5).

The Canadian position is of particular interest. There was a steady decline in Canadian flour exports to developed countries, from a high of 392 thousand metric tons in 1962 to only 75 thousand metric tons in 1968. The Canadian position with exports to the developing and centrally planned countries is not so unfavourable. Annual exports to developing countries remained at a reasonably stable level of about 300 thousand metric tons. Imports from Canada by the centrally planned countries increased temporarily to a high level in 1963 as a result of abnormally large imports by the Soviet Union, but declined to a much lower but fairly stable level thereafter.

Since 1954, government-assisted programs on the part of Canada, the United States, and to a lesser extent Australia have accounted for a significant proportion of total flour exports. The significance of these programs with respect to Canada and the United States is indicated in Table VII-6. United States government-assisted flour exports amounted to more than two million metric tons (wheat equivalent) in three of the 15 years. In relative terms, this represents about a third of total world flour trade and 70 to 80 per cent of the U. S. flour exports. There has, however, been a decrease in U. S. flour exports from a peak of more than 2.2 million tons in 1961 to 1.0 million tons in 1968.

Canadian government-assisted flour exports have fluctuated from year to year between 14,000 metric tons (wheat equivalent) in 1954 and 142 thousand metric tons in 1966, or from 1.3 to 15.9 per cent of total flour exports.

Future Markets for Canadian Grains

Table VII-5

DISTRIBUTION OF WHEAT FLOUR EXPORTS BY SOURCE
AND ECONOMIC GROUPINGS OF IMPORTING COUNTRIES (WHEAT EQUIVALENT)
1962 TO 1968

(Thousand metric tons)

	1962	1963	1964	1965	1966	1967	1968
<u>Developed countries</u> (1)							
Australia	85	62	57	42	25	14	12
Canada	392	372	313	269	189	84	75
France	51	39	31	35	36	34	
Germany, F.R.	140	305	61	46	61	28	28(4)
Italy	12	21	1	--	1	2	
United States	361	314	269	167	70	44	43
Others	22	86	60	165	185	94	112
Total	1,063	1,199	792	724	567	300	270
<u>Developing countries</u> (2)							
Australia	569	670	669	488	424	466	473
Canada	380	329	329	366	372	270	204
France	495	251	501	556	542	567	
Germany, F.R.	319	197	504	416	422	430	1,127(4)
Italy	156	45	264	321	733	212	
United States	2,405	2,218	1,883	1,810	1,757	1,332	1,591
Others	292	248	129	209	330	507	456
Total	4,616	3,958	4,279	4,166	4,580	3,784	3,851
<u>Centrally planned countries</u> (3)							
Australia	6	169	--	--	--	--	--
Canada	--	788	203	329	351	280	354
France	9	194	114	121	160	--	--
Germany, F.R.	146	502	14	30	8	--	--
Italy	--	81	--	34	--	--	--
United States	22	21	22	26	24	18	14
Others	223	154	224	75	90	237	163
Total	406	1,909	577	615	633	535	531

(1) Includes Western Europe, Japan, South Africa and New Zealand.

(2) Importing countries not included in (1) or (3).

(3) Includes Eastern Europe, U.S.S.R., Cuba, Mainland China, North Korea and Mongolia.

(4) Total EEC.

Source: Review of the World Wheat Situation, op. cit.; Review of the World Grains Situation, op. cit.

Export Outlook for Wheat Flour and Durum

Table VII-6

CANADA AND UNITED STATES
FLOUR EXPORTS UNDER GOVERNMENT-ASSISTED PROGRAMS
1954 TO 1968

	Canada		United States	
	Thousand Metric Tons - Wheat Equivalent	Per Cent of Total Flour Exports	Thousand Metric Tons - Wheat Equivalent	Per Cent of Total Flour Exports
1954	14	1.3	22	1.8
1955	19	1.7	132	9.8
1956	22	2.4	528	26.9
1957	97	9.5	705	33.0
1958	88	8.0	1,007	46.0
1959	46	4.6	1,619	65.7
1960	133	13.7	1,908	70.3
1961	46	5.3	2,248	74.9
1962	19	2.7	2,156	77.2
1963	44	3.0	2,134	80.0
1964	27	3.0	1,807	79.2
1965	87	8.8	1,590	78.7
1966	142	15.6	1,019	54.6
1967	101	15.9	1,055	75.0
1968	57	9.0	1,052	67.5

Source: 1954 to 1962: Trade in Wheat Flour, op. cit.; Review of the World Grains Situation, op. cit.; Grain Division, Department of Industry, Trade and Commerce.

The effect of these large government-assisted export programs on potential commercial sales is a matter of importance which cannot be easily determined. Undoubtedly there have been many cases where import demand, which was filled by shipments under special programs, could have been supplied commercially by the United States or some other exporter. However, the consensus is that a large part of assisted flour exports were additional and would not have been made on a commercial basis.

Future Markets for Canadian Grains

Flour Prices

Generally, the price of the wheat used in its manufacture, the value of the by-products, cost of additives, milling costs, and distribution and selling costs determine the price of flour. The intense competition in world flour markets, particularly by the subsidized exports of France, Italy and the Federal Republic of Germany, has tended to keep flour prices down.

Flour prices are also influenced by the degree of competition in the particular importing area. Generally, average imported flour prices are progressively lower in the following areas: Tropical Africa, Latin America, the Far East and Western Europe. These relative prices can be attributed to a tendency for tropical countries to import quality flour of high protein content mainly because of their good keeping characteristics in tropical climates, and to severe competition among domestic milling industries in Western Europe. In general, Canadian flour is the highest priced while German flour is the lowest. Because of the characteristics of the wheat, Australian flour has consistently been priced below that of North America, although still higher than that of Europe (Table VII-7). The United States exports a broad variety of flours, each of which is priced according to quality.

Table VII-7
AVERAGE ANNUAL EXPORT PRICES FOR WHEAT FLOUR
1962 TO 1968
(U.S. \$ per metric ton)

	<u>Canadian(1)</u>			<u>Australian(2)</u>	<u>Italian(3)</u>	<u>United States(4)</u>	
	Basic Grade	Bakers Patent	Top Patent	Best Roller Flour 72%	1st Class Flour 0.60% Ash	11% Protein	
						0.50% Ash	0.46% Ash
1962	--	93.92	--	78.32	72.40	86.89	88.04
1963	--	91.13	--	83.96	77.18	85.89	86.93
1964	98.82	102.13	105.99	81.93	77.04	79.45	80.56
1965	96.45	99.76	103.62	82.66	72.82	68.68	69.85
1966	100.83	104.14	107.99	82.02	71.10	75.85	76.95
1967	95.55	97.87	101.38	80.52	73.09	72.62	73.72
1968	94.01	94.96	98.26	79.96	n.a.	74.70	75.85

(1) F.a.s. prices Montreal and Halifax for main English ports.

(2) In 150 lb. jute bags, f.o.b. Australian ports.

(3) F.o.b. Italian ports or free Italian border.

(4) F.a.s. Gulf ports in export cotton bags.

Source: Review of the World Grains Situation, op. cit.

Trends in the Flour Milling Industry

There have been many changes in the world's flour milling industry during the past two decades. These include technological innovations, mill expansion, industry consolidation in developed countries and the construction of new mills in developing countries.

Developed Countries -- A noticeable change in the flour milling industry in the developed countries is the decline in the number of mills. For example, in the United States and Japan mill consolidation reduced the number of mills by about 85 per cent during a period of 20 years (Table VII-8). Canadian flour mills decreased in number from 399 in 1948 to 55 in 1968.

Technological change was a major cause of the decrease in the number of flour mills in developed countries. Large-scale milling operations were necessary for the effective implementation of new milling techniques. Many small mills could not take advantage of the new developments and were forced to close.

The modernization of the milling industry has resulted in over-capacity in some countries. The problem has been aggravated by a decline in the per capita consumption of bread and other flour products in many developed countries and a leveling off, or in some cases an actual decrease, in total flour consumption.

Considerable vertical integration has occurred in the milling industry. It is increasingly common for flour mills and bakeries, and feed mills and even livestock production to be linked in the same enterprise. The United States and the United Kingdom were the forerunners in this development but the trend is evident in Canada, Australia, South Africa and the Netherlands.

Future Markets for Canadian Grains

Table VII-8

CHANGES IN THE NUMBER OF FLOUR MILLS IN ADVANCED COUNTRIES

	Early Reporting Year	Number of Units	Recent Reporting Year	Number of Units
Austria	--	--	1960	936
Belgium	1956	175	1964	130
Finland	1954	279	1963	228
France	1953	7,585	1964	3,515
Germany, F.R.	1952/53	13,141	1962/63	7,151
Greece	--	--	1964	63
Hungary	1951	1,649	1961	454
Italy	1954	1,893	1964	1,831
Netherlands	1952	430	1963	128
Norway	1936/38	14	1961	12
Poland	1950	268	1960	227
Portugal	1950	79	1963	73
Spain	1953	1,924	1964	1,731
Sweden	1953	2,325	1963	1,323
Switzerland	1957	294	1963	261
United Kingdom	1954	201	1958	191
Canada	1948	399	1968	55
United States	1948	2,160	1968	349
Argentina	1950	185	1962	157
Japan	1950	3,100	1963	491
South Africa	1950/51	764	1962/63	216
Australia	1950/51	165	1962/63	118
New Zealand	1950/51	42	1963/64	34
U.S.S.R.	1940	371	1956	361

Source: Trade in Wheat Flour, *op. cit.*; The Northwestern Miller, January 1969, p. 11.

Export Outlook for Wheat Flour and Durum

Developing Countries -- In the developing countries, the flour milling industry has had a different development in the wheat producing countries than in the nonwheat producing countries. Those countries that produce a sizable proportion of their bread wheat requirements have traditionally had their own milling industries. The general tendency has been for the flour industry to expand in relation to domestic demand. Thus, with the notable exception of the United Arab Republic which has become a major flour importer, the wheat producing developing countries provide only a limited market for flour from the exporting countries.

The major trend in those developing countries which produce little or no wheat has been the construction of flour mills. This trend has been accompanied by increasing imports of wheat and lessening imports of flour. The number of mills constructed in some developing countries in recent years, along with their capacity, is shown in Table VII-9. Many of these mills were constructed with foreign capital provided by milling equipment manufacturers in such countries as the United Kingdom, Germany and Switzerland. In addition, large flour milling companies in the United States have established overseas operations, particularly in Venezuela and Central America. The governments of these countries have generally encouraged the construction of the mills, and have set up protective measures such as high tariffs with control and licensing of flour imports, while allowing free entry of wheat. This development has been a major cause of reduced flour exports to those countries. There have been instances where flour offered under special government programs was declined by countries with a newly acquired milling industry. A group of Latin American, African and Asian countries, where flour mills have been established in recent years, increased their aggregate wheat imports from 17 thousand metric tons in 1950 to 2.6 million metric tons in 1967 (Table VII-10). The flour imports of these countries showed a declining trend until 1963 and, largely as a result of government-assistance programs, an increasing trend since that year.

The developing countries as a whole do not provide exporting countries with prospects for an expanding commercial flour market.

Future Markets for Canadian Grains

Table VII-9

FLOUR MILLS BUILT SINCE 1954 IN DEVELOPING COUNTRIES

	Number of Mills	Commenced Operations	Daily Capacity (Cwt.)
Costa Rica	1	1967	4,000-5,000
Cuba	2	1956, 1958	7,000
Dominican Republic	1	1960	4,300
El Salvador	2	1961, 1962	2,170
Ecuador	2	1955, 1961	4,000
Guatemala	3	1955-1962	8,000
Haita	1	1958	3,500
Honduras	2	1958, 1960	--
Jamaica	1	1968	3,000
Nicaragua	1	--	--
Panama	2	1963	2,400
Peru	1	1962	2,000
Trinidad	1	1966	3,000
Venezuela	13	1957-1961	16,000
Cyprus	1	1965	1,000
Kuwait	1	1965	2,500
Ivory Coast	1		3,400
Angola	2	1960, 1962	1,500
Ghana	1	1967	2,500
Libya	1	1959	800
Nigeria	1	1962	8,500
Rhodesia	1	1960	100
Senegal	1	1956	--
Sierra Leone	1	1967	--
Uganda	1	1956	4,200
Sudan	2	1961	4,800
Ceylon	1	1968	--
Hong Kong	4	1954-1967	--
Malaysia	3	--	--
Pakistan	1	1959	1,700
Philippines	6	1958-1964	15,500
Thailand	1	1965	--
Japan	3	first in 1955	5,670
Singapore	2	1963	--

Source: D. Murphy, Secretary, Canadian National Millers Association; Trade in Wheat Flour, op. cit., March 1965.

Export Outlook for Wheat Flour and Durum

Table VII-10

IMPORTS OF WHEAT AND FLOUR OF SELECTED COUNTRIES⁽¹⁾
WHERE FLOUR MILLS HAVE BEEN ESTABLISHED
CROP YEARS 1950 TO 1967

(Thousand metric tons - wheat equivalent)

	Wheat	Flour
1950	17	970
1951	89	966
1952	161	963
1953	265	885
1954	321	1,059
1955	383	988
1956	503	1,054
1957	628	1,178
1958	781	877
1959	1,199	710
1960	1,401	504
1961	1,879	523
1962	2,034	503
1963	2,002	312
1964	2,518	596
1965	2,539	643
1966	2,621	701
1967	2,617	664

(1) Latin America: Cuba, Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Panama, Venezuela. Africa: Angola, Mozambique, Ivory Coast, Nigeria, Senegal, Sudan. Asia: Taiwan, Hong Kong, Philippines.

Source: World Wheat Statistics, op. cit.

National Policies Influencing World Trade in Flour

All countries, both exporters and importers, have a wide spectrum of policies that affect the international flour trade. There are some general aims that appear to be universal, although the means for achieving them may differ. Flour import regulations established by importing countries include tariffs, import licensing and levies. Most exporting countries offer some form of export subsidy. In general, importing countries with a milling industry have a relatively high level of protection on flour compared with that on wheat. As a result, imports of flour tend to be small and

Future Markets for Canadian Grains

wheat is imported to supply the domestic mills. Some wheat importing countries with excess milling capacity encourage the export of flour manufactured at least partly from imported wheat through a system of subsidies. Similar arrangements exist in some wheat exporting countries which have excess milling capacity. Because of the intense competition in the world flour trade, the export aids on flour tend to be greater than on wheat.

Canada's Position as a Flour Producer

As in most developed countries, the Canadian milling industry has excess capacity. The Department of Industry, Trade and Commerce recently estimated the excess capacity in Canada at about 20 per cent. This excess capacity is not spread uniformly throughout the industry but affects mills in Western Canada more severely than those in Eastern Canada. The western mills have a traditional dependence on the overseas market, almost half of their production of flour being for export. On the other hand, mills in Ontario and Quebec ship 85 per cent of their flour to domestic markets. Any decline in flour exports thus causes concern for the continued existence of many mills in Western Canada. The smaller mills of Central Ontario also face a doubtful future unless export orders are forthcoming.

Canada's Competitive Position as an Exporter of Flour

With the exception of the years 1963 and 1965 when there were large exports of flour to the Soviet Union, there has been a decreasing trend for exports of Canadian flour during the past two decades.

Of the traditional markets, the United Kingdom was foremost as a flour importer until the past six years, during which period purchases declined sharply. This decline was due to decreased consumption and to competition from an expanding milling industry within the United Kingdom, rather than from other flour exporters. The Philippines and Venezuela, which together formerly took 25 per cent of Canada's total flour exports, have been a declining flour market as a consequence of developing their own milling industries.

Export Outlook for Wheat Flour and Durum

Offers of Canadian aid in the form of flour frequently are not received with enthusiasm in developing countries, which have sufficient milling capacity to provide their flour requirements. Such countries want food aid in the form of wheat, not flour.

Changes in baking techniques have also affected Canada's position as a flour exporter. Canada produces a "strong" flour ideal for certain types of bread but particularly suited for small baking establishments with a minimum of skill and equipment. With the advent of semi-automatic bakeries using "mellow" flours, the competitive advantage of Canadian flour is considerably lessened.

Canadian flour exports have declined in relative as well as absolute terms. This decline in exports can be attributed to dwindling export market demand and a much more intensive competition from other exporting countries for those reduced market outlets.

The Canadian flour industry faces keen competition in international flour markets, particularly from the United States, Australia, France, Italy and the Federal Republic of Germany. Unlike other major flour exporters, Canada has no active subsidy program to protect the milling industry.

A large part of the U.S. flour exports are under some form of government-assistance program. Although some of these special programs are a form of direct competition for what might otherwise be commercial markets, some countries would not have imported this flour without such assistance. If flour exports are adjusted for this factor, they show a much larger decrease in the total amount of flour traded. Canada's cash sales of flour are larger than those of the United States. However, the subsidy on U.S. export flour places Canada in a disadvantageous position with respect to price.

Of the other major competitors, Australia appears to have suffered in a manner similar to Canada. However, Australia has increased the subsidization of flour exports in an attempt to arrest the decline in exports.

Future Markets for Canadian Grains

The Federal Republic of Germany, France and Italy have had considerable success in increasing export flour sales. This was achieved largely through subsidy programs that permitted very competitive prices. The increased export competition from Germany indirectly has had some beneficial effect on Canada's wheat exports. Germany allows wheat imports free of restrictions in amounts comparable to flour exports, so the German flour in competition with Canadian flour on world markets is sometimes a blend containing Canadian wheat.

There are no indications of a major change in world flour markets that will be favourable to flour exporters. Most nations of the world, both developed and developing, are striving for self-sufficiency in the production of flour. Excess milling capacity exists in flour exporting countries. To compound this problem, there has been a noticeable decline in the per capita consumption of flour products in the developed countries, which the increase in population cannot completely counteract. Although Canadian wheat commands a premium for the quality it imparts to blended flours, the price position of straight Canadian flours has been weakened by technological advances in the milling industry. The "strong" flours which are characteristic of Canada are now less essential to produce quality bread. It must be concluded, therefore, that the future of Canada as a flour exporter is not good.

Durum Wheat^{2/}

Durum wheat (Triticum durum) has a special position in the world wheat economy because of the nature of its end use in many countries. It is a very hard, highly vitreous wheat, particularly suitable for the manufacture of semolina from which the many pasta products, such as spaghetti and macaroni, are made. In general, there has been a tendency for per capita consumption of pasta to rise in most countries.^{3/}

^{2/} The assistance of Richard Groundwater, Trade Commissioner Service, Department of Industry, Trade and Commerce, in the preparation of this section of the report is gratefully acknowledged.

^{3/} Durum Wheat, Secretariat Paper No. 3, IWC, London, 1963.

Export Outlook for Wheat Flour and Durum

Durum wheat is grown in regions with a hot, dry growing season, often on the low rainfall margin of wheat cultivation. It is an important type of wheat in North Africa and the Near East, and in Italy, France and Spain. Although it makes up a relatively small proportion of total wheat production in Canada, the United States and Argentina, these three countries provide most of the supplies of durum wheat for export.

The World Situation

Durum wheat is grown in many countries but the greater part of the production takes place in Argentina, the United States, Canada, the countries of the Mediterranean basin, and certain areas in the Soviet Union. A characteristic of its production has been its uncertain supply. The market history for durum shows periods of scarce supplies with relatively high prices followed by increased production, surpluses and relatively low prices.

Most durum wheat is grown in semi-arid regions, as a result of which production fluctuates from year to year with changes in weather. Partly because of the conditions under which it is grown, average yields per acre are generally lower than for other wheats. When durum is grown in areas of more moisture, the yields are higher but the durum kernels are not so "vitreous" and therefore less suitable for semolina.

Few countries separate durum from other wheats in their crop statistics. Reliable data on yields and production are therefore not available but estimates suggest that, excluding the centrally planned countries, annual production has been between 12 million and 15 million metric tons in recent years (Table VII-11). The few statistics available do not show any consistent trends in durum production, rather they point up the great fluctuations that occur in yields.

Trade -- The quantity of durum traded on international markets fluctuates from year to year, but there has been an upward trend from the annual average of 1.4 million metric tons during 1959/1963 to 2.5 million metric tons in 1966 (Table VII-12).

Future Markets for Canadian Grains

Table VII-11

PRODUCTION OF DURUM WHEAT IN PRINCIPAL COUNTRIES
 AVERAGE 1959/1963; ANNUAL 1963 TO 1968
 (Thousand metric tons)

	Average 1959/1963	1963	1964	1965	1966	1967	1968
Southern Europe	2,180	2,570	2,200	2,700	2,600	3,500	3,000
France	69	65	62	92	127	221	284
Italy	1,567	1,850	1,462	1,948	1,675	2,573	2,060
Portugal	119	97	77	86	37	66	75
North America	1,980	2,870	2,770	2,365	2,480	2,348	3,875
Canada	909	1,453	915	460	773	550	1,208
United States	1,071	1,415	1,855	1,905	1,705	1,796	2,667
South America	524	620	703	419	516	532	480
Argentina	524	620	703	419	516	532	480
Near East Asia	4,257	5,400	4,600	4,700	4,700	5,800	4,100
Syria	912	1,190	1,277	1,040	559	1,049	600
North Africa	2,144	2,700	2,300	2,450	1,900	1,990	2,500
Algeria	1,026	1,268	918	1,001	900	899	1,000
Morocco	746	890	889	1,009	615	850	--
Tunisia	372	530	350	420	300	240	310
Others	682	600	600	600	600	600	600
WORLD (excluding centrally planned countries)	11,772	14,760	13,173	13,234	12,796	14,770	14,555

Source: World Wheat Statistics, op. cit.

Export Outlook for Wheat Flour and Durum

Only Canada, the United States and Argentina have been consistent annual exporters. Historically, Canada has been the world's largest exporter of durum wheat but Canada's exports have been exceeded in 1966, 1967 and 1968 by the United States and in 1967 by Argentina also. Other countries that exported small quantities in recent years are France, Italy, Greece, Algeria, Syria and Tunisia. Most of the durum wheat grown in these countries is consumed domestically, exports occurring only occasionally in the event of surpluses. During the past decade, durum wheat exports have been from 2 to 4 per cent of total wheat exports.

Table VII-12

EXPORTS OF DURUM WHEAT AND FLOUR⁽¹⁾ BY PRINCIPAL EXPORTING COUNTRIES
AVERAGE 1959/1963; ANNUAL 1963 TO 1968

(Thousand metric tons)

	Average 1959/1963	1963	1964	1965	1966	1967	1968
EEC ⁽²⁾	5	2	--	1	30	30	13
Greece	--	--	--	70	164	181	n.a.
Spain	23	--	--	--	--	--	10
Canada	646	673	928	874	730	348	528
United States	263	762	293	760	1,193	838	1,230
Argentina	261	318	789	498	403	406	n.a.
Algeria	--	--	34	3	--	--	n.a.
Syria	36	11	18	2	--	--	n.a.
Tunisia	59	131	17	103	1	1	n.a.
Morocco	50	--	--	--	--	--	n.a.
Others	16	5	3	--	--	1	368
WORLD ⁽²⁾	1,359	1,902	2,082	2,311	2,521	1,805	2,149

(1) Does not cover trade between non-member countries of IWA.

(2) Excluding EEC intra-trade.

Source: 1959 to 1967: World Wheat Statistics, *op. cit.*; 1968: Record of Operations, IWC, London.

Future Markets for Canadian Grains

The countries of the European Economic Community together form the largest and most consistent import market for durum wheat, taking from 50 to 75 per cent of the total imports each year (Table VII-13). Switzerland and Portugal also import some durum wheat each year. A number of other countries, where pasta is an important part of the diet, import small quantities in some years. The amount and frequency of these imports varies with the yields of the domestic crop.

Durum wheat prices in international markets move independently of those of other wheats and they have generally been at a premium.

Since the early 1950's, durum wheat prices in international markets have moved for considerable periods independently of those of other wheats. Since there is a preference for durum for the manufacture of alimentary pastes, millers have been willing to pay a premium over other high quality wheats, irrespective of the supply situation. At the same time the variability of supply, the stable consumer demand and the alternating surpluses and severe shortages of durum wheat have resulted in wide fluctuations in durum prices, often at variance with the price movements of other wheats. The international prices of durum wheat have depended largely on the supply position in the three major exporting countries, particularly Canada. In years when supplies available for export were limited, such as between 1952 and 1955, and in 1961, international durum prices were at very high levels and commanded a substantial premium over other wheats. By way of contrast, during the periods 1957 to 1960 and since 1962, supplies were abundant and durum prices were at only a slight premium over other wheats.^{4/}

^{4/} For a discussion of export prices of durum wheat, see Durum Wheat, op. cit.

Export Outlook for Wheat Flour and Durum

Table VII-13

EXPORTS OF DURUM WHEAT AND FLOUR BY COUNTRY OF DESTINATION
FROM PRINCIPAL EXPORTING COUNTRIES
AVERAGE 1959/1963; ANNUAL 1963 TO 1968

	Exporting Countries					Canada as
	Argentina	United States	Other	Canada	Total	Per Cent of Total
	(Thousand metric tons)					
<u>Austria</u>						
Average 1959/1963	--	--	--	12	12	100.0
1963	--	3	--	9	12	75.0
1964	--	--	--	19	19	100.0
1965	--	--	--	17	17	100.0
1966	--	4	--	17	21	84.3
1967	--	--	--	17	17	100.0
1968	--	--	--	21	21	100.0
<u>EEC countries</u>						
Average 1959/1963	199	125	172	488	983	49.6
1963	281	114	129	314	838	37.5
1964	518	230	63	334	1,145	29.2
1965	471	472	142	301	1,386	21.7
1966	332	447	94	336	1,209	27.8
1967	364	382	130	172	1,052	16.3
1968	316	808	27	350	1,501	23.3
<u>United Kingdom</u>						
Average 1959/1963	3	--	--	12	15	80.0
1963	2	1	--	6	9	66.7
1964	7	1	--	7	15	46.7
1965	9	56	--	10	75	13.3
1966	3	223	5	18	249	7.2
1967	3	6	4	8	21	38.1
1968	1	5	3	9	18	50.0
<u>Switzerland</u>						
Average 1959/1963	6	9	4	63	83	76.8
1963	5	30	--	70	105	66.7
1964	3	18	6	70	97	92.8
1965	3	20	--	87	110	79.1
1966	6	30	7	80	123	65.0
1967	--	30	12	50	92	54.3
1968	--	26	16	71	113	62.8
<u>Eastern Europe</u>						
Average 1959/1963	--	--	--	156	156	100.0
1965	--	--	--	67	67	100.0
1966	--	--	--	91	91	100.0
1967	--	--	--	70	70	100.0
1968	--	--	--	22	22	100.0
<u>U.S.S.R.</u>						
Average 1959/1963	--	581	--	262	843	31.1
1964	200	--	--	--	200	--
1965	5	--	--	270	275	98.2
1966	5	--	--	122	127	96.1
1967	--	--	--	28	28	100.0
1968	--	--	--	15	15	100.0
<u>Mainland China</u>						
Average 1959/1963	--	--	--	336	336	100.0
1965	--	--	--	107	107	100.0
1966	--	--	--	48	48	100.0
1967	--	--	--	--	--	--
1968	--	--	--	--	--	--

Source: 1959 to 1967: World Wheat Statistics, op. cit.; 1968: Record of Operations, op. cit.

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The Canadian Situation

Durum wheat production in Canada is confined to the Prairie Provinces. More than 80 per cent of the crop is grown in Saskatchewan, 10 to 15 per cent in Alberta and about 5 per cent in Manitoba (Table VII-14). Durum requires a longer growing season than bread wheats. Production is in the southern part of these provinces since it may be severely damaged by frost in the northern areas.

During the past 12 years, durum wheat acreage varied from 3 to 13 per cent of the total wheat acreage in the Prairie Provinces. Durum acreage fluctuated between a low of 840 thousand acres in 1965 and a high of 3.4 million acres in 1962 (Table VII-15). Production has fluctuated between 14.5 million bushels in 1961 and 65.9 million bushels in 1962.

Table VII-14

PERCENTAGE DISTRIBUTION OF DURUM PRODUCTION BY PROVINCE
1957 TO 1968

	Total Production (Thousand bushels)	Percentage Distribution			Total
		Alberta	Saskatchewan	Manitoba	
1957	44,100	24.3	72.5	3.2	100.0
1958	15,900	10.1	78.6	11.3	100.0
1959	15,000	5.3	86.0	8.7	100.0
1960	18,200	3.9	90.6	5.5	100.0
1961	14,500	11.7	82.8	5.5	100.0
1962	65,700	8.5	86.0	5.5	100.0
1963	50,000	10.0	86.0	4.0	100.0
1964	32,200	15.6	77.6	6.8	100.0
1965	16,000	13.6	81.4	5.0	100.0
1966	28,400	12.3	84.5	3.2	100.0
1967	20,200	14.6	80.1	5.3	100.0
1968	45,400	16.5	77.1	6.4	100.0

Source: Dominion Bureau of Statistics, Handbook of Agricultural Statistics, Part I, Field Crops, Cat. 21-507.

Table VII-15

AREA AND PRODUCTION OF ALL WHEAT, AND DURUM, IN PRAIRIE PROVINCES
AND COMPARATIVE CMB PAYMENTS FOR DURUM AND MANITOBA NORTHERN WHEAT
1957 TO 1968

	Area		Production		CMB Total Payment ⁽¹⁾		Premium Durum over Manitoba Northern (\$/bu.)
	Durum (Thousand acres)	All Wheat (Thousand acres)	Durum (Million bushels)	All Wheat (Million bushels)	No. 1 CMB	No. 1 Manitoba Northern (\$/bu.)	
1957	2,357	20,881	44.1	371	1.846	1.621	+0.225
1958	1,124	21,480	15.9	312	1.682	1.596	+0.082
1959	1,018	23,970	15.0	430	1.684	1.590	+0.094
1960	882	23,900	18.2	498	1.917	1.795	+0.122
1961	1,851	24,629	14.5	260	3.138	1.910	+1.228
1962	3,430	26,237	65.9	546	2.189	1.874	+0.315
1963	2,170	26,996	53.4	703	1.928	1.969	-0.041
1964	1,858	29,080	33.6	578	1.883	1.883	nil
1965	840	27,790	16.9	632	2.037	1.997	+0.040
1966	1,064	29,166	28.4	807	2.134	1.987	+0.147
1967	1,302	29,570	20.2	574	1.923	1.814	
1968	2,370	28,860	45.4	629	--	--	

(1) Basis in store Fort William/Port Arthur.

Source: Dominion Bureau of Statistics, *The Wheat Review*; Canadian Wheat Board, *op. cit.*; *Handbook of Agricultural Statistics*, Part I, *op. cit.*

Future Markets for Canadian Grains

Reported yields per acre of wheat on farms are generally lower for durum than for other wheats, by about 10 per cent (Table VII-16). During the 10-year period 1958 to 1967, the average yield per acre of durum in Alberta was 20.1 bushels, in Manitoba 19.4, and in Saskatchewan 17.7 bushels. The 10-year average yield per acre for other wheats was 22.1 bushels in Alberta, 22.8 in Manitoba, and 19.3 bushels in Saskatchewan. In contrast with this difference in yields on farms between the two types of wheat, greater yields are obtained from durum than from bread wheats on Canada Department of Agriculture test plots throughout the Prairies.

Table VII-16

YIELDS OF DURUM WHEAT AND OTHER WHEATS FOR THE PRAIRIE PROVINCES
1958 TO 1968

(Bushels per acre)

	<u>Alberta</u>		<u>Saskatchewan</u>		<u>Manitoba</u>		<u>Prairie Provinces</u>	
	Durum	Other	Durum	Other	Durum	Other	Durum	Other
1958	22.2	20.4	13.0	15.0	19.1	24.6	14.1	17.3
1959	20.5	20.9	14.3	16.0	19.1	23.1	14.9	17.9
1960	13.2	19.8	19.8	20.7	20.0	23.6	19.4	20.9
1961	9.0	15.8	7.6	8.5	9.4	11.7	7.8	10.6
1962	15.1	19.3	19.5	20.4	23.2	26.3	19.2	20.8
1963	21.4	25.1	25.6	27.5	16.9	19.3	24.6	26.0
1964	22.0	22.3	17.3	18.1	21.8	25.1	18.2	19.9
1965	26.2	25.3	19.1	21.6	22.9	24.4	20.0	22.7
1966	30.2	29.4	26.5	27.7	20.9	24.3	26.7	27.7
1967	21.6	22.7	14.6	17.2	20.8	25.6	15.6	19.4
1968	31.2	29.7	17.5	19.6	22.3	26.8	19.2	21.8
10-year average 1958/1967	20.1	22.1	17.7	19.3	19.4	22.8	18.0	20.3

Source: Handbook of Agricultural Statistics, Part I, op. cit.

Export Outlook for Wheat Flour and Durum

Trade -- The quantity of durum wheat exported annually by Canada fluctuates widely. In 1960, exports totalled 1.1 million metric tons and in the next year declined to 196 thousand metric tons. In 1964, exports totalled 928 thousand metric tons, but since that year until 1967, there has been a steady decline in annual exports (Table VII-12). Exports of durum in 1968 are estimated at 528 thousand metric tons.

The EEC countries have been Canada's principal market for durum wheat. Although Canada has increased her exports to these countries, so too have the United States and Argentina. Canada's share of the EEC market during 1959/63 was about 50 per cent. In recent years it has been between 16 and 30 per cent. Switzerland has been a long time market for durum, taking more than 100 thousand metric tons a year. Canada's share of this market is usually more than 75 per cent, but here too U.S. sales have been increasing. Canada has been almost the sole supplier of durum to Austria, a market of 12 to 21 thousand metric tons. In recent years, Eastern Europe, Mainland China and the Soviet Union have been importers of Canadian durum, and have taken all of their import supplies from Canada. Other countries that have taken small quantities of Canadian durum on occasion are India, Lebanon, Algeria and some Latin American countries.

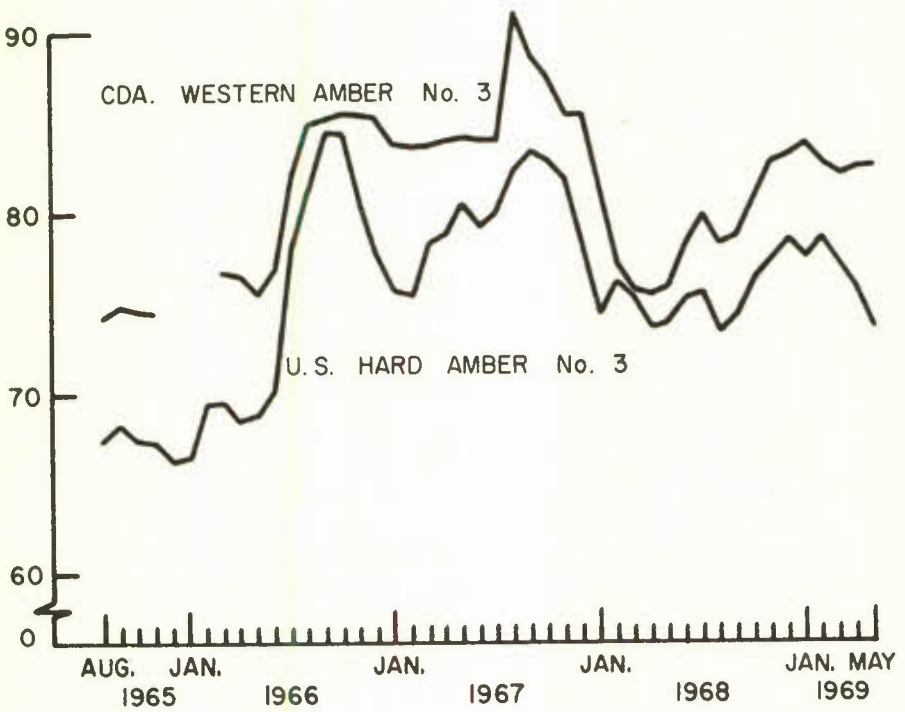
In the light of Canada's declining share in the export sales of durums to a number of important markets, consideration needs to be given to the pricing of Canadian durums in relation to durums from competing countries as well as to bread wheats in Canada. A comparison of the c.i.f. prices for No. 3 Canada amber durum in Rotterdam with prices for No. 3 United States hard amber durum indicates that Canadian durums have been consistently priced above U.S. durums (Chart III). The differentials have been highly variable at times going as high as U.S. \$8.69 per ton.

Canadian Wheat Board payments for No. 1 CW amber durum ranged from \$1.68 per bushel in 1958 and 1959 to \$3.04 in 1961. The differential in favour of No. 1 CW amber durum over No. 1 Manitoba northern was as high as \$1.22 per bushel (1961).

Chart III

PRICES OF CANADIAN AND U. S. DURUM WHEATS

Prices c.i.f.
Rotterdam
U.S.\$ metric ton



Export Outlook for Wheat Flour and Durum

Returns to Canadian producers for durum wheat were at a premium over bread wheats in nine of the 11 years from 1957 to 1967 (Table VII-17), reflecting the world supply situation.

Table VII-17

CANADA: PRODUCER PRICES FOR DURUM AND OTHER WHEATS
BASIS FORT WILLIAM/PORT ARTHUR
1958 TO 1968
(\$ per bushel)

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>No. 1 Amber Durum</u>											
Initial payment	1.40	1.40	1.40	1.75	1.50	1.50	1.50	1.50	1.50	1.70	1.70
Total payment	1.68	1.68	1.92	3.13	2.19	1.93	1.88	2.04	2.13	1.92	n.a.
<u>No. 1 Manitoba Northern</u>											
Initial payment	1.40	1.40	1.40	1.40	1.50	1.50	1.50	1.50	1.50	1.70	1.70
Total payment	1.60	1.59	1.80	1.91	1.87	1.97	1.88	2.00	1.99	1.81	n.a.

Source: Dominion Bureau of Statistics, Grain Trade of Canada, Cat. 22-201.

Although as indicated above, actual yields for durum wheat averaged 10 per cent less than bread wheats, the results of research have indicated that durum wheats have the potential for higher yields than bread wheats in Canada. As the major exporter of durum wheat up to 1966, Canada should therefore be in a strong competitive position to regain and hold a larger share of the world market. Consideration needs to be given to the possibility of substantially increasing the volume of sales of durums at lower prices. In countries where other wheats are used as a substitute for durum in the production of alimentary pastes, there may well be room for increased exports from Canada. In order to exploit fully the potential for increased exports of Canadian durums, some increase in supplies over current levels would seem warranted.

CHAPTER VIII

THE MARKET OUTLOOK FOR CANADIAN OILSEEDS

At least 40 different trees and other plants have been used for the production of oils and many more are known to contain oil.^{1/} However, only a few vegetable oils are important from the standpoint of world trade. More than 90 per cent of international trade is accounted for by nine oils (including the oil equivalent of their seeds). These are palm, palm kernel, coconut, groundnut, soybean, linseed, cottonseed, sunflower and rapeseed. Of these, linseed, rapeseed, sunflower and soybean are of direct interest to Canadian producers.

Vegetable oils may be classed in three broad groups. Those known as "edible oils" (groundnut, soybean, cottonseed, rapeseed, sunflower, sesame and olive) are the most important and account for more than 75 per cent of the total supply. The "edible-industrial" oils (coconut, palm and palm kernel) are used both for edible purposes and in the industrial sphere. The "industrial oils" (linseed, castor and tung) are the smallest segment of the vegetable oils group.

Vegetable oils are used in the food and the soap and detergent industries, and in the manufacture of paints, varnishes, lubricants, plastics and other industrial products. Each oil has its own special characteristics, but processing methods developed for edible oils in recent years have made them increasingly interchangeable. Vegetable oils account for about 60 per cent of the world's supply of oils and fats, marine oils and animal fats being the other sources.

World Production and Trade in Vegetable Oils

The production of vegetable oils has been expanding rapidly (Table VIII-1). Growth in production has been, and is principally, taking place in the edible oils group. Because the edible-industrial oils are mainly from three crops, production

^{1/} Vegetable Oils and Oilseeds, Commodities Division of the Commonwealth Secretariat was the source for much of the information in this section.

Future Markets for Canadian Grains

cannot be easily changed in the short-run. In recent years, a surplus situation has developed in industrial oils, especially in the supplies of linseed oil, owing to competition from synthetic products. World production of these oils has declined in recent years.

During the last decade, vegetable oil output has increased much more rapidly in the developed countries than in the developing countries, since the production increase has been faster in those oilseeds produced in temperate climates -- soybean, rapeseed and sunflower. These changes in the production pattern of vegetable oilseeds are also reflected in the distribution of exports. Exports of edible oils and oilseeds registered increases of about 50 per cent between 1960 and 1967 while little change occurred in exports in the edible-industrial and industrial oils groups (Table VIII-2). The principal exporting countries in terms of volume for all vegetable oils and oilseeds are the United States, the Philippines, the U. S. S. R. and Nigeria.

The EEC countries as a group account for about 50 per cent of world imports of vegetable oils and oilseeds. West Germany has been the largest single importer of oilseed oil and oilseeds, not only within the EEC but also in the world. The second largest importer is Japan, followed by the United Kingdom.

The soybean is the largest single source of edible oil, and now provides about a third of all edible vegetable oil supplies. Between 1960 and 1968, world soybean oil production increased by more than 50 per cent. The increase in production has been mainly in the United States. Thus, much of the increase in soybean production has resulted from increased demand for oil-cake, particularly in the United States and Western Europe, as a source of protein for livestock feeds.

Sunflower production increased by 80 per cent between 1960 and 1968. Sunflower is now the second largest source of vegetable oils. The increased sunflower production has been mainly in the Soviet Union and Eastern Europe, but also in Argentina.

Table VIII-1

ESTIMATED WORLD PRODUCTION OF OILSEED CROPS
AVERAGE 1960/1964; ANNUAL 1962 TO 1968, FORECAST 1969 (1)
(Thousand short tons - oil equivalent)

	Average							Forecast	
	1960/1964	1962	1963	1964	1965	1966	1967	1968(2)	1969
Edible vegetable oils (3)									
Cottonseed	2,479	2,490	2,595	2,685	2,750	2,700	2,395	2,455	2,655
Peanut	2,855	2,860	3,005	3,130	3,325	3,205	3,310	3,455	3,135
Soybean	4,086	4,115	4,290	4,360	4,585	5,050	5,340	5,565	5,615
Sunflowerseed	2,180	2,365	2,590	2,365	3,120	3,100	3,485	3,815	3,615
Rapeseed	1,265	1,310	1,190	1,240	1,670	1,545	1,745	1,845	1,795
Sesameseed	590	595	610	615	670	620	625	640	630
Safflowerseed	187	187	245	195	230	235	300	250	215
Olive oil(4)	1,923(5)	1,475	1,020	1,875	1,095	1,955	1,350	1,480	1,470
Corn oil	225	225	240	255	270	275	275	280	280
Total	15,190	15,655	15,785	16,720	17,715	18,085	18,825	19,785	19,410
Palm oils (6)									
Coconut	2,363	2,325	2,420	2,435	2,360	2,500	2,275	2,150	2,350
Palm kernel	462	445	455	455	460	445	375	390	410
Palm	1,321	1,315	1,315	1,320	1,335	1,385	1,235	1,395	1,525
Babassu kernel (7)	59	66	50	57	60	73	57	75	75
Total	4,205	4,151	4,240	4,267	4,215	4,403	3,942	4,010	4,360
Industrial oils									
Linseed	1,100	1,075	1,140	1,175	1,155	1,215	1,055	920	1,105
Castor	320	300	320	395	370	365	335	405	435
Oiticica	19	28	6	19	13	20	2	10	8
Tung	133	126	215	153	160	140	158	132	157
Total	1,572	1,529	1,591	1,742	1,698	1,740	1,550	1,467	1,705
WORLD TOTAL	20,967	21,335	21,616	22,729	23,628	24,228	24,317	25,262	25,475

(1) Years indicated are those in which the predominant share of the given oil was produced from its related raw material.

(2) Preliminary.

(3) Estimates of U.S. oil production include actual oil produced plus the oil equivalent of exported oilseeds; estimates for other countries are based upon the production of various oil-seeds times the estimated normal proportion crushed for oil.

(4) Excludes sulphur oil.

(5) 1960/1963 average.

(6) Estimated on the basis of exports and information available on consumption in the various producing areas.

(7) Mill production only.

Source: USDA Foreign Agricultural Service, World Agricultural Production and Trade, Statistical Report, January 1969.

Table VIII-2

WORLD NET EXPORTS OF THE PRINCIPAL VEGETABLE OILS AND OILSEEDS
1960 TO 1967

(Thousand long tons - oil equivalent)

	1960	1961	1962	1963	1964	1965	1966	1967
<u>Edible</u>								
Peanuts	736	817	940	962	962	934	1,053	984
Soybeans	1,381	986	1,428	1,384	1,627	1,687	1,618	1,850
Cottonseed	287	263	290	282	390	387	242	179
Rapeseed	98	73	141	120	123	240	320	326
Sunflower	231	275	325	380	317	371	728	892
Sesame	69	60	74	70	72	65	67	65
Olive oil	196	183	204	146	180	104	162	190
Total	2,993	2,657	3,402	3,344	3,671	3,788	4,190	4,486
<u>Edible - industrial</u>								
Coconut	1,215	1,299	1,204	1,306	1,326	1,240	1,366	1,201
Palm kernel	400	386	355	359	365	353	360	260
Palm oil	587	563	501	522	560	538	589	496
Total	2,202	2,248	2,060	2,187	2,251	2,131	2,315	1,957
<u>Industrial</u>								
Linseed	422	453	439	412	433	466	438	432
Castor seed	162	165	161	186	199	202	166	171
Tung oil	56	39	40	38	46	41	46	59
Total	640	657	640	636	678	709	650	662
TOTAL - all oils and oilseeds	5,895	5,562	6,102	6,167	6,600	6,628	7,155	7,105

Source: Vegetable Oils and Oilseeds, Commodities Division of the Commonwealth Secretariat.

Market Outlook for Canadian Oilseeds

Between 1960 and 1968, world supplies of rapeseed increased by 50 per cent. Rapeseed production has increased particularly in Canada where it is grown as an alternative crop to cereals, and in European countries where it fits in well with crop rotation practices and also as a source of edible oils for domestic consumption. Most governments have established guaranteed prices.

Outlook for the Consumption and Production of Vegetable Oils in Canada

The FAO projections for 1975 cover fats and oils as a group and do not provide separate projections for vegetable oils. They do, however, provide projections for the consumption of edible fats and oils separate from fats and oils used for nonfood purposes. World consumption of edible fats and oils on the low-income assumption is estimated at 45.5 million tons in 1975 as compared with 32.8 million tons for the average of the period 1961/1963, an increase of 40 per cent.^{2/} The increase in developed countries is estimated at 23 per cent, as compared with 56 per cent for developing countries and 55 per cent for centrally planned countries. Projections for production of edible oils for 1975 indicate an average increase of about 50 per cent on a world basis as compared with 1961/1963. The increase projected for fats over the same period is at a considerably lower level.

Taking both food and nonfood uses together, a continued increase in total demand is to be expected, but with some leveling off in the rate of increase. The production of non-edible oils is projected to increase at a considerably lower rate than for edible oils.

A recent projection of the Canadian consumption of oils and fats, excluding butter, indicates an increase in per capita consumption from an average of 31.8 pounds for the period 1959/1961 to 36.5 pounds in 1975.^{3/} Total food uses of oils and

^{2/} Agricultural Commodities - Projections for 1975 and 1985,
op. cit.

^{3/} Yankowsky, Zenon, "Agricultural Demand and Supply Projections for 1980", Canadian Farm Economics, CDA, Volume 3, Number 6, February 1969.

Future Markets for Canadian Grains

fats in Canada (excluding butter) are projected to increase by over 50 per cent by 1975 as compared with the period 1959/1961. This projection of total consumption of oils and fats to 1980 shows an increase of 55 per cent over that for the period 1964/1966. It is pointed out that the increase in consumption of edible oils and fats shows a shift in consumption from products of animal origin to those of vegetable origin. This is attributed to a combination of price advantages enjoyed by vegetable oils, the development of synthetic and substitute products, and health considerations.

Apparent annual consumption of edible vegetable oils in Canada is estimated at about 448 million pounds of oil on the basis of the average for the three years 1964/1966 (Table VIII-3). Canadian production of soybean, rapeseed and sunflowerseed oil amounted to 261 million pounds of which 30 million pounds of soybean oil were exported. Imports totalled 30 million pounds of soybean oil.

Table VIII-3

CANADIAN SUPPLY AND DISPOSITION OF EDIBLE VEGETABLE OILS
AVERAGE 1964/1966
(Thousand pounds)

	Production	Imports	Exports	Apparent Domestic Use
Soybean oil	197,924	29,598	29,646	197,876
Rapeseed oil	56,790		132	56,658
Sunflowerseed oil	5,929			5,929
Cottonseed oil		39,098		39,098
Corn oil		17,251		17,251
Peanut oil		16,816		16,816
Coconut oil		40,670		40,670
Palm oil		19,922		19,922
Palm kernel oil		8,795		8,795
Olive oil		3,269		3,269
Cocoa butter		13,962		13,962
Vegetable oils and fats		17,129	599	16,570
Vegetable cooking oils and pack salad oils		7,037		7,037
Margarine and shortening		4,384	167	4,217
Total	260,643	217,931	30,504	448,070

Source: Department of Industry, Food Products Branch, Fats and Oils in Canada, December 1967.

Market Outlook for Canadian Oilseeds

As indicated above, Yankowsky's projection suggests that it would be reasonable to estimate consumption of edible oils in Canada in 1980 at a level more than 55 per cent higher than that for 1964/1966. On the basis of say a 60 per cent increase applying to edible oils, the increase in consumption of edible vegetable oils would be about 270 million pounds. As a result, total consumption of edible oils in 1980 would amount to about 700 million pounds.

Vegetable oils and oilseeds imported into Canada during the five years 1964 to 1968 had an average annual value of \$61 million (Table VIII-4). Of this amount, 87 per cent covered soybeans and soybean oil, corn oil and sunflowerseed oil, all of which are produced in varying amounts in Canada.

The extent to which current import requirements, as well as the projected growth in consumption, may, in the future, be supplied by oils derived from domestically produced soybeans, rapeseed, sunflowerseed and/or corn will depend on the extent to which the Canadian production of such oilseeds can be developed economically, in competition with imported vegetable oils and oilseeds. In this connection, it must be kept in mind that the meal is a very valuable adjunct to oil and is the principal source of revenue from soybeans.

Table VIII-4

IMPORTS INTO CANADA OF VEGETABLE OILS AND OILSEEDS
AVERAGE 1964/1968; ANNUAL 1964 TO 1968

	1964	1965	1966	1967	1968	Average 1964/1968 Per Cent of Total
	(Thousand tons)					Value
Soybeans	548.3	476.3	475.2	483.3	329.4	46,159
Soybean oil	17.2	15.0	12.2	11.6	11.2	3,270
Corn oil	8.5	7.2	10.2	7.0	7.7	2,494
Sunflowerseed oil	--	--	--	17.1	20.0	1,391
Cottonseed oil	18.7	23.8	16.1	5.7	5.3	3,596
Olive oil	1.8	1.4	1.7	2.3	2.0	1,340
Peanut oil	4.8	4.6	15.8	13.3	13.8	2,861
						61,111
	(Thousand dollars)					
Soybeans	52,898	46,327	52,438	48,063	31,071	75.5
Soybean oil	3,822	4,104	3,398	2,737	2,289	5.3
Corn oil	2,068	2,341	3,706	1,991	2,364	4.1
Sunflowerseed oil	--	--	--	3,630	3,323	2.3
Cottonseed oil	4,246	6,102	4,646	1,549	1,436	5.9
Olive oil	1,191	1,008	1,250	1,725	1,528	2.2
Peanut oil	1,213	1,421	4,499	3,786	3,388	4.7
Total	65,438	61,303	69,937	63,481	45,399	100.0

Source: Dominion Bureau of Statistics, Trade of Canada, Imports by Commodities, Cat. 65-007.

Market Outlook for Canadian Oilseeds

Soybeans

Soybeans are indigenous to Eastern Asia but are cultivated throughout the world. Outside the Far East, where they are a staple food, soybeans are grown mainly as a source of vegetable oil and protein for animal feed. Soybeans are the world's largest single source of edible oil, accounting for about a third of all vegetable oil supplies. Soybean oilcake and meal is nearly half by volume of all oilcake supplies used in livestock feeding. Since the oil content of the soybean is relatively low and the oilcake yield is high, soybeans are in demand in the United States and Western Europe where the market for protein feeds is expanding more rapidly than that for oil.^{4/}

World production of soybeans in 1967 totalled 39.5 million long tons, an increase of more than 50 per cent over that of 1960. Production has been increasing in all countries outside of the Far East. The United States now accounts for about two-thirds of the world's production of soybeans. Until after the Second World War, Mainland China was much the largest producer.

World exports of soybeans increased steadily from four million tons in 1961 to an estimated 10 million tons in 1969, of which nine million tons were exported by the United States (Table VIII-5). Other important exporters are Mainland China and Brazil.

World exports of soybean oil remained relatively unchanged as compared with the rapid growth in exports of soybeans. World exports of soybean oil in 1967 averaged nearly 500 thousand tons as compared with 400 thousand tons in 1961. The United States is the principal source of exports of soybean oil. Denmark, West Germany, Canada, Belgium and the Netherlands have also been exporting small, but increasing, quantities of soybean oil.

The main soybean importers are Japan, Western European countries and Canada. Japan, with imports of 2.4 million tons in 1968, is by far the world's largest importer. Declining domestic production and increasing demands for oil and meal, as well as

^{4/} Vegetable Oils and Oilseeds, Commodities Division of the Commonwealth Secretariat, 1968.

Future Markets for Canadian Grains

for beans for direct consumption have led to steadily increasing imports, which have doubled since 1961. The EEC countries have imported about 3 million tons of soybeans in each of the three years 1966 to 1968, of which imports into West Germany accounted for 1.6 million tons. In addition to other EEC countries, Denmark, Israel, Norway, Spain, the United Kingdom, Canada and Taiwan also import considerable quantities each year.

Table VIII-5

SOYBEANS AND OIL: WORLD NET EXPORTS
1965 TO 1969

(Thousand metric tons)

		1965	1966	1967 ^P	1968 ^P	1969*
United States	oil ⁽¹⁾⁽²⁾	553.2	393.6	514.7	432.2	500
	beans	6,196.0	6,751.5	7,169.2	8,012.0	9,000
Brazil	beans ⁽³⁾	75.3	121.2	304.7	65.9	300
Nigeria	beans	15.3	12.3	5.9	7.1	10
China	oil	3.0	4.0	3.0	4.0	5
	beans	599.0	583.0	610.0	630.0	600
Thailand	beans	1.6	5.7	5.8	4.0	6
Other countries	beans	<u>13.8</u>	<u>23.3</u>	<u>22.4</u>	<u>27.0</u>	<u>29</u>
WORLD TOTAL	oil	556.2	397.6	517.7	436.2	505
	beans	6,901.0	7,497.0	8,118.0	8,746.0	9,945
Beans and oil ⁽⁴⁾		1,798.0	1,747.0	1,979.0	2,010.0	2,295

p - preliminary.

* - estimated net export availabilities.

(1) Including foreign donation shipments.

(2) Includes some further processed oil.

(3) Gross exports, disregarding the imports of soybean oil.

(4) Oil basis.

Source: Oil World, May 1969.

Market Outlook for Canadian Oilseeds

Varying quantities of soybean oil are imported by many countries throughout the world. Some are regular buyers through commercial channels but others, for example, India, Pakistan, Burma, Egypt, Israel, Tunisia and Yugoslavia, accounting for the bulk of U. S. exports of soybean oil, import mainly under PL 480 arrangements.

Canadian Production and Trade

In Canada, soybeans have been competitive with other crops only in Southwestern Ontario. Soybeans were introduced to Manitoba during the 1950's but have not been grown there in commercial quantities since 1960. In 1965, soybean acreage in Ontario was 265 thousand acres but increased to 295 thousand acres in 1968 (Table VIII-6). Total Canadian soybean production in 1968 was estimated at nine million bushels, up by almost one million bushels over 1967, but the same as in 1966.

Table VIII-6

SOYBEANS: ACREAGE, PRODUCTION, VALUE AND EXPORTS, CANADA
AVERAGE 1957/1961; ANNUAL 1962 TO 1968

	Total Seeded Acreage (Thousand acres)	Average Yield per Seeded Acre (Bushels)	Production (Thousand bushels)	Average Farm Price (\$ per bushel)	Total Farm Value (Thousand dollars)	Exports (Thousand bushels)
Average 1957/1961	242	26.1	6,323	1.99	12,609	2,468
1962	221	29.9	6,608	2.48	16,388	2,445
1963	228	21.9	5,002	2.80	14,006	1,614
1964	231	30.2	6,976	2.87	20,021	3,179
1965	265	30.3	5,030	2.70	21,681	2,152
1966	279	32.3	9,012	3.00	27,036	3,599
1967	290	27.9	8,091	2.69	21,765	1,571
1968 ⁽¹⁾	295	30.6	9,027	2.45	22,116	n.a.

(1) Estimated.

Source: Handbook of Agricultural Statistics, Part I, *op. cit.*; Dominion Bureau of Statistics, Quarterly Bulletin of Agricultural Statistics, Cat. 21-003.

Table VIII-7

SOYBEAN OIL AND SOYBEANS: WORLD GROSS IMPORTS
1963 TO 1968

(Thousand metric tons)

	1963	1964	1965	1966	1967P	1968P
United Kingdom						
oil	24.9	17.7	21.5	17.3	16.3	14.8
beans	268.8	294.4	287.0	285.5	252.8	242.0
EEC countries						
oil	44.0	51.4	41.7	28.6	40.8	56.9
beans	1,973.1	2,514.3	2,379.8	2,941.9	3,007.8	2,996.4
Other Western Europe (1)						
oil	161.1	78.4	140.3	73.1	44.9	42.3
beans	511.6	605.3	925.2	1,158.6	1,503.4	1,500.1
Eastern Europe (2)						
oil	2.5	45.5	13.2	3.5	--	9.0
beans	56.2	52.3	115.9	78.8	106.0	83.8
U.S.S.R.						
beans	--	--	93.4	--	--	--
Canada						
oil	13.4	15.7	13.6	11.0	10.4	10.1
beans	386.2	497.4	432.1	431.1	438.4	298.8
Japan						
beans	1,544.4	1,607.1	1,847.5	2,168.5	2,169.8	2,420.8
Taiwan						
oil	0.3	11.1	2.4	1.7	6.8	0.8
beans	182.5	181.8	161.4	164.5	351.1	384.9
Israel						
oil	22.3	8.5	20.1	13.3	18.3	19.4
beans	187.6	237.4	237.1	259.3	253.6	252.4
India						
oil	0.1	0.1	62.2	42.5	145.1	92.2
Pakistan						
oil	93.6	76.1	95.4	26.9	83.4	101.3
Other countries						
oil	264.8	415.5	297.6	300.1	304.8	228.2
beans	133.6	184.0	162.6	181.8	192.1	224.8
WORLD						
oil	627.0	720.0	708.0	518.0	671.0	575.0
beans	5,244.0	6,154.0	6,642.0	7,670.0	8,275.0	8,404.0

(1) Austria, Denmark, Finland, Greece, Norway, Spain and Sweden.

(2) Czechoslovakia, Hungary and Poland.

Source: Oil World, op. cit.

Market Outlook for Canadian Oilseeds

Canada's soybean industry is closely related to that in the United States which is the principal source of the 424 thousand tons of soybeans imported into Canada on the average for the years 1964 to 1968 (Table VIII-7). Until 1966, Canadian imports of soybeans each year were more than twice the volume of domestic production. The quantity imported declined somewhat in 1966 and 1967 but was still considerably larger than production in Canada. During the five years 1964 to 1968, exports of soybeans from Canada averaged 73 thousand tons per year (Table VIII-9).

The United Kingdom has been the main export market for soybeans from Canada (Table VIII-8). On July 1, 1968, the United Kingdom removed a 5 per cent tariff on soybeans imposed on countries not under British preference. Exposed to competition on an equal basis with the United States, Canadian exports of soybeans to the United Kingdom may likely decline in the future.

Table VIII-8

SOYBEANS: CANADIAN EXPORTS BY DESTINATION
AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 AND 1967
(Thousand bushels)

	Average 1956/1960	Average 1961/1965	1966	1967
EEC countries	91	118	157	89
United Kingdom	1,894	2,464	3,439	1,471
Other Western Europe	2	26	3	10
Other	62	4	--	--
Total	2,049	2,612	3,599	1,570

Source: Canadian Grain Exports, op. cit.

Canada's import and export trade in soybean oil fluctuates widely from year to year (Table VIII-9). Exports of soybean oil, which averaged 14 thousand tons for the five-year period 1957/1961, increased to 25 thousand in 1962. Exports in 1968 totalled 16 thousand, down from 21 thousand tons in 1967. Imports of soybean oil, which averaged 14 thousand tons for the five years 1957 to 1961, increased to a high of 17 thousand in 1964, but since that year have declined continuously to 11 thousand tons in 1968.

Table VIII-9

SOYBEANS AND SOYBEAN PRODUCTS: CANADIAN IMPORTS AND EXPORTS
 AVERAGE 1957/1961; ANNUAL 1962 TO 1968
 (Tons)

	Soybeans		Oil		Cake and Meal		
	Imports	Net Trade	Imports	Exports	Imports	Exports	Net Trade
Average 1957/1961	367,029	-295,314	13,878	14,416	193,379	167,935	-25,444
1962	418,007	-336,037	9,650	25,300	275,590	218,067	-57,523
1963	425,742	-377,015	14,800	22,700	256,821	241,340	-15,481
1964	548,331	-490,329	17,250	12,500	222,919	229,329	+ 6,410
1965	476,262	-385,230	14,950	17,350	248,989	255,756	+ 6,767
1966	475,219	-376,947	12,150	14,600	214,835	211,813	- 3,022
1967	483,294	-411,669	11,571	21,465	220,481	171,060	-49,421
1968	329,392	-282,600	11,158	15,685	237,679	159,203	-78,476

Source: Trade of Canada, Imports by Commodities, op. cit.; Dominion Bureau of Statistics, Trade of Canada, Exports by Commodities, Cat. 65-004.

Market Outlook for Canadian Oilseeds

Canada also has a substantial import and export trade in soybean oilcake and meal. Exports have declined from 256 thousand tons in 1965 to 159 thousand in 1968. In 8 of the past 12 years, imports of oilcake were larger than exports. Imports in 1968 totalled 238 thousand tons.

Between 1958 and 1964, the Agricultural Stabilization Board provided price support for soybeans marketed under the control of the Ontario Soybean Growers Marketing Board. A support price of \$2.10 a bushel in 1958 required a deficiency payment of 19.7¢ a bushel, for a total cost of \$1.2 million. A support price of \$2.00 a bushel in 1959 resulted in a payment of 13.6¢ a bushel, for a total payment of \$86,700. In 1965, the Agricultural Stabilization Board discontinued price supports for soybeans because prices had remained well above support levels since 1959. Prices reached a peak of \$3.00 a bushel in 1966, but dropped to \$2.69 in 1967 and to an estimated \$2.45 in 1968.

Soybean prices in Canada closely follow those of the United States, where prices are supported. Because Canada imports large quantities of soybeans from the United States, support prices there establish a floor price for Canadian production. At such a price, Canadian producers theoretically could have a potential market at home which would allow soybean production to be increased by an amount roughly equivalent to our net imports of soybeans and soybean oil, most of which come from the United States. Canada's combined net imports of soybeans and soybean oil, on a bean equivalent basis, for 1968, was 256 thousand tons or 8.7 million bushels.

Canadian soybean production so far has been confined largely to Southwestern Ontario, where it competes successfully with a number of "high value" crops for the use of some of the highest priced farm land in the country. Average yields of soybeans in Southwestern Ontario compare favourably with soybean yields in the State of Illinois, the principal producing area in the United States. Dr. L. R. Donovan, who is in charge of development research on corn and soybeans at the Ottawa Research Station, Canada Department of Agriculture, reports that, on the basis of plot tests carried out for research purposes, yields of soybeans in Eastern Ontario and Western Quebec, using varieties

Future Markets for Canadian Grains

adapted to the area, are comparable to those in Southwestern Ontario. Although farm land in the Eastern Ontario-Western Quebec area is much lower priced than Southwestern Ontario, the need for the development of higher yielding varieties of soybeans adapted to this area and a more effective weed herbicide for use with soybeans, together with the lack of crushing facilities east of Toronto, will likely continue to limit soybean production in these areas.

Rapeseed

Rapeseed for oilseed production is grown almost wholly in the temperate and warm-temperate zones. It has been a traditional oilseed crop in Western Europe although not produced on a large scale. Following the Second World War, several European governments encouraged the production of rapeseed and it is now an important crop in France, Germany, Sweden, Denmark and Poland. Rapeseed was introduced to Canada as a wartime measure during the Second World War. Rapeseed oil is used mainly for edible purposes, although in North America there was a prejudice against it that is just now being overcome as a result of research. Rapeseed oilcake and meal are used as protein supplements in livestock feeds, but have a lower feeding value than soybean oilcake and, because of certain characteristics, the proportion of rapeseed oilcake in the ration is limited.

Although there has been some fluctuation from year to year, world production of rapeseed has increased from an average of four million tons during 1960/1964 to five million tons during 1964/1968 (Table VIII-10).^{5/} The world's main producers of rapeseed are India and Mainland China, which combined account for more than half of the total production. Other important rapeseed producers are Eastern European countries (particularly Poland), France, West Germany, Canada and Sweden, which are largely responsible for the rapid increase in production that has occurred since 1964. On the other hand, production in Japan, the world's principal consumer of rapeseed, has decreased substantially.

^{5/} Vegetable Oils and Oilseeds, op. cit.

Market Outlook for Canadian Oilseeds

Table VIII-10

RAPESEED: ⁽¹⁾ PRODUCTION IN MAJOR PRODUCING COUNTRIES
AND ESTIMATED WORLD TOTAL
AVERAGE 1960/1964; ANNUAL 1964 TO 1968
(Thousand short tons)

	Average 1960/1964	1964	1965	1966	1967 ⁽²⁾	1968 ⁽³⁾
Western Hemisphere	304	396	641	738	693	521
Canada	249	331	565	645	618	468
Chile	46	56	66	85	67	45
Other	9	9	10	8	8	8
Western Europe	490	707	844	657	977	1,070
France	161	272	373	350	444	488
Germany, F.R.	102	120	117	109	137	187
Other EEC	21	20	22	25	24	27
Total EEC	284	412	512	484	605	702
Austria	10	11	13	15	17	17
Denmark	38	58	55	36	43	25
Finland	8	10	7	3	9	9
Sweden	136	200	239	94	270	285
Switzerland	12	14	15	12	15	15
United Kingdom	2	2	3	13	18	17
Eastern Europe	552	562	895	835	1,136	1,222
Czechoslovakia	60	51	81	86	93	91
Germany, East	182	194	236	232	300	300
Poland	278	294	556	494	718	810
Other	32	23	22	23	25	21
Africa	15	11	11	13	13	13
Algeria	9	5	5	7	7	7
Ethiopia	6	6	6	6	6	6
Asia	2,656	2,263	2,903	2,658	2,692	3,030
Mainland China ⁽³⁾	737	730	770	810	880	850
India	1,315	1,009	1,617	1,406	1,354	1,633
Japan	227	148	138	105	87	76
Pakistan	355	333	338	307	338	437
Other	22	43	40	30	33	34
WORLD	4,017	3,939	5,294	4,901	5,511	5,856

(1) Includes mustardseed in areas where rapeseed and mustardseed are not separately reported.

(2) Preliminary.

(3) Partly estimated.

Source: World Agricultural Production and Trade, *op. cit.*, December 1968.

Future Markets for Canadian Grains

World exports of rapeseed increased from 225 thousand metric tons in 1961 to 650 thousand tons in 1967, 759 thousand in 1968 and an estimated 970 thousand tons in 1969. Canada is the world's largest rapeseed exporter, accounting for nearly 50 per cent of total exports in 1966 and 1967. France and Poland are substantial exporters of rapeseed and along with Canada have increased their exports during recent years (Table VIII-11).

World exports of rapeseed oil have been increasing, but Canada has not participated in this trade since 1964. The largest exporters of rapeseed oil are France, West Germany, Poland and Sweden, and all have been steadily increasing exports. In 1966 and 1967, Mainland China and Japan moved substantial quantities of rapeseed oil into world markets. World exports of rapeseed oil increased from about 25 thousand metric tons in 1961 to an estimated 200 thousand tons in 1969.

The main importers of rapeseed are the EEC countries, particularly Italy, West Germany and the Netherlands, Japan, Algeria and the United Kingdom. With the exception of Algeria, all have been increasing their imports. Japan is much the largest importer, importing over 225 thousand tons in 1967. The principal importers of rapeseed oil are West Germany, Hong Kong, Italy, the Netherlands and Austria. In general, all have been increasing the quantity imported each year, particularly since 1965.

World trade in rapeseed oilcake and meal has been increasing, but the quantity traded is small compared with soybean oilcake and meal.

Canadian Production and Trade

Rapeseed production in Canada became established on a permanent basis during the Second World War, but the acreage seeded to this crop did not increase significantly until the mid-1950's when farmers were seeking an alternative to cereal crops. The acreage seeded to rapeseed, which averaged 586 thousand acres during the five years 1957/1961, again increased in the mid-1960's, averaging 1.4 million acres during the four years 1965 to 1968.

Table VIII-11

 RAPESEED AND OIL: WORLD NET EXPORTS⁽¹⁾
 1965 TO 1969

(Thousand metric tons)

	1965	1966	1967P	1968P	1969*
Denmark					
oil	--	--	0.5	--	1
seed	34.9	29.7	20.4	3.5	5
France					
oil	31.0	41.5	34.3	22.2	60
seed	121.9	123.9	198.7	98.7	200
Sweden					
oil	16.4	13.5	18.5	22.9	40
seed	73.2	17.4	21.5	57.7	75
East Germany					
seed	4.0(2)	18.0(2)	20.0(2)	62.0(2)	70
Poland					
oil	7.8	21.1	65.5	70.0(2)	75
seed	42.7	85.1	102.8	175.0(2)	180
Canada					
oil(3)	--	--	--	--	3
seed(3)	241.5	316.5	336.6	328.6	410
China					
oil	4.0(2)	35.0(2)	19.5(2)	18.0(2)	15
seed	7.0(2)	34.0(2)	30.0(2)	13.0(2)	10
Other countries					
oil	4.8	4.9	4.7	4.9	6
seed	13.8	15.4	20.0	20.5	20
WORLD					
oil	64.0	116.0	143.0	138.0	200
seed	539.0	540.0	650.0	759.0	970
Seed and oil(4)	274.0	366.0	396.0	434.0	578

P - preliminary.

* - estimated net export availabilities.

(1) Includes mustardseed where not separately reported.

(2) Estimates.

(3) Gross exports, the sizable rapeseed oil imports (at least since 1968) are unreported.

(4) Oil basis (39 per cent).

Source: Oil World, *op. cit.*

Future Markets for Canadian Grains

Rapeseed production in Canada is confined to the Prairie Provinces. A decade ago, production was mostly in Saskatchewan but the acreage there has changed little. Most of the increase in acreage has occurred in Alberta, with some increase in Manitoba. Saskatchewan's share of the total rapeseed acreage decreased from 73 per cent for the five-year average 1957/1961 to about 40 per cent in recent years.

Average yields per acre of rapeseed in Canada range between 16 and 18 bushels per acre. Production in the last three crop years totalled 25.8, 24.7 and 18.7 million bushels, respectively.

Average farm prices were above \$2.00 a bushel from 1962 until 1968 when they dropped to an estimated \$1.95. The peak price was \$2.74 a bushel in 1964 (Table VIII-12).

Until recently, most of Canada's rapeseed production was exported. Domestic crushings of rapeseed have increased each year from about one million bushels in 1961 to nearly six million bushels in 1967. Rapeseed oil constitutes about 30 per cent of the vegetable oil now used in Canada. With a 50 per cent increase in the consumption of vegetable oils in prospect by 1975, further exploitation of the domestic market should provide a basis for expanded production of rapeseed.

Canadian exports of rapeseed totalled 12.3 million bushels in 1967, 11 per cent less than the level of exports in 1965 and 1966 (Table VIII-13). Exports in 1967 were 50 per cent higher than the average for the five years from 1961 to 1965. Italy and other European Economic Community countries have been large importers of Canadian rapeseed, but imports have varied greatly in individual years. In 1967, exports of rapeseed to the EEC fell precipitously. Japan, which has been Canada's main market for rapeseed since 1964, accounted for over 80 per cent of Canada's exports in 1967. Taiwan has also been an important export outlet for Canadian rapeseed since 1964. A continuing growth in consumption of edible vegetable oils in these countries should ensure an expanded export market for Canadian rapeseed.

Table VIII-12

RAPESEED: CANADA - ACREAGE, PRODUCTION, FARM VALUE AND EXPORTS
AVERAGE 1957/1961; ANNUAL 1962 TO 1969

Average	Seeded Acreage			Yield per Seeded Acre (bushels)	Production (Thousand bushels)	Average Farm Price (Dollars per bushel)	Total Farm Value (Thousand dollars)	Exports (Thousand bushels)
	Total (Thousand acres)	Provincial Distribution						
		Manitoba (Per cent)	Saskatchewan Alberta					
1957/1961	586	4.1	73.2	22.6	8,454	1.63	13,778	5,920
1962	371	8.7	45.0	46.3	5,860	2.04	11,972	5,802
1963	478	9.4	43.9	46.7	8,360	2.52	21,042	5,308
1964	791	10.6	38.3	51.1	13,230	2.74	36,309	9,276
1965	1,435	10.1	38.7	51.2	22,600	2.41	54,360	13,632
1966	1,525	11.2	47.9	40.9	25,800	2.47	63,760	13,818
1967	1,620	9.0	37.0	54.0	24,700	1.92	47,536	12,309
1968	1,052	8.6	48.6	42.8	19,400	1.95	32,830	14,311
1969(1)	2,012	9.7	49.7	40.6	36,700	n.a.	n.a.	n.a.

(1) Estimated.

Source: Handbook of Agricultural Statistics, Part I, op. cit.; Quarterly Bulletin of Agricultural Statistics, op. cit.

Future Markets for Canadian Grains

Table VIII-13

RAPESEED: CANADIAN EXPORTS BY DESTINATION
 AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 TO 1968
 (Thousand bushels)

	Average 1956/1960	Average 1961/1965	1966	1967	1968
EEC countries	3,890	3,267	4,517	631	401
United Kingdom	80	166	158	--	--
Japan	977	3,839	8,404	10,198	11,189
Taiwan	--	52	165	1,450	2,000
Other	406	808	568	--	1,213
Total	5,353	8,132	13,812	12,279	14,803

Source: Canadian Grain Exports, op. cit.

Canada's potential future position as a producer and exporter of rapeseed is extremely encouraging. Recent technological developments in the processing of rapeseed oil have greatly improved its acceptability and its competitiveness with other edible vegetable oils. While research has also made rapeseed meal more acceptable for feeding purposes in Canada, problems still exist in the marketing of the meal. Part of this problem has to do with the location of crushing facilities only in Western Canada and the cost of transporting the meal to Eastern Canadian feed markets. A continuation of both technical and economic research, together with developmental work on both rapeseed oil and meal can greatly increase the domestic and export markets. The extent to which expansion of Canadian production is warranted will depend finally on the price at which Canadian producers can market rapeseed, as reflected in the returns from rapeseed meal and oil in comparison with that of vegetable oils from other sources. An expansion in Canadian rapeseed acreage can be anticipated.

If expanded gradually to avoid the accumulation of burdensome surpluses and to provide time for further developmental work and for the ironing out of marketing problems, a total of about four million acres in rapeseed may be anticipated by 1975.

Sunflower Seed

Most of the world's production of sunflower seed is crushed for the production of edible oil. Small quantities are used for bird seed and for confectionery. The better grades of the oil are consumed as table or cooking, or used in the manufacture of margarine. Inferior grades are used as a drying oil or in soap. In Eastern Europe and the Soviet Union, significant improvements have been obtained in the oil content of the sunflower seed. Some four-fifths of the world production is now believed to be of strains with an oil content of 40 per cent or more.

The world acreage of sunflower has been increasing slowly but steadily, reaching nearly 20 million acres in 1966.^{6/} The world's largest producer was the Soviet Union with 12.4 million acres. Argentina grew 3.4 million acres and Rumania 1.2 million. Sunflower seed is the principal oilseed crop grown in Eastern Europe and expansion of acreage has been encouraged.

World production of sunflower seed in 1966 was estimated at 9.1 million tons, of which 6.1 million tons were grown in the Soviet Union, 1.1 million tons in Argentina and 0.7 in Rumania. Sizable quantities of sunflower are also grown in Turkey, Uruguay, Yugoslavia, Hungary, Bulgaria, Ethiopia and Spain. Production has been increasing gradually in all areas.

The Soviet Union dominates the world export trade in sunflower oil, accounting for about two-thirds of total net exports. Bulgaria and Rumania are also large exporters of sunflower oil. Outside the Soviet Union, Argentina was the world's largest exporter of sunflower oil in 1965 and 1966, but this position was taken by Rumania in 1967.

The large increase in world sunflower production of recent years has put sunflower oil into fourth place in world trade among edible oils, compared with tenth place in 1964. The large quantities available on world markets have resulted in a significant decline in sunflower oil prices and have also affected other edible oil prices.

^{6/} Vegetable Oils and Oilseeds, *op. cit.*

Canadian Production and Trade

Canadian growers market two distinct types of sunflower seed. The large-seeded varieties are marketed primarily for confectionery use and for bird seed, and make up about a third of the crop. The small-seeded varieties are crushed for meal and oil.

Sunflowers have been grown and crushed for oil in Manitoba for many years mostly under contract with the Co-operative Vegetable Oils Ltd. of Altona, Manitoba. Sunflowers were introduced in Alberta and Saskatchewan about a decade ago, but after initial increases in acreage, have declined sharply. Canadian production of sunflower oil is marketed largely as salad oil in Western Canada.

Sunflower seed acreage and production varies greatly from year to year. Between 1957 and 1968, total Canadian acreage ranged from 23 thousand acres in 1962 to 78 thousand acres in 1964. Production had fluctuated between 12 million pounds in 1957 and 39.8 million in 1963. Yields per acre vary greatly due to climate and disease. Average yield was as low as 394 pounds per acre in 1964 and as high as 949 pounds in 1963. Average yields per acre in Canada are considerably lower than those in Eastern Europe and the Soviet Union. In 1967, average yields per acre in the Soviet Union were estimated to be a record 1,232 pounds (Table VIII-14).

A small quantity of sunflower seed is exported from Canada each year mostly to the United States for bird seed, but some also goes to West Germany and the Netherlands. Between 1961 and 1968, annual exports of seed fluctuated between 9,402 short tons and 1,162 short tons.

The low prices, which occurred on world markets in connection with the drive for export markets for sunflower oil by the Soviet Union and other Eastern European countries in recent years, resulted in imports of sunflower seed oil into Canada totalling 17,144 tons in 1967 and 20,048 tons in 1968. Most of the oil imports came from the Netherlands, but likely originated from seeds grown in Eastern Europe and the U. S. S. R. Some came from Rumania in both years, and in 1968, more than five thousand tons came from the U. S. S. R.

Table VIII-14

SUNFLOWER SEED: CANADA - ACREAGE, PRODUCTION, FARM VALUE AND EXPORTS
AVERAGE 1957/1961; ANNUAL 1962 TO 1968

Average 1957/1961	Seeded Acreage		Yield per Seeded Acre (Pounds)	Production (Thousand Pounds)	Average Farm Price (Dollars per pound)	Farm Value (Thousand dollars)	Exports (Short tons)
	Total (Thousand acres)	Provincial Distribution Saskatchewan Alberta (Per cent)					
1957/1961	39.2	85.8 --	14.2	23,958	0.043	1,025	--
1962	23.0	89.1 --	10.9	17,360	0.053	920	7,028
1963	42.0	88.1 8.3	3.6	39,838	0.045	1,782	7,144
1964	78.5	61.1 29.3	9.6	30,900	0.049	1,526	5,242
1965	68.0	70.6 24.3	5.1	29,225	0.059	1,726	6,877
1966	53.0	81.3 12.6	6.0	32,790	0.06	1,906	9,402
1967	45.8	96.1 3.9	--	36,010	0.05	1,800	2,994
1968(1)	40.0	92.5 6.3	1.2	24,750	0.04	990	1,162

(1) Estimated.

Source: Handbook of Agricultural Statistics, Part I, op. cit.; Quarterly Bulletin of Agricultural Statistics, op. cit.

Future Markets for Canadian Grains

Sunflower production for oil has continued to be severely affected by weather and disease, and is likely to be limited to specific areas such as Southern Manitoba. Within these areas, sunflowers should continue to be an attractive cash crop with some potential for expansion in acreage.

Flaxseed

Flaxseed provides on average about 75 per cent of the total supply of industrial vegetable oils. Linseed oil, obtained from the crushing of flaxseed, is used as a drying agent in paints, varnishes, linoleum, oilcloth and technical inks; small quantities are used for making soap; and in some Asian countries the oil is used for edible purposes. In recent years, there has been a relative decline in the utilization of linseed oil as a result of the increased production of synthetic-based paints and floor coverings.

The main flaxseed growing countries are the United States, Argentina, the U. S. S. R., India and Canada.^{7/} World production of flaxseed in 1968 totalled 120 million bushels, 28 million bushels more than in 1967 but 9 per cent less than the 1960/1964 average output (Table VIII-15). World production was relatively large between 1962 and 1965. This was followed by a 29 million bushel decline in 1966 and a further 27 million bushel decline in 1967. The declines were largely due to smaller acreages planted in the United States and Canada in those years. Eastern Europe is the only region showing an increasing trend in production, but the acreage planted there is relatively small.

The leading exporters of flaxseed and oil are Canada, Argentina and the United States. Canada, with more than 60 per cent of the world's export market, is the world's largest exporter of flaxseed but has only a very small share of the market for linseed oil. Argentina, which does not permit the export of flaxseed, is the largest exporter of linseed oil providing 70 per cent or more of world exports.

^{7/} Vegetable Oils and Oilseeds, op. cit.

Market Outlook for Canadian Oilseeds

Table VIII-15

FLAXSEED: PRODUCTION IN MAJOR PRODUCING COUNTRIES
AND ESTIMATED WORLD TOTAL
AVERAGE 1960/1964; ANNUAL 1964 TO 1968
(Thousand bushels)

	Average 1960/1964	1964	1965	1966	1967	1968 ^P
North America	47,672	45,462	65,443	45,954	30,005	46,021
Canada	18,907	20,313	29,254	20,020	9,378	18,166
United States	28,050	24,401	35,402	23,390	20,036	27,264
Mexico	715	748	787	544	591	591
South America	34,491	37,145	25,635	25,794	17,385	24,279
Argentina	29,956	32,085	22,440	22,715	15,157	20,865
Brazil	1,384	2,114	1,659	1,435	1,116	--
Chile	155	138	54	54	55	28
Uruguay	2,996	2,808	1,482	1,590	1,057	1,786
Western Europe	4,263	4,815	2,938	3,107	2,626	2,009
France	1,899	1,972	1,094	1,539	1,440	975
Other EEC	2,011	2,559	1,668	1,398	1,012	705
Other Western Europe	354	284	176	270	224	329
Eastern Europe	4,031	4,045	5,492	5,286	5,512	5,046
Poland	2,348	2,165	3,031	2,834	2,874	2,756
Rumania	598	937	1,374	1,480	1,455	1,340
Other Eastern Europe	1,085	943	1,087	972	1,183	950
U.S.S.R.	18,700	17,600	22,835	20,115	20,905	21,260
Africa	2,794	3,060	3,127	3,017	2,842	2,897
Ethiopia	2,000	2,126	2,205	2,324	2,360	2,360
Other	794	934	922	693	482	537
Asia	18,698	16,820	21,581	14,770	11,846	17,318
Iraq	228	276	472	472	472	550
India	16,683	14,920	19,806	13,196	10,332	15,676
Pakistan	536	591	512	480	493	446
Turkey	746	689	551	433	472	433
Other	505	344	240	189	177	213
Oceania	1,384	2,284	684	910	739	1,178
Australia	1,024	1,864	244	550	419	858
WORLD	132,033	131,231	147,735	118,953	91,860	120,008

Source: World Agricultural Production and Trade, *op. cit.*

Future Markets for Canadian Grains

Since 1964, the United States has had large surpluses and has been keenly competitive in world export markets for both linseed oil and flaxseed sales. The United States increased its exports of flaxseed from an average of 100 thousand tons in 1961 to almost 160 thousand tons in 1966, and of linseed oil from less than 10 thousand tons a year during 1961/1964 to 56 thousand tons in 1966. The relatively large exports of linseed oil in 1966 were followed by a drop of 20 thousand tons in 1967.

World imports of flaxseed fluctuated between 492 thousand and 685 thousand tons from 1961 to 1967. In 1961, the United Kingdom was the largest single importer at 151 thousand tons, but U.K. imports have declined steadily and were only 94 thousand tons in 1967. The Netherlands was the largest importer of flaxseed in 1966 and 1967 at 116 and 111 thousand tons -- an increase from an average of just over 70 thousand tons a year during the previous five years. Japan imported more than 100 thousand tons of flaxseed annually from 1965 to 1967, a small increase over 1962 to 1964, but about the same as in 1961.

World imports of linseed oil fluctuated between 218 thousand and 289 thousand tons from 1961 to 1966. West Germany was much the largest importer, but the quantity imported was 20 thousand tons a year less in 1966 and 1967 than in 1961 and 1962. The United Kingdom has been the second largest importer but here, too, imports have been declining in volume. Other significant, but smaller, importers have been France, the Soviet Union, Italy, Sweden, the Netherlands and Poland. Imports by all of these countries vary in amount between years, and only Poland has shown an increasing trend.

World prices of both flaxseed and linseed oil have been declining although there was a slight upturn in 1967 and 1968. With a declining demand and generally more than adequate supplies, there seems to be little chance for much improvement.

Linseed oilcake and meal are traded in small quantities in world markets. Demand for this product has not been increasing because of competition from soybean and rapeseed cake.

Canadian Production and Trade

Flaxseed is grown in all provinces of Canada west of the Maritimes, but only in the Prairie Provinces is the area of significant size. The acreage seeded to flaxseed in Canada decreased from an average of 2.5 million acres for the period 1957 to 1961 to 1.5 million acres in 1968 (Table VIII-16). The largest decrease in the area seeded to flaxseed was in Saskatchewan, as a result of which Saskatchewan's share of the total Canadian flaxseed acreage declined from more than half to less than a quarter. By 1968, flaxseed acreage in Alberta had declined to one-half the average for the 1957/1960 period. Flaxseed acreage in Manitoba remained more or less the same between 1957 and 1968, with the result that the province's share of the total Canadian acreage increased from a quarter to more than a half. The relatively small acreage of flaxseed seeded in other provinces has been declining steadily.

Flaxseed production in Canada totalled 29 million bushels in 1965, the second highest on record. (The highest was in 1956 when production totalled 35 million bushels.) The large production in 1965 resulted from an increase in seeded acreage and a higher than average yield of 12.6 bushels an acre. As a result of the build-up of stocks, production in 1966 declined to 22 million bushels and that in 1967 to nine million. In 1968, production is estimated to be 18 million bushels.

Domestic utilization of flaxseed has been declining. Domestic disappearance in 1957 was 7.5 million bushels, but only 3.8 million bushels in 1967. Domestic crushings of flaxseed decreased from 3.7 million bushels in 1958 to 2.4 million bushels in 1962 and 1963, increased to 3 million bushels in 1964 and then declined steadily to 2.4 million bushels in 1967.

Exports of flaxseed averaged 15.1 million bushels during the five years 1956 to 1960 and 14.3 million bushels for the five years 1961 to 1965. In 1967, exports were 12.6 million bushels (Table VIII-17).

Exports of linseed oil have varied widely from year to year (Table VIII-18). Between 1957 and 1968, exports fluctuated between a low point of 2,200 tons in 1962 and the 11,500 tons in 1968.

Table VIII-16

FLAXSEED: CANADA - ACREAGE, PRODUCTION, FARM VALUE AND EXPORTS
AVERAGE 1957/1961; ANNUAL 1962 TO 1968

Average 1957/1961	Seeded Acreage		Yield per Seeded Acre (Bushels)	Production (Million bushels)	Average Farm Price (Dollars per bushel)	Farm Value (Million dollars)	Exports (Million bushels)
	Percentage Distribution						
	Manitoba	Alberta					
			Total (Million acres)				
	27.1	20.8	2.5	19.2	2.86	54.8	13.2
1962	46.1	26.9	1.4	16.1	3.06	49.2	12.6
1963	48.7	30.1	1.7	21.1	2.91	61.5	13.6
1964	51.8	26.4	2.0	20.3	2.94	59.7	14.3
1965	58.3	24.2	2.3	29.2	2.71	79.0	18.9
1966	57.7	22.4	1.9	22.0	2.72	59.9	16.6
1967	64.5	18.8	1.0	9.4	3.07	28.8	12.6
1968	53.8	26.0	1.5	18.2			

Source: Handbook of Agricultural Statistics, Part I, op. cit.; Quarterly Bulletin of Agricultural Statistics, op. cit.

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Table VIII-17

FLAXSEED: CANADIAN EXPORTS BY DESTINATION
AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 AND 1967
(Thousand bushels)

	Average 1956/1960	Average 1961/1965	1966	1967
EEC countries	5,025	4,068	6,100	3,603
United Kingdom	6,120	4,829	3,546	2,605
Norway	353	285	272	216
Portugal	96	154	90	132
Spain	157	386	924	708
Eastern Europe	103	416	785	590
Japan	2,919	3,819	--	136
Other	348	338	--	--
Total	15,121	14,295	16,568	12,610

Source: Canadian Grain Exports, op. cit.

Table VIII-18

LINSEED OIL, LINSEED OILCAKE AND MEAL: EXPORTS FROM CANADA
AVERAGE 1957/1961; ANNUAL 1962 TO 1968
(Short tons)

Calendar Year	Oil	Oilcake and Meal
Average 1957/1961	6,232	17,664
1962	2,200	12,742
1963	4,000	12,376
1964	9,500	15,146
1965	11,250	23,255
1966	6,200	15,256
1967	4,450	8,046
1968	11,500	5,128

Source: Exports by Commodities, op. cit.

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Exports of linseed oilcake and meal have been declining more or less steadily from 17,664 tons exported in the five years 1957 to 1961 to 5,128 tons in 1968.

The average farm price for flaxseed during the four crop years 1957 to 1960 was \$2.74 a bushel. A decline in production of some eight million bushels in 1961 resulted in a rise in price to \$3.32 a bushel. Prices declined beginning in 1962, and in 1966 averaged \$2.72 a bushel, as stocks reached record levels. An exceptionally small crop in 1967 resulted in a firming of prices to \$3.07 a bushel. However, the larger crop of 1968 again resulted in a lowering of prices, and the average for the year is expected to be not more than \$3.00 a bushel.

The utilization of linseed oil has been decreasing in Canada and throughout the world as a result of greater competition from synthetic substitutes.

On world markets, Canadian flaxseed has been meeting increasingly stronger competition from the United States and Argentina. With continuing strong competition for reduced world market outlets in prospect, there will be little opportunity for increased sales of Canadian flaxseed and linseed oil in export markets.

CHAPTER IX

CONCLUSIONS

The aim of this Chapter is to draw together the conclusions with respect to the prospective market outlets for Canadian wheat and other grains in 1975, arising from the analysis of the projections of the consumption and production of wheat and coarse grains and of policy and other developments in importing countries, together with data relating to Canada's competitive position in the export market.

Consideration will also be given to some of the implications of the conclusions with respect to future markets for wheat and other grains as they relate to adjustments in resource use and the structure of agriculture in Western Canada.

Wheat

Over the 20 years 1949 to 1968, an average of 27 per cent of the annual disposition of Canada's wheat has been for domestic use and 73 per cent has been for export (Table V-11).

Domestic Use

During the 20-year period, an average of 154 million bushels of wheat has been used domestically. Of this amount, 90 million bushels, or 58 per cent, have been used on farms for seed and feeding livestock and 64 million bushels, or 42 per cent, have been marketed through commercial channels for processing into flour or other food products, for industrial use and for use in the feed compounding industry (Table IX-1).

The use of wheat on farms for livestock feeding varies from year to year and is influenced by the build-up of farm stocks resulting from insufficient delivery quotas to clear current production off farms. During the five years 1964/1968, an average of 55.6 million bushels of wheat was used as feed for livestock as compared with 73.7 million bushels during the five years 1954/1958. During this 20-year period, the use of wheat in livestock feeding varied from a high of 77.6 million bushels in 1955

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to a low of 44.1 in 1961. The current build-up of wheat stocks on farms could easily result in an increase in the use of wheat for livestock feeding to about 90 million bushels by 1975.

Table IX-1

CANADA: DOMESTIC DISPOSITION OF WHEAT
AVERAGE 1949/1953 TO 1964/1968
(Million bushels)

	Five-Year Averages			
	1949/1953	1954/1958	1959/1963	1964/1968
Human food	49.8	53.0	56.5	59.9
Seed requirements	36.3	32.3	37.9	39.3
Industrial use	0.2	1.2	1.5	2.1
Loss in handling	1.0	0.3	0.9	1.1
Livestock feed	61.4	73.7	53.2	55.6
Total	148.8	160.5	150.0	158.0

Source: Dominion Bureau of Statistics, Crops Section, Agriculture Division.

The quantity of wheat used for human food averaged 59.9 million bushels during the five years 1964/1968, as compared with 49.8 million bushels during the five years 1949/1953.

The per capita consumption of wheat and rye flour averaged 153.1 pounds during 1949/1951, 135.6 during 1959/1961 and 133.6 pounds during 1964/1966. The projected per capita consumption of wheat and rye flour for 1975 is 121 pounds. The total human consumption of wheat and rye flour in Canada has been projected at 2,869 million pounds in 1975 as compared with an average of 2,101 million for the period 1949/1951.^{1/}

Applying the same percentage increase to the amount of wheat used for human food in the 1949/1951 period, the human consumption of wheat in 1975 would be about 68 million bushels. As indicated above, the use of wheat for feed, which varies widely from year to year, could amount to as much as 90 million bushels by 1975. Allowing 42 million bushels to cover requirements for seed and industrial uses, the total domestic use of wheat in 1975 may be as much as 200 million bushels.

^{1/} Yankowsky, op. cit.

The Export Market

Forecasts of the approximate level of wheat and flour imports in 1975 have been made for the developed, developing and centrally planned groupings of importing countries, and for selected countries within these groups, based on the FAO and OECD projections of consumption and production, modified by policy and other developments, as presented in Chapters III and IV (Table IV-26). Estimates of the share of the prospective markets which Canada may supply have been based on the analyses of export competition and Canada's competitive position in export markets which are presented in Chapters V and VI (Tables V-17 and VI-3).

As shown in Table IX-2, the imports of the developed countries are projected at 15.3 million bushels in 1975, only slightly higher than the average imports for the five-year period 1963/1967. Canada's projected exports to the developed countries are 6.5 million tons compared with an average of 5.0 million for the last five years.

A forecast of 23 million metric tons of imports of wheat and flour into the developing countries in 1975 anticipates a slight decrease in imports as a result of increased production in India and Pakistan. A reduction in Canada's share in those markets to less than 5 per cent in 1975 from an average of 6 per cent during the last five years is forecast on the basis of an anticipated reduction in exports to India, which has been Canada's most important export outlet in the developing countries. Canada's exports of wheat and flour to the developing countries in 1975 is forecast at 1.1 million tons, a reduction of 20 per cent from the most recent five-year average.

The greatest change in Canada's projected market for wheat is in the centrally planned group, of which Canada's share will be reduced from 49 to 24 per cent. Total imports for this group are forecast at 9.2 million tons as compared with an average of 13.5 million tons for the five years 1964/1968. Canada's projected exports to the centrally planned countries are 2.25 million tons as compared with an average of 5.4 million tons during the 1965 to 1968 period.

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Table IX-2

PROJECTED IMPORT REQUIREMENTS OF WHEAT AND FLOUR
BY IMPORTANT IMPORTING COUNTRIES CLASSIFIED BY ECONOMIC GROUPINGS, 1975,
AND CANADA'S ESTIMATED EXPORTS TO THOSE MARKETS

	Total	Canada's Estimated Exports		
	Imports (Million metric tons)	(Per cent of total)	(Million metric tons)	(Million bushels)
<u>Developed countries</u>				
EEC countries	(4.5)	(40)	(1.70)	(62.5)
West Germany	1.5	50	0.75	27.5
Netherlands	1.0	25	0.25	9.2
Belgium/Luxembourg	0.6	60	0.35	12.9
Italy	1.0	25	0.25	9.2
France	0.4	25	0.10	3.7
United Kingdom	3.4	60	2.00	73.5
Other Northwest Europe	1.0	30	0.30	11.0
South Europe	0.5	20	0.10	3.7
Japan	5.5	40	2.20	80.8
South Africa	<u>0.4</u>	<u>50</u>	<u>0.20</u>	<u>7.3</u>
Total	15.3	40	6.50	238.8
<u>Developing countries</u>				
North and Central America	7.0	7	0.50	18.4
Africa	6.0	3	0.20	7.3
Asia	<u>10.0</u>	<u>4</u>	<u>0.40</u>	<u>14.7</u>
Total	23.0	5	1.10	40.0
<u>Centrally planned countries</u>				
U.S.S.R.	--	--	--	--
Eastern Europe	3.5	--	--	--
Mainland China	5.0	35	1.75	64.3
Cuba	<u>0.7</u>	<u>70</u>	<u>0.50</u>	<u>18.4</u>
Total	9.2	24	2.25	82.7
WORLD	47.5	21	9.85	361.9

Conclusions

Combining the above economic groupings of countries, the 1975 forecast of world imports of wheat and flour amounts to 47.5 million metric tons as compared with average imports of 52.8 million tons for the five years 1964 to 1968. Canada's projected total exports of wheat and flour are 362 million bushels (9.85 million metric tons), representing a reduction of 17 per cent as compared with the average for the most recent five years.

The projected reduction in Canada's exports to the centrally planned countries emphasizes the renewed importance of her traditional markets in the developed countries in the years ahead. On the basis of the 1975 forecast, 66 per cent of Canada's wheat and flour exports will be marketed in the developed countries as compared with an average of 47 per cent for the 1961/1965 period, and 82 per cent for 1956/1960. The projection assumes that Canada can capture and hold 40 per cent of this market, an assumption which can be fulfilled only if all necessary steps are taken to maximize Canada's competitiveness by improving the effectiveness of grading and pricing, by reducing the cost of production and transportation, and by giving greater attention to market development. With an increase in the use of domestically produced soft wheats in most developed countries, Canada's strong protein wheats should have a competitive advantage for blending, providing protein becomes a basic criterion in an amended grading system for Canadian wheat.

Taking both domestic and export demand into account, total utilization of wheat in Canada in 1975 may amount to about 562 million bushels.

Coarse Grains

The disappearance of coarse grains in Canada reached a peak of 849 million bushels in 1966 as compared with an average of 717 million bushels for the five years 1956 to 1960 (Table IX-3). About 90 per cent of the total volume of coarse grains is used domestically. Some 50 per cent of the coarse grains in Canada is oats, 95 per cent of which is used domestically. Barley makes up about 30 per cent of the total volume of coarse grains. About 70 per cent of the barley is used domestically and 30 per cent goes into export channels.

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Table IX-3

CANADA: DOMESTIC USE AND EXPORTS OF COARSE GRAINS
 AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 AND 1967
 (Million bushels)

	Average 1956/1960		Average 1961/1965		1966		1967	
	Domestic Use	Exports	Domestic Use	Exports	Domestic Use	Exports	Domestic Use	Exports
Rye	6.1	4.2	6.0	6.0	9.5	10.0	8.0	4.8
Oats	363.1	12.2	377.5	15.1	387.3	4.8	333.4	3.5
Barley	157.4	68.6	144.2	36.1	208.8	58.5	208.4	41.4
Corn	41.6	0.4	66.7	0.2	88.8	0.3	107.0	0.3
Mixed grain	63.0	--	71.2	--	81.4	--	76.4	--
Total	631.2	85.4	665.6	57.4	775.8	73.6	733.2	50.0

Source: Dominion Bureau of Statistics, Crops Section, Agriculture Division.

Rye makes up only a very small proportion of the total volume of coarse grains, but over 50 per cent is exported. The proportion of corn in the total volume of coarse grains has been increasing rapidly, and currently amounts to about 13 per cent of the total. About one-third of the corn used is imported.

Domestic Use

The domestic utilization of the different coarse grains in Canada for the years 1963/1967 is shown in Table IX-4. Slightly more than 2 per cent of the coarse grains used domestically is used for food. The coarse grains used as food are primarily oats and corn. Seed and industrial use each accounted for about 5 per cent, with livestock feed making up about 88 per cent of the total domestic utilization of coarse grains. The coarse grain requirements in 1975 will therefore depend on the changes in consumption of animal products, that are anticipated.

Projections of the consumption of meat, poultry and dairy products in Canada indicate that, as compared with the base period 1964/1966, projected consumption in 1975 will show increases of 9.3 per cent for dairy products, 32 per cent for red meats and

Conclusions

48 per cent for poultry meat.^{2/} Consumption of beef is projected to increase by 40 per cent over the 1964/1966 average.

Table IX-4
CANADA: DISPOSITION OF COARSE GRAINS
AVERAGE 1963/1967
(Thousand bushels)

	Human Food	Industrial Use	Seed Requirements	Loss in Handling	Animal Feed	Total
Rye	447	1,925	832	47	4,132	7,383
Oats	5,519	--	21,081	36	350,664	377,300
Barley	171	16,353	11,858	109	150,447	178,938
Corn		20,143	334		304,125	81,302

Source: Dominion Bureau of Statistics, Crops Section, Agriculture Division.

Projections of the number of animals required for slaughter in 1975 show a substantial increase over 1964/1966, amounting to 34 per cent for cattle, 27 per cent for hogs and 48 per cent for poultry.^{3/}

The projected increases in the number of animals slaughtered and the numbers on farms suggest increases in total feed grain requirements by 1975 of 20 or 27 per cent depending on the efficiency of feeding.^{4/} In terms of all grains, the 1975 feed requirement would be between 840 and 890 million bushels, an increase of 140 to 190 million bushels over the average for 1964/1966. Allowing for seed and industrial use, the total domestic disappearance of coarse grains in 1975 should be between 900 and 950 million bushels.

^{2/} Z. J. Yankowsky, Frank Shefrin, J. F. Cavin, Demand-Supply Projections for Canadian Agriculture in 1980, Economics Branch, CDA, Ottawa, June 1968.

^{3/} Ibid., p. 40.

^{4/} Ibid., p. 42.

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The Export Market

World imports of coarse grains averaged 41.6 million metric tons during the three years 1965/1967 as compared with 20.5 million tons during the three years 1957/1959, an increase of 105 per cent. The FAO projections indicated a leveling-off in the rate of growth of consumption of coarse grains and a relative gain in production in importing areas.

On the basis of the FAO and OECD projections of the consumption and production of coarse grains in 1975, world imports of coarse grains for 1975 are forecast at between 30 and 35 million tons (Table IV-27). The lower point of this range would represent a decrease of 28 per cent in imports of coarse grains from the level of the past three years. The breakdown of the projected imports of coarse grains by the principal importing areas is shown in Table IX-5.

Table IX-5

PROJECTED IMPORTS OF COARSE GRAINS IN 1975
BY ECONOMIC GROUPINGS OF IMPORTING COUNTRIES

(Million metric tons)

	Projected Imports 1975	Average Imports 1963/1967
<u>Developed countries</u>		
EEC	11.0	13.0 ⁽¹⁾
United Kingdom	3.0	4.1
Other Northwest Europe	2.0	3.2
South Europe	0.5	3.0
Japan	10.0	6.1
Total	26.5	30.3 ⁽²⁾
<u>Developing countries</u>	3- 6	3.6
<u>Centrally planned countries</u>	1- 2	1.7
TOTAL	30-35	35.6

(1) Excludes EEC intra-trade of 2.4 million metric tons.

(2) Includes 0.9 million metric tons for Canada and United States.

Conclusions

Corn makes up 62 per cent of the world's exports of coarse grains as compared with 16 per cent each for barley and for millet and sorghums. The exports of corn and millet and sorghums have increased threefold during the past decade while those of barley have remained relatively unchanged.

The United States, whose exports of corn have tripled in the last decade, provides 56 per cent of the coarse grains exported. Other important exporters of corn are Argentina and South Africa which in the last three years supplied 12 and 3 per cent, respectively, of world exports of coarse grains. During the past few years the United Kingdom and the EEC have been exporters of barley with the aid of export subsidies, making up 2 and 4 per cent of coarse grains exports.

Canada has not been a strong competitor in the coarse grain export market in recent years (Table IX-6). Total exports of coarse grains from Canada declined from an average of 85 million bushels for the 1956 to 1960 period to a low of 28 million bushels in 1968. Exports of oats, which have varied greatly from year to year, increased from an average of 12 million bushels during 1956/1960 to 19 million bushels in 1963 but have declined during the last three years to a low of two million bushels in 1968. Exports of rye, which also have varied from year to year, amount to four million bushels.

Barley, the only coarse grain which Canada exports in quantity, had average exports of 69 million bushels during the 1956 to 1960 period. Since then, exports have varied between 37 and 58 million bushels, but dropped sharply to 21 million bushels in 1968. This sudden decrease in exports is due to the loss of the EEC market and to a drop in exports to Japan from 15 million to 800 thousand bushels as a result of competition from heavily subsidized exports from France (Table IX-7). Preliminary indications for 1969 are for exports in excess of the 1956/1960 average.

Yields of barley reported by the agricultural research stations and by the more successful farmers in Western Canada are extremely encouraging with respect to the potential of barley competing with U. S. corn in a market where the competition would be based on feeding value.

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Table IX-6

EXPORTS FROM CANADA OF RYE, BARLEY AND OATS
 AVERAGE 1956/1960; ANNUAL 1961 TO 1968
 (Thousand bushels)

	Rye	Barley and Products	Oats and Products	Total
Average 1956/1960	4,249	68,643	12,227	85,119
1961	4,363	42,909	3,454	50,726
1962	7,310	15,377	21,700	44,387
1963	5,501	46,935	18,759	71,195
1964	4,857	37,032	15,551	57,440
1965	8,050	38,029	15,922	62,001
1966	9,963	58,542	4,085	72,590
1967	4,760	41,405	3,227	49,392
1968	4,248	21,210	2,252	27,710

Source: The Canadian Wheat Board, *op. cit.*, 1967-1968.

In the past decade, barley's share in the world export of feed grains has declined from 30 to 16 per cent. This means that in order to obtain a substantial share of the world market for feed grains, it will be necessary for Canada not only to price barley competitively with corn but also to carry on an educational campaign in importing countries to publicize the feeding value of barley in comparison with corn and the economies involved in the use of a larger proportion of barley in feeding rations. It is largely on the basis of this potential and the fact that Canada is an established supplier of barley to Japan, which is likely to continue to expand her feed grain imports, that exports of Canadian barley in 1975 are projected at about 125 million bushels.

This export potential, together with the increased feed grain requirements to provide for Canada's expanded livestock population, suggests outlets by 1975 for 1,075 million bushels of Canadian coarse grains.

Table IX-7

EXPORTS OF BARLEY FROM CANADA BY DESTINATION
 AVERAGE 1956/1960; ANNUAL 1961 TO 1968
 (Thousand bushels)

	Average								
	1956/1960	1961	1962	1963	1964	1965	1966	1967	1968
EEC	4,037	70	--	170	2,418	13,716	16,469	9,602	--
United Kingdom	29,892	7,391	6,803	9,546	9,832	4,733	9,316	1,943	10,874
Other Northwest Europe	559	--	418	171	1,065	1,273	6,070	--	500
Eastern Europe	1,927	--	--	3,023	--	--	786	--	--
U.S.S.R.	973	--	--	--	--	--	--	--	--
Israel	--	--	--	--	628	3,019	2,532	2,954	1,266
Japan	5,614	--	--	3,654	8,854	6,080	10,493	15,448	772
Other Asia	229	--	--	1,408	46	32	--	--	--
Mainland China	4,072	19,284	1,083	14,694	2,005	--	--	--	--
Oceania	16	--	--	--	--	--	--	1,305	116
United States	15,749	9,726	2,233	8,675	7,738	4,704	7,372	4,372	7,677
Other Western Hemisphere	49	184	--	185	152	163	83	459	--
Total	63,117	36,655	10,534	41,526	32,738	33,720	53,121	36,083	21,210

Source: Canadian Grain Exports, op. cit.

Implications for Agricultural Adjustment

The principal implication of the reduced future market outlets for Canadian wheat is the need for adjustments in the use of agricultural resources in Western Canada. The objective of such adjustments should be to ensure that the use of resources, while taking into account marketing opportunities, will maximize returns to farmers on a continuing basis.

Over the last 25 years, the area in wheat increased from 22 million acres in 1944 to 27 million in 1949, declined to 21 million acres in 1957 and again increased to a new high of 30 million acres in 1967. Production of wheat during the same period increased from 294 million bushels in 1945 to 678 million in 1952, fell to 305 million in 1954; increased to 551 million in 1956 and fell to a low of 260 million bushels in 1961. An all time production record of 807 million bushels was established in 1966. Exports of wheat and flour ranged from 195 million bushels in 1947 to a high of 595 million in 1963. Year-end stocks varied from 74 million bushels in 1945 to 734 million in 1956.

These statistics indicate a high degree of flexibility in wheat production in Canada and the ability and willingness of producers to make adjustments. It is a vital responsibility of the Government to forecast, as accurately and as far in advance as possible, future developments on the international market for wheat as a guide to farmers with regard to the types of adjustments which they may be required to make. Under certain circumstances governments may be required to provide, in addition to information on trends, financial incentives to make adjustments which are essential to a rational supply management.

The high variability of yields of wheat from year to year, which is a characteristic of Western Canada, makes it difficult to estimate the acreage of land which may be required to produce a given quantity of wheat. During the five years, 1963 to 1967, the average yield of wheat in Western Canada was 22.2 bushels per acre. On the basis of this average yield, the 1975 projected requirement of 562 million bushels of wheat, less about 20 million bushels per year produced in Ontario, would require 24.4 million acres. Taking into account an increasing trend in yields per acre due to greater use of fertilizer and technological

developments in cropping practices, it would seem to be in order to accept 23 million acres as an adequate area of land to devote to wheat in 1975. On the basis of an average of 29 million acres seeded to wheat during the five years 1964 to 1968, it is suggested that six million acres might be diverted from wheat to other crops by 1975.

As noted above, grain requirements for feeding livestock in 1975 are expected to increase 140 to 190 million bushels over the average for 1964/1966. After deducting the increase of 30 million bushels of wheat for livestock feeding included in the above projection of wheat utilization in 1975, the increased requirements of coarse grains in 1975 would be about 150 million bushels. In terms of barley at 40 bushels per acre, this would require 3.75 million acres additional land.

The projected increase of 60 per cent in beef production to meet increased domestic consumption by 1975 would mean an increase in slaughterings of cattle of over one million head.^{5/} Since the rate of increase in consumption of beef is even higher in the United States than in Canada, it may be assumed that by 1975 the export of Canadian feeder cattle to the United States may have increased from 123 thousand head in 1966 to 200 thousand head. This would mean an increase of 1.2 million calves per year or an addition to the beef cow herd of about 1.4 million head. At an average of three acres per head, this would involve some 4.2 million acres of additional improved land in forage crops and pasture.

This very rough calculation suggests that to provide the increased feed grain, forage and pasture needed to produce the additional livestock and livestock products required for consumption and export in 1975 would involve the diversion of 7.9 million acres of improved land from wheat to coarse grain forage and pasture crops.

Oilseeds provide an attractive alternative to wheat in many areas of Western Canada and will continue to compete for increased land. The review of the market outlook for Canadian oilseeds presented in Chapter VIII indicates that a gradual expansion in Canadian rapeseed acreage up to a total of four million acres can be anticipated by 1975.

^{5/} Yankowsky, et al., op. cit., p. 40.

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This examination of some of the alternatives to wheat indicates a potential use by 1975 for considerably more than the six million acres surplus to the production requirements for wheat. The foregoing analysis relating to the land requirements for the full development of the livestock potential must be considered as preliminary, and requires confirmation by a more careful and complete study. However, even in this preliminary form, it may be accepted as an indication of the direction of adjustments in the use of agricultural resources in the Western Provinces.

Major agricultural adjustments are extremely complex and are far-reaching in their implications. They involve important changes in the use of human as well as financial and physical resources. A shift from specialized wheat farming, in connection with which work is largely seasonal, to livestock farming, requiring important additional labour inputs in putting-up forage in summer as well as in feeding and maintenance in winter, affects the entire farm family. It may also involve acquiring new skills. A shift to livestock farming also involves increased capital for the breeding herd; for the necessary buildings, corrals and fences; and for new entrants in cow-calf operations, for the financing of operations for two or more years pending the first sale of feeders.

Wheat production will continue to have a wide appeal as compared with other types of farming. The question as to what land should be shifted out of wheat must depend on the decision of the individual farmer. He, however, will be guided in his decision by the economic factors as they affect him. The establishment of protein grading at the farm level, in addition to ensuring that Canada's wheat is more competitive on world markets, can serve as an important guide to rational farmer decision-making. The market demand for wheats having different levels of protein must be reflected in delivery quotas. The payment of protein differentials in conjunction with protein grading at the farm level will also provide an effective guide to farmers in deciding the extent to which they continue to produce wheat or coarse grains or forage crops on the basis of relative profitability. A recent report on the protein content of Canadian wheat from 1927 to 1968

published by the Board of Grain Commissioners for Canada provides much basic background material for a study of the implications of protein grading for the use of land in different areas of Western Canada. ^{6/}

Recommendations

A principal aim in this Study has been to bring together a body of factual data relating to the consumption, production and trade in wheat which will assist in a rational appraisal of the current wheat problem in Canada. The importance, in the future, of avoiding complacency, which has been a significant factor in the deterioration which has occurred in Canada's competitive position in world wheat markets, must be emphasized. To this end, it is recommended that a continuing appraisal of all aspects of the marketing of wheat be carried out to ensure that institutions and policies, which may have functioned extremely well in the past, are suited to meet the needs of the future. It is hoped that the data on wheat, which has been brought together in this report, will be updated and extended periodically and that a more complete analysis of coarse grains and oilseeds than has been possible in this Study will be initiated.

Canadian grain producers should assume a direct responsibility for financing and directing a research and information program relating to grains. While governments have a continuing responsibility for broadly based research in agriculture, farmers can ill afford to leave the research and information functions entirely to government agencies. In this era of large scale commercial farming, farmers must be equipped with the very best information, both as a basis for decision-making in connection with their farming operations and as a guide to intelligent and effective lobbying for their industry. It is important that farmers become more actively involved in the determination of priorities in research programs, and they must at the same time assume a responsibility to ensure that adequate funds are available. The Australian experience where the wheat producers' research contribution is matched by the Commonwealth Government provides a useful model to follow.

^{6/} V. Martens and I. Hlynka, Protein Content of Canadian Wheat 1927/1968, Board of Grain Commissioners for Canada, Winnipeg, 1969.

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A survey of the competitive position of Canadian wheat in selected markets suggests that the principal causes of Canada's declining market share are: a lack of consistent quality as measured by uniformity of protein content within and between shipments of wheat designated as the same grade; insufficient flexibility in pricing to meet market competition; inadequate market development effort; increased self-sufficiency in importing countries; and unfair competition resulting from the use of export subsidies and the manner in which government-assisted export programs are carried out by competing exporters (Chapter VI).

It is recommended that action be taken urgently to review and amend Canada's wheat grading system, having regard particularly for such basic criteria as protein, in order to maximize the competitiveness of Canadian wheat from a quality standpoint. Action on the part of the Government of Canada to amend a system of grading, which was last reviewed in 1930, is long overdue. Other important wheat exporters have already recognized a need to supplement the traditional visual basis for the grading of wheat by chemical tests for protein content and other factors associated with baking quality. It is important also that a new wheat grading system should provide for protein testing at the farm level in order that individual farmers may receive delivery priorities and price differentials which reflect the market demand for their product. The resulting farm returns would serve as a guide to rational land use in the different areas in Western Canada.

The validity of the long accepted Canadian policy of establishing export wheat prices on an f. o. b. basis at export terminal ports on a "one price to all customers" basis has been questioned recently. The claim is made that the full scale of competitive factors emerge only at the port of destination and that some form of destination pricing with a greater degree of flexibility should be adopted by the Canadian Wheat Board. The complexities of wheat pricing and the institutional implications involved in any radical change in the pricing system are so great, that such action should be taken only after a very careful study of the whole pricing mechanism. It is, therefore, recommended that arrangements be made forthwith for an exhaustive study of wheat pricing by an outstanding, international authority on the subject, as a basis for future policy decision.

Generally speaking, the Canadian Wheat Board and the Board of Grain Commissioners, aided by Canadian Government Trade Commissioners, have done an effective job of maintaining a liaison with wheat importing countries, both through visits to those countries and by bringing country missions to Canada. A market research program has been carried out over a period of years, and while the quality of market research is good, it is evident that the resources devoted to this important area are inadequate. It is apparent, also, that market research findings have not always been reflected in marketing policies, with the result that Canada has fallen behind her competitors in making adjustments to changing market conditions. It is recommended that provision be made for a greatly expanded market research and development program. The development phase of such a program should include a large element of producer participation in carrying out campaigns to stimulate the consumption of wheat products in selected countries.

A longer-term market development study which merits consideration involves a thorough review of Canada's food aid program, particularly as it relates to wheat. The study should seek to determine, in selected developing countries, the practicability of combining the immediate objective of improved levels of nutrition with the longer-term development of continuing commercial markets for wheat.

A key factor in the ability of Canadian wheat to compete on world markets is the efficiency of Canada's grain handling system, including assembly, transportation, storage and handling facilities, and the cost of getting wheat from the farm to seaboard. Studies of grain transportation undertaken during the past couple of years by a Grain Transportation Technical Group made up of representatives of various sectors of the grain industry should lead to important improvements in efficiency and reduced costs. It is hoped that these studies will be extended to other phases of grain handling and that the findings will be implemented as promptly as possible.

As already indicated, an important problem area with which Canada has to contend as an exporter of wheat, results from the national policies of certain other countries. Some importing countries provide high price supports for wheat, designed

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to encourage increased domestic production and to reduce imports. At the same time, certain exporting countries use export subsidies and other devices to export wheat at prices below those prevailing on their highly protected domestic markets. Another form of competition resulting from national policies of certain exporting countries is concessional shipments of wheat to developing countries under government-assistance programs as gifts, as sales for local currencies, or under subsidized credit, which frequently replace the normal commercial sales of other exporting countries.

Although action to bring about changes in the policies of other countries is usually limited in effectiveness, it is important that the Government of Canada and producers' organizations continue to bring pressure to bear on offending countries, both bilaterally and through appropriate multilateral organizations, to reduce the effects of nontariff barriers to trade in wheat, to bring the use of export subsidies within reasonable limits, and to ensure that wheat distributed under government-assisted export programs is additional to normal commercial trade.

APPENDIX

STATISTICAL TABLES

Table A-1

WHEAT PRODUCTION BY REGIONS AND SELECTED COUNTRIES
AVERAGE 1954/1958; ANNUAL 1959 TO 1968

(Million metric tons)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Western Europe	37.0	42.7	39.6	37.7	47.9	41.5	46.8	48.8	44.5	52.0	51.7
EEC countries	22.8	25.9	24.2	23.2	29.6	24.6	29.2	30.5	26.5	31.4	32.2
Belgium/Luxembourg	.7	.9	.8	.8	.9	.8	1.0	.9	.7	.9	.8
Germany, F.R.	3.5	4.5	5.0	4.0	4.6	4.9	5.0	4.3	4.5	5.8	6.2
France	9.4	11.5	11.0	9.6	14.0	10.3	13.8	14.8	11.3	14.4	14.8
Italy	8.8	8.5	6.8	8.3	9.5	8.1	8.6	9.8	9.4	9.6	9.6
Netherlands	.4	.5	.6	.5	.6	.5	.7	.7	.6	.7	.7
EFTA countries	5.4	5.6	5.8	5.2	7.2	5.8	7.1	7.5	6.1	7.6	7.2
Denmark	.3	.4	.3	.4	.6	.5	.5	.6	.4	.4	.5
Austria	.5	.6	.7	.7	.7	.7	.8	.7	.9	1.0	1.0
Portugal	.7	.6	.5	.4	.6	.5	.5	.6	.3	.6	.7
Sweden	.8	.8	.8	.8	.9	.6	1.1	1.0	.6	1.1	1.1
Switzerland	.3	.4	.4	.3	.4	.3	.4	.4	.4	.4	.4
United Kingdom	2.8	2.8	3.1	2.6	4.0	3.0	3.8	4.2	3.5	3.9	3.5
Greece	1.5	1.8	1.7	1.6	1.8	1.4	2.2	2.0	2.0	1.8	1.5
Spain	4.5	4.6	3.5	3.4	4.8	4.9	4.0	4.7	4.8	5.6	5.5
Yugoslavia	2.2	4.1	3.6	3.2	3.5	4.1	3.7	3.5	4.6	4.8	4.4
Eastern Europe	11.5	14.0	12.9	13.6	13.9	13.4	14.4	18.6	18.1	20.1	20.2
Bulgaria	2.0	2.4	2.4	2.0	2.1	1.9	2.1	2.9	3.2	3.2	2.5
Rumania	2.8	4.0	3.4	4.0	4.0	3.8	3.8	5.9	5.1	5.8	4.8
Hungary	1.8	1.9	1.8	1.9	2.0	1.5	2.1	2.4	2.3	2.7	2.8
Czechoslovakia	1.4	1.6	1.5	1.7	1.6	1.8	1.8	2.0	2.2	2.5	3.1
East Germany	1.2	1.4	1.4	1.0	1.3	1.3	1.3	1.8	1.5	1.7	2.8
Poland	2.2	2.5	2.3	2.8	2.7	3.1	3.0	3.4	3.6	3.9	4.6
U.S.S.R.	58.3	69.1	64.3	66.5	70.8	49.7	74.4	59.6	100.5	77.3	96.2

continued ...

Table A-1 (cont'd.)

	Average 1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
North and Central America	42.3	43.9	52.2	42.7	46.7	52.6	53.5	55.1	59.8	60.0	62.6
Canada	12.1	12.1	14.1	7.7	15.4	19.7	16.3	17.7	22.5	16.1	17.7
United States	29.1	30.5	36.9	33.6	29.8	31.2	34.9	35.8	35.7	41.5	42.7
Mexico	1.1	1.3	1.2	1.4	1.5	1.7	2.1	1.6	1.6	2.3	2.2
South America	9.4	8.1	6.3	7.2	8.2	11.1	13.9	8.6	8.4	9.4	8.6
Argentina	6.5	5.8	4.0	5.1	5.7	8.9	11.3	6.2	6.2	7.3	5.9
Brazil	.8	.6	.4	.3	.3	.1	.3	.2	.2	.4	.7
Chile	1.1	1.1	1.1	1.1	1.3	1.3	1.3	1.2	1.2	1.2	1.1
Asia	27.7	30.2	30.9	31.1	34.4	32.8	31.8	35.6	33.4	37.9	45.1
Iran	2.5	3.0	2.6	2.8	2.7	3.0	2.6	3.0	3.2	4.4	5.0
Syria	.9	.6	.6	.8	1.4	1.2	1.0	1.0	.6	1.0	.6
Turkey	7.1	8.0	8.6	7.1	8.4	9.5	8.4	8.6	9.7	10.3	9.6
India	8.6	9.9	10.3	11.0	12.0	10.8	9.9	12.3	10.4	11.4	16.6
Pakistan	3.5	3.9	3.9	3.8	4.1	4.2	4.2	4.6	3.9	4.4	6.5
Japan	1.4	1.4	1.5	1.8	1.6	.7	1.2	1.3	1.0	1.0	1.0
Mainland China	24.7	31.3	25.0	18.0	20.0	21.8	23.1	21.5	20.8	23.0	21.0
Africa	5.6	5.2	5.6	4.4	6.0	6.4	5.9	5.8	5.2	6.2	8.1
U.A.R.	1.5	1.4	1.5	1.4	1.6	1.5	1.5	1.3	1.5	1.5	1.5
Algeria	1.3	1.1	1.5	.8	1.5	1.6	1.2	1.3	1.3	1.5	1.9
Morocco	1.0	1.0	1.0	.6	1.2	1.2	1.2	1.3	.8	1.1	2.4
South Africa	.7	.7	.8	.9	.7	.9	1.1	.7	.6	1.0	1.3
Oceania	4.5	5.6	7.7	6.9	8.6	9.2	10.3	7.4	13.0	8.0	15.1
Australia	4.4	5.4	7.4	6.7	8.4	8.9	10.0	7.1	12.7	7.6	14.7
WORLD	221.2	250.1	244.5	228.1	256.5	238.5	274.0	261.0	303.8	293.7	328.6

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-2

AREA SEEDED TO WHEAT BY REGIONS AND SELECTED COUNTRIES
 AVERAGE 1954/1958; ANNUAL 1959 TO 1968
 (Million hectares)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Western Europe	20.6	21.1	20.8	19.6	21.2	19.9	20.8	20.5	19.5	19.6	19.8
EEC countries	10.6	10.7	1.07	10.0	10.8	10.0	10.6	10.6	10.0	9.7	10.2
Belgium/Luxembourg	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2	.2
Germany, F.R.	1.2	1.3	1.4	1.4	1.3	1.4	1.4	1.4	1.4	1.4	1.5
France	4.2	4.4	4.4	4.0	4.6	3.9	4.4	4.5	4.0	3.9	4.1
Italy	4.8	4.7	4.6	4.3	4.6	4.4	4.4	4.3	4.3	4.0	4.3
Netherlands	.1	.1	.1	.1	.1	.1	.2	.2	.1	.2	.2
EFTA countries	2.5	2.4	2.4	2.3	2.5	2.3	2.4	2.4	2.1	2.1	2.5
Denmark	.1	.1	.1	.1	.2	.1	.1	.1	.1	.1	.3
Austria	.2	.3	.3	.3	.3	.3	.3	.3	.3	.3	.3
Portugal	.8	.8	.7	.7	.7	.7	.7	.6	.5	.7	.6
Sweden	.4	.3	.3	.3	.3	.2	.3	.3	.2	.2	.2
Switzerland	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1	.1
United Kingdom	.9	.8	.8	.7	.9	.8	.9	1.0	.9	.9	1.0
Greece	1.1	1.2	1.1	1.1	1.1	.9	1.2	1.1	1.0	.9	1.0
Spain	4.4	4.4	4.2	3.9	4.3	4.2	4.1	4.2	4.2	4.3	4.0
Yugoslavia	1.8	2.1	2.1	2.0	2.1	2.1	2.1	1.7	1.8	1.8	2.0
Eastern Europe	8.3	8.2	7.7	7.8	8.0	7.8	8.3	8.4	8.5	8.4	8.7
Bulgaria	1.4	1.4	1.2	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1
Rumania	2.8	3.0	2.8	3.0	3.0	2.9	3.0	3.0	3.0	2.9	3.0
Hungary	1.3	1.1	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.0	1.1
Czechoslovakia	.7	.7	.6	.6	.7	.7	.8	.8	.9	.9	1.0
East Germany	.4	.4	.4	.4	.4	.4	.4	.5	.5	.5	.6
Poland	1.5	1.4	1.4	1.4	1.4	1.5	1.6	1.7	1.7	1.8	1.9
U.S.S.R.	61.5	63.0	60.4	63.0	67.4	64.6	67.9	70.2	70.0	67.0	67.2

Table A-2 (cont'd.)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
North and Central America	30.3	31.8	31.8	32.0	29.2	30.3	33.0	32.2	32.9	37.0	35.2
Canada	9.3	9.9	9.9	10.2	10.8	11.2	12.0	11.4	12.0	12.2	11.9
United States	20.1	21.0	21.0	20.9	17.6	18.3	20.1	20.0	20.2	23.9	22.4
Mexico	.9	.9	.8	.8	.7	.8	.8	.7	.7	.9	.8
South America	8.0	7.2	6.5	7.0	5.9	8.1	8.3	6.5	7.1	7.6	8.2
Argentina	4.9	4.4	3.6	4.2	3.4	5.7	6.1	4.6	5.2	5.8	5.9
Brazil	1.2	1.2	1.1	1.0	.7	.8	.3	.3	.4	.5	.6
Chile	.8	.9	.8	.8	.8	.8	.8	.8	.7	.7	.7
Asia	32.5	34.7	35.7	34.9	36.4	37.2	36.2	36.1	34.7	34.7	38.6
Iran	2.2	3.2	3.3	--	--	--	--	2.0	2.1	2.5	--
Syria	1.5	1.4	1.5	1.3	1.4	1.6	1.5	1.2	.8	1.2	.9
Turkey	7.2	7.7	7.8	7.8	7.9	8.0	8.0	8.0	8.1	7.2	8.4
India	11.9	12.6	13.2	13.0	13.5	13.6	13.5	13.5	12.6	12.8	14.9
Pakistan	4.5	4.9	4.9	4.7	5.0	5.1	5.1	5.4	5.3	5.4	6.2
Japan	.6	.6	.6	.6	.6	.6	.5	.5	.4	.4	.3
Mainland China	27.1	24.1	26.5	26.1	24.4	24.2	25.5	24.7	24.5	24.5	25.0
Africa	7.3	7.3	7.4	6.8	6.8	7.6	7.8	8.0	7.8	8.0	8.7
U.A.R.	.6	.6	.6	.6	.6	.6	.5	.6	.6	.6	.6
Algeria	1.9	1.7	1.9	1.6	1.8	2.0	2.2	2.2	2.3	2.3	2.3
Morocco	1.6	1.7	1.6	1.6	1.4	1.6	1.5	1.6	1.6	1.8	2.0
South Africa	1.1	1.1	1.0	1.3	1.3	1.4	1.5	1.6	1.4	1.6	2.1
Oceania	3.9	5.0	5.5	6.0	6.8	6.8	7.3	7.2	8.5	9.3	10.9
Australia	3.9	4.9	5.4	6.0	6.7	6.7	7.2	7.1	8.4	9.2	10.7
WORLD	199.6	202.4	202.3	203.2	206.2	206.5	215.2	213.7	213.4	216.0	222.2

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-3

YIELD OF WHEAT BY REGIONS AND SELECTED COUNTRIES
 AVERAGE 1954/1958; ANNUAL 1959 TO 1968
 (100 Kg./hectare)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
Western Europe	17.9	20.2	19.0	19.2	22.6	20.8	22.5	23.8	22.8	26.6	26.1
EEC countries	21.4	24.2	22.5	23.2	27.4	24.6	27.5	28.8	26.4	32.3	31.6
Belgium/Luxembourg	26.8	37.8	36.6	28.4	31.2	30.2	31.0	31.6	26.8	36.8	34.1
Germany, F.R.	29.0	33.7	35.6	28.9	34.8	35.1	34.9	30.8	32.6	41.2	42.3
France	22.4	26.0	25.3	23.9	30.8	26.6	31.5	32.7	28.3	36.6	36.5
Italy	18.0	18.2	14.9	19.1	20.8	18.5	19.5	22.8	22.0	23.8	22.4
Netherlands	37.4	41.2	46.8	39.2	45.3	42.6	48.8	43.7	40.3	48.0	44.3
EFTA countries	21.6	23.2	24.0	24.5	29.1	25.3	29.8	30.4	28.6	35.4	35.6
Denmark	37.8	41.4	39.0	41.3	41.8	36.7	42.3	44.4	42.6	46.3	48.3
Austria	21.5	22.0	25.3	25.8	26.1	25.1	26.5	23.9	28.7	33.1	34.2
Portugal	8.8	7.4	6.7	6.5	8.8	8.0	6.9	9.7	6.0	8.2	14.1
Sweden	22.3	26.5	24.4	29.5	27.8	27.8	41.1	37.5	30.2	44.1	43.2
Switzerland	30.4	31.9	34.7	27.2	37.9	28.2	36.4	32.2	32.3	43.2	38.5
United Kingdom	31.0	36.2	35.7	35.4	43.5	39.0	42.5	40.7	38.4	41.8	35.4
Greece	13.7	15.2	14.8	14.9	16.2	14.8	17.9	17.7	19.2	19.5	14.8
Spain	10.3	10.6	8.3	8.8	11.3	11.5	9.6	11.1	11.5	13.2	13.9
Yugoslavia	11.7	19.4	17.3	16.2	16.5	19.3	17.6	20.6	25.1	25.6	21.7
Eastern Europe	13.9	17.0	16.9	17.3	17.3	17.1	17.3	22.3	21.4	24.0	23.0
Bulgaria	14.3	17.4	19.0	15.4	16.7	15.9	17.7	25.5	28.0	30.4	23.9
Rumania	10.0	13.4	12.2	13.4	13.3	13.2	12.9	19.9	16.7	20.0	16.1
Hungary	13.8	17.1	16.8	19.1	17.9	15.6	18.6	21.7	21.7	25.7	25.2
Czechoslovakia	19.2	22.9	23.3	25.9	24.5	24.6	25.1	24.2	25.3	26.9	31.3
East Germany	29.1	31.5	34.8	27.5	31.1	30.0	31.1	36.7	31.4	33.3	37.3
Poland	14.8	17.2	16.9	19.9	19.4	19.9	18.7	20.6	21.5	22.4	24.8
U.S.S.R.	9.5	11.0	10.6	10.6	10.5	7.7	11.0	8.5	14.4	11.5	14.3

NO

Table A-3 (cont'd.)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
North and Central America	14.0	13.8	16.4	13.4	16.0	17.4	16.2	17.1	18.2	16.2	17.8
Canada	13.0	12.2	14.2	7.5	14.2	17.6	13.6	15.4	18.7	13.2	14.9
United States	14.5	14.6	17.6	16.1	16.9	17.1	17.3	17.9	17.7	17.4	19.1
Mexico	13.1	13.4	14.2	16.8	20.4	20.8	25.7	24.0	23.6	26.7	26.3
South America	11.8	11.4	9.7	10.4	13.9	13.7	16.4	12.3	11.8	12.4	10.5
Argentina	13.3	13.3	11.0	12.1	16.6	15.8	18.4	13.2	12.0	12.6	9.9
Brazil	7.3	5.2	3.1	2.7	4.1	1.7	7.9	7.8	5.7	7.9	11.3
Chile	13.5	12.6	13.4	12.6	15.0	15.5	15.0	14.9	16.8	17.1	17.2
Asia	8.5	8.7	8.7	8.9	9.5	8.8	8.8	9.9	9.6	10.9	11.7
Iran	11.2	9.5	7.8	--	--	--	--	14.8	14.9	17.5	--
Syria	6.0	4.4	3.6	5.7	9.7	7.6	6.7	8.6	6.5	8.7	6.7
Turkey	9.9	10.4	11.0	9.1	10.7	11.9	10.5	10.7	12.0	14.2	11.5
India	7.3	7.9	7.8	8.5	8.9	7.9	7.3	9.1	8.2	8.9	11.1
Pakistan	7.8	8.0	8.0	8.2	8.2	8.3	8.3	8.6	7.5	8.1	10.7
Japan	21.8	23.6	25.4	27.4	25.4	12.2	24.5	27.0	24.3	27.2	31.4
Mainland China	9.1	13.0	--	--	8.2	9.0	9.1	8.7	8.5	9.4	8.4
Africa	7.7	7.1	7.5	6.4	8.8	8.4	7.5	7.2	6.7	7.7	9.3
U.A.R.	23.1	23.3	24.5	24.7	26.1	26.5	27.6	22.0	24.2	25.6	25.6
Algeria	7.0	6.3	7.8	5.2	8.0	7.8	5.3	6.0	5.5	6.7	8.3
Morocco	6.5	5.6	5.9	3.8	8.6	7.2	7.8	7.9	5.0	6.1	12.2
South Africa	6.6	6.7	6.6	6.6	5.5	6.1	6.8	4.2	4.2	6.5	5.9
Oceania	11.5	11.3	14.0	11.5	12.7	13.6	14.0	10.3	15.3	8.5	13.9
Australia	11.4	10.9	13.7	11.3	12.5	13.4	13.8	10.0	15.1	8.2	13.6
WORLD	11.1	12.4	12.1	11.2	12.4	11.6	12.7	12.2	14.2	13.6	14.8

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-4

IMPORTS OF WHEAT AND WHEAT FLOUR TO DEVELOPED COUNTRIES
AVERAGE 1954/1958; ANNUAL 1959 TO 1968
(Thousand metric tons)

Average	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>Western Europe</u>											
United Kingdom	5,161	4,468	4,711	4,632	4,258	4,605	4,190	4,664	4,176	4,077	4,467
EEC countries	5,336	4,056	6,397	6,622	3,642	4,501	4,041	4,709	4,407	4,719	4,447
Belgium/Luxembourg	517	408	408	485	356	563	426	522	526	572	463
France	656	328	401	360	596	769	709	748	687	317	486
Germany, F.R.	2,739	2,094	2,204	3,515	1,870	1,889	1,484	1,623	1,551	1,547	937
Italy	446	112	2,370	902	276	485	712	1,046	1,031	1,009	1,401
Netherlands	978	1,114	940	1,360	544	795	710	740	611	1,154	1,160
Total	10,497	8,524	11,108	11,314	7,900	9,106	8,231	9,373	8,582	8,666	8,914
<u>Other Northwest Europe</u>											
Austria	224	272	94	73	51	43	46	129	62	17	37
Denmark	248	198	96	91	47	43	36	29	23	18	7
Finland	285	273	117	129	366	98	99	91	54	45	22
Ireland	169	194	239	172	192	206	229	289	260	113	164
Norway	341	325	309	330	402	322	350	390	383	338	345
Sweden	92	102	105	88	188	204	83	85	53	6	24
Switzerland	384	368	312	445	424	331	375	502	385	383	532
Others	65	66	69	63	77	68	97	91	57	63	59
Total	1,808	1,798	1,341	1,391	1,747	1,315	1,315	1,606	1,277	983	1,190
<u>South Europe</u>											
Greece	263	50	60	38	43	42	93	50	10	7	118
Portugal	88	53	238	315	176	211	372	197	594	229	174
Spain	108	59	975	1,206	386	231	87	164	10	3	8
Turkey	182	68	263	1,207	669	417	283	420	236	42	490
Yugoslavia	1,098	490	353	1,068	1,142	687	1,375	1,392	496	288	1
Total	1,739	720	1,889	3,834	2,416	1,588	2,208	2,223	1,346	569	791
TOTAL	14,044	11,042	14,338	16,539	12,063	12,009	11,723	13,202	11,205	10,218	10,895
Japan	2,303	2,566	2,834	2,773	2,663	3,919	3,546	3,553	4,260	4,028	4,349
Oceania	312	280	240	260	260	310	330	290	195	140	117
South Africa	136	286	73	84	241	164	80	162	800	96	--
TOTAL	16,795	14,174	17,485	19,656	15,227	16,402	15,679	17,207	16,460	14,837	15,361

Source: World Grain Trade Statistics, op. cit.

Table A-5

IMPORTS OF WHEAT AND WHEAT FLOUR TO DEVELOPING COUNTRIES; AVERAGE 1954/1958; ANNUAL 1959 TO 1968
(Thousand metric tons)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>North and Central America</u>	826	1,170	827	802	895	934	844	764	801	890	807
<u>South America</u>	2,663	3,280	3,200	3,720	3,710	3,480	4,030	4,117	4,809	5,080	4,939
Brazil	1,634	1,774	2,011	2,283	2,402	1,910	2,292	2,225	2,585	2,538	2,442
Chile	97	179	59	175	177	111	233	320	455	481	409
Peru	302	336	389	425	396	589	360	488	543	546	631
Venezuela	274	321	295	389	307	361	593	559	593	689	733
<u>Africa</u>	1,725	2,994	2,627	4,206	3,349	3,286	3,820	4,488	6,240	5,994	5,188
Algeria	92	706	237	728	190	104	356	430	790	679	721
Morocco	39	80	283	497	225	87	315	361	912	849	148
U.A.R.	742	1,297	994	1,709	1,721	1,909	1,917	1,929	2,498	2,049	2,627
<u>Asia</u>	5,132	8,566	9,353	7,650	9,368	10,024	11,771	13,561	14,391	14,317	9,994
Near East	994	1,812	2,277	1,673	1,461	1,683	1,747	1,840	1,934	1,763	1,508
Far East	4,138	6,754	7,076	5,977	7,907	8,341	10,024	11,721	12,557	13,622	8,486
Ceylon	274	298	314	202	194	270	495	238	748	519	651
India	1,882	3,583	3,826	2,872	3,876	4,276	5,741	7,645	7,495	6,775	3,240
Pakistan	466	890	1,026	1,143	1,555	1,429	1,676	1,051	1,765	2,165	604
Philippines	329	338	285	395	373	447	450	489	491	748	625
TOTAL	10,346	16,010	16,007	16,378	17,322	17,724	20,465	22,930	26,241	26,281	20,928

Table A-6

IMPORTS OF WHEAT AND WHEAT FLOUR TO CENTRALLY PLANNED COUNTRIES; AVERAGE 1954/1958; ANNUAL 1959 TO 1968
(Thousand metric tons)

	Average										
	1954/1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968
<u>Eastern Europe</u>	2,944	4,958	4,817	4,520	4,692	5,999	5,198	5,373	5,051	4,287	3,833
U.S.S.R.	203	60	204	--	--	8,859	2,656	9,187	4,683	1,534	147
Mainland China	25	--	1,960	4,746	4,871	5,198	5,046	6,325	5,124	4,156	3,776
Cuba	198	--	223	388	470	466	466	576	580	726	705
TOTAL	3,370	5,018	7,204	9,654	10,033	20,522	13,866	21,461	15,438	10,703	8,461

Table A-7

CANADA: EXPORTS OF WHEAT BY COUNTRY OF DESTINATION
AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 TO 1968

(Thousand bushels)

	Average 1956/1960	Average 1961/1965	1966	1967	1968
<u>Western Europe</u>					
<u>EEC countries</u>					
Belgium/Luxembourg	12,479	12,626	13,781	9,975	7,562
France	4,150	4,225	1,748	856	4,383
Germany, F.R.	31,772	30,524	22,582	17,547	12,805
Italy	4,321	4,849	9,468	10,151	15,216
Netherlands	<u>11,046</u>	<u>3,794</u>	<u>2,626</u>	<u>5,000</u>	<u>5,887</u>
Total	63,768	56,018	50,205	43,429	45,853
<u>Other Western Europe</u>					
Austria	2,449	1,551	1,573	638	768
Britain	83,111	74,083	67,748	62,060	58,098
Denmark	240	11	22	32	22
Finland	379	1,177	1,053	962	639
Greece	82	--	--	--	58
Ireland	2,678	2,324	1,726	1,427	990
Malta	1,293	1,111	576	572	589
Norway	3,547	1,770	1,548	1,707	588
Portugal	19	82	571	--	37
Sweden	20	61	12	75	81
Switzerland	8,364	6,219	4,890	2,596	5,590
Yugoslavia	--	1,484	--	--	--
Others	--	--	--	--	10
Total	<u>102,182</u>	<u>89,873</u>	<u>79,720</u>	<u>70,069</u>	<u>67,470</u>
<u>Eastern Europe</u>					
Albania	471	3,013	4,221	1,864	--
Bulgaria	--	3,061	3,800	--	--
Czechoslovakia	2,428	13,370	4,202	4,400	--
Germany, East	384	8,221	4,461	--	--
Hungary	--	723	--	2,444	2,940
Poland	5,388	15,088	13,783	5,755	3,414
Rumania	--	1,934	--	--	--
U.S.S.R.	<u>5,930</u>	<u>73,892</u>	<u>93,232</u>	<u>49,031</u>	<u>1,735</u>
Total	14,601	119,302	123,699	63,494	8,089
<u>Africa</u>					
Algeria	75	272	715	819	1,862
Congo	451	5	--	--	37
Ethiopia	--	29	--	--	--
Ghana	--	--	--	265	3,113
Mozambique	87	278	--	--	58
Nigeria	--	600	954	686	--
Northern Rhodesia	211	34	--	--	--
Portuguese Africa	163	--	--	--	74
Republic of South Africa	2,965	2,474	9,435	902	--
Sudan	--	--	36	60	--
Tanzania	--	--	--	299	117
Tunisia	--	38	--	461	692
U.A.R.	--	90	--	--	767
Others	--	--	--	--	1,586
Total	<u>3,952</u>	<u>3,820</u>	<u>11,140</u>	<u>3,492</u>	<u>8,306</u>

continued...

Table A-7 (cont'd.)

	Average 1956/1960	Average 1961/1965	1966	1967	1968
<u>Asia</u>					
Afghanistan	--	--	360	--	7
Burma	125	95	--	--	--
Cyprus	149	--	--	--	1
Hong Kong	272	770	985	915	1,184
India	8,777	7,637	41,961	22,395	15,307
Iraq	494	--	--	44	60
Israel	1,565	1,044	--	--	750
Japan	42,605	48,312	60,239	40,843	43,278
Jordan	--	--	--	13	--
Kuwait	--	70	--	--	--
Lebanon	89	--	28	9	449
Mainland China	7,788	61,220	90,459	52,012	83,062
Malaysia	--	521	576	717	457
Nepal	7	--	--	--	--
North Korea	--	782	940	--	--
Pakistan	2,516	1,289	7,573	876	2,754
Philippines	726	5,388	515	928	3
Saudi Arabia	4	561	92	146	42
South Korea	--	102	--	--	8
Syria	--	--	29	170	2,076
Taiwan	30	282	74	902	1,026
Thailand	--	54	--	--	253
Turkey	--	--	333	124	33
Others	--	--	--	--	1,695
Total	65,147	128,131	204,162	120,094	152,443
<u>Western Hemisphere</u>					
Barbados	1	1	--	--	282
Colombia	198	126	--	--	--
Costa Rica	12	--	139	--	--
Cuba	2	5,394	7,168	5,807	14,223
Dominican Republic	224	841	--	--	2
Ecuador	880	1,160	409	405	528
El Salvador	43	643	629	167	--
Guatemala	91	236	28	4	24
Honduras	10	11	--	--	63
Jamaica	2	8	11	459	1,345
Nicaragua	--	202	250	--	--
Panama	--	16	--	--	2
Peru	2,306	501	39	--	10
Trinidad	--	26	--	--	773
Venezuela	2,017	6,954	4,937	3,139	3,033
United States	4,201	884	155	4	488
Others	--	--	--	--	2,192
Total	9,987	17,002	13,806	10,085	22,945
Oceania	--	--	--	--	46
TOTAL - ALL COUNTRIES	259,635	414,147	482,732	310,663	305,152

Source: Canadian Grain Exports, *op. cit.*

Table A-8

CANADA: PERCENTAGE DISTRIBUTION OF EXPORTS OF WHEAT BY COUNTRY OF DESTINATION
 AVERAGE 1956/1960, 1961/1965; ANNUAL 1966 TO 1968
 (Per cent)

	Average 1956/1960	Average 1961/1965	1966	1967	1968
<u>Western Europe</u>					
<u>EEC countries</u>					
Belgium/Luxembourg	4.81	3.05	2.85	3.18	2.48
France	1.60	1.02	0.36	0.28	1.43
Germany, F.R.	12.24	7.37	4.68	5.64	4.20
Italy	1.66	1.17	1.96	3.27	4.99
Netherlands	<u>4.25</u>	<u>0.92</u>	<u>0.54</u>	<u>1.61</u>	<u>1.93</u>
Total	24.56	13.53	10.40	13.48	15.03
<u>Other Western Europe</u>					
Austria	0.95	0.37	0.33	0.21	0.25
Britain	32.01	17.89	14.09	19.98	19.04
Denmark	0.09	--	--	0.01	0.01
Finland	0.15	0.28	0.22	0.31	0.21
Greece	0.03	--	--	--	0.02
Ireland	1.03	0.56	0.36	0.45	0.33
Malta	0.50	0.27	0.12	0.19	0.19
Norway	1.37	0.43	0.32	0.55	0.19
Portugal	0.01	0.02	0.12	--	0.01
Sweden	0.01	0.01	--	0.02	0.03
Switzerland	3.22	1.50	1.01	0.86	1.83
Yugoslavia	--	0.36	--	--	--
Others	--	--	--	--	--
Total	39.36	21.70	16.51	22.55	22.11
<u>Eastern Europe</u>					
Albania	0.19	0.73	0.87	0.60	--
Bulgaria	--	0.74	0.79	--	--
Czechoslovakia	0.94	3.23	0.87	1.41	--
Germany, East	0.15	1.99	0.92	--	--
Hungary	--	0.17	--	0.79	0.96
Poland	2.08	3.64	2.86	1.85	1.12
Rumania	--	0.47	--	--	--
U.S.S.R.	<u>2.28</u>	<u>17.84</u>	<u>19.31</u>	<u>15.78</u>	<u>0.57</u>
Total	5.62	28.80	25.62	20.44	2.65
<u>Africa</u>					
Algeria	0.03	0.07	0.15	0.26	0.61
Congo	0.17	--	--	--	0.01
Ethiopia	--	0.01	--	--	--
Ghana	--	--	--	0.09	1.02
Mozambique	0.03	0.07	--	--	0.02
Nigeria	--	0.14	0.20	0.22	--
Northern Rhodesia	0.08	0.01	--	--	--
Portuguese Africa	0.06	--	--	--	0.02
Republic of South Africa	1.14	0.60	1.95	0.29	--
Sudan	--	--	--	0.02	--
Tanzania	--	--	--	0.10	0.04
Tunisia	--	0.01	--	0.15	0.23
U.A.R.	--	0.02	--	--	0.25
Others	--	--	--	--	<u>0.52</u>
Total	1.52	0.92	2.31	1.12	2.72

continued...

Table A-8 (cont'd.)

	Average 1956/1960	Average 1961/1965	1966	1967	1968
<u>Asia</u>					
Afghanistan	--	--	0.07	--	--
Burma	0.05	0.02	--	--	--
Cyprus	0.06	--	--	--	--
Hong Kong	0.10	0.19	0.20	0.29	0.39
India	3.38	1.84	8.69	7.21	5.02
Iraq	0.19	--	--	0.01	0.02
Israel	0.60	0.25	--	--	0.25
Japan	16.41	11.67	12.48	13.15	14.18
Kuwait	--	0.02	--	--	--
Lebanon	0.03	--	--	--	0.15
Mainland China	3.00	14.78	18.74	16.74	27.22
Malaysia	--	0.13	0.12	0.23	0.15
North Korea	--	0.19	0.19	--	--
Pakistan	0.97	0.31	1.57	0.28	0.90
Philippines	0.28	1.30	0.11	0.30	--
Saudi Arabia	--	0.14	0.02	0.05	0.01
South Korea	--	0.02	--	--	--
Syria	--	--	--	0.05	0.68
Taiwan	0.01	0.07	0.02	0.29	0.34
Thailand	--	0.01	--	--	0.08
Turkey	--	--	0.07	0.04	0.01
Others	--	--	--	--	0.56
Total	25.09	30.94	42.29	38.66	49.96
<u>Western Hemisphere</u>					
Colombia	0.08	0.03	--	--	--
Costa Rica	--	--	0.03	--	--
Cuba	--	1.30	1.48	1.87	4.66
Dominican Republic	0.09	0.20	--	--	--
Ecuador	0.34	0.28	0.08	0.19	0.17
El Salvador	0.02	0.16	0.13	0.05	--
Guatemala	0.03	0.57	--	--	0.01
Nicaragua	--	0.05	0.05	--	--
Peru	0.89	0.12	0.01	--	--
Trinidad	--	0.01	--	--	0.26
Venezuela	0.78	1.68	1.02	1.01	0.99
United States	1.62	0.21	0.03	--	0.16
Others	--	--	--	--	1.27
Total	3.85	4.10	2.86	3.25	7.52
Oceania	--	--	--	--	0.01
TOTAL - ALL COUNTRIES	100.00	100.00	100.00	100.00	100.00

Source: Canadian Grain Exports, op. cit.

Table A-9

ARGENTINA: EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT) BY COUNTRY OF DESTINATION
1965 TO 1968

(Thousand metric tons)

	1965	1966	1967	1968
Western Europe	1,367	872	532	733
EEC countries	881	600	466	565
United Kingdom	339	216	44	132
Others	147	56	22	36
Eastern Europe	96	4	1	--
U.S.S.R.	2,186	21	--	--
Africa	56	57	19	36
Asia	2,365	321	15	149
Near East	71	10	--	12
Far East	2,294	311	15	137
Mainland China	2,241	306	10	--
Japan	--	--	--	18
Others	53	5	5	119
South America	1,873	1,784	800	1,748
Brazil	1,313	1,253	388	1,194
Chile	71	57	70	114
Colombia	--	43	41	--
Peru	378	365	203	365
Others	111	66	98	75
Unspecified	5	--	--	--
WORLD	7,948	3,059	1,367	2,666

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-10

AUSTRALIA: EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT) BY COUNTRY OF DESTINATION
1965 TO 1968

(Thousand metric tons)

	1965	1966	1967	1968
Western Europe	772	734	907	1,179
EEC countries	10	120	151	240
Norway	19	113	74	118
United Kingdom	675	412	657	768
Others	68	89	25	53
Eastern Europe	12	--	--	--
U.S.S.R.	576	--	--	--
Africa	315	572	229	197
Asia	3,762	5,336	5,381	3,813
Near East	399	646	535	319
Far East	3,363	4,690	4,846	3,494
Ceylon	215	183	202	215
Mainland China	2,017	2,163	2,416	1,396
India	169	427	689	76
Japan	363	431	612	1,171
Malaysia and Singapore	267	465	510	342
Pakistan	55	698	31	--
Philippines	2	3	34	24
Others	275	320	352	270
North and Central America	7	3	2	1
South America	3	178	363	283
Brazil	--	104	100	--
Chile	--	47	171	94
Peru	--	23	83	154
Others	3	4	9	35
Oceania	226	156	129	99
Unspecified	8	5	--	--
WORLD	5,681	6,984	7,011	5,571

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-11

UNITED STATES: EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT) BY COUNTRY OF DESTINATION
1965 TO 1968

(Thousand metric tons)

	1965	1966	1967	1968
Western Europe	4,912	3,087	2,246	2,265
EEC countries	1,948	1,663	1,496	1,923
Switzerland	224	156	73	150
United Kingdom	812	702	277	123
Yugoslavia	1,492	325	285	—
Others	436	241	115	69
Eastern Europe	71	152	41	14
Africa	2,595	3,337	1,400	846
Algeria	314	753	276	262
Morocco	200	586	573	116
Nigeria	136	161	83	150
Tunisia	67	206	285	217
U.A.R.	1,288	921	24	7
Others	590	710	159	94
Asia	13,173	10,231	13,365	8,819
Near East	1,607	936	790	986
Israel	238	223	306	347
Turkey	422	16	39	348
Others	947	697	445	291
Far East	11,566	9,295	12,575	7,833
Ceylon	27	87	147	299
Formosa	303	328	528	371
India	7,136	4,063	5,771	2,317
Japan	1,943	2,135	2,225	1,839
Pakistan	975	1,097	2,079	505
Philippines	435	486	612	513
South Korea	556	816	954	1,504
Others	191	283	259	485
North and Central America	423	434	530	537
South America	2,220	2,710	2,811	2,209
Brazil	882	1,164	1,309	808
Chile	311	325	138	112
Colombia	245	158	140	229
Peru	214	239	260	112
Venezuela	382	483	596	657
Others	186	341	368	291
Unspecified	4	27	99	328 ⁽¹⁾
WORLD	23,398	19,978	20,491	15,018

(1) Includes other products and shipments for relief.

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-12

EEC COUNTRIES: EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT) BY COUNTRY OF DESTINATION
1965 TO 1968

(Thousand metric tons)

	1965	1966	1967	1968
Western Europe	1,205	620	919	1,328
Ireland	54	12	26	107
Norway	61	39	23	69
Portugal	120	62	43	75
Switzerland	272	170	255	209
United Kingdom	545	284	544	849
Others	153	53	28	19
Eastern Europe	2,079	769	301	276
U.S.S.R.	130	133	--	--
Africa	1,319	1,509	1,911	1,973
Algeria	106	33	277	214
Libya	148	167	135	126
Morocco	154	377	154	32
Senegal	125	175	123	155
Sudan	27	55	109	104
U.A.R.	488	408	732	941
Others	271	294	381	401
Asia	509	899	833	967
Near East	172	197	230	332
Far East	337	702	603	635
Ceylon	81	366	120	119
Mainland China	61	73	363	253
Japan	--	--	3	24
Philippines	39	57	59	90
Others	156	206	58	149
North and Central America	136	135	117	122
South America	28	27	204	9
Oceania	25	33	24	12
Unspecified	34	52	41	--
WORLD	5,465	4,177	4,350	4,687
EEC intra-trade	(801)	(570)	(1,260)	(n.a.)

Source: World Wheat Statistics, op. cit.; Review of the World Grains Situation, op. cit.

Table A-13

U.S.S.R.: EXPORTS OF WHEAT AND FLOUR (WHEAT EQUIVALENT) BY COUNTRY OF DESTINATION
AVERAGE 1958/1962; ANNUAL 1963 TO 1968

(Thousand metric tons)

	Average*							
	1958/1962	1963*	1964*	1965*	1966*	1966**	1967**	1968**
<u>Developed countries</u>								
United Kingdom	217	276	--	--	--	--	150	308
EEC countries	386	236	--	--	--	35	255	270
Other Western Europe	403	284	71	5	2	27	91	59
Japan	27	31	--	--	--	--	--	--
Total	1,033	827	71	5	2	62	496	637
<u>Developing countries</u>								
Brazil	164	242	--	--	--	20	52	90
Asia	44	5	9	19	--	121	85	85
Africa	160	91	2	16	23	751	794	1,030
U.A.R.	118	--	--	--	--	536	769	850
Total	368	338	11	35	23	892	931	1,205
<u>Centrally planned countries</u>								
Albania	59	--	--	--	--	--	--	--
Bulgaria	79	150	93	--	--	--	--	--
Czechoslovakia	1,138	1,157	458	511	1,065	880	1,145	1,100
East Germany	1,326	1,069	684	636	971	1,312	1,280	1,200
Hungary	185	63	--	--	--	--	--	--
Poland	529	163	50	--	384	648	940	850
Rumania	59	--	400	--	--	--	--	--
Eastern Europe	3,375	2,602	1,685	1,147	2,420	2,840	3,365	3,150
Cuba	177	564	528	567	627	115	278	340
Mainland China	70	--	--	--	--	--	--	--
North Korea	80	50	--	--	118	217	--	--
Vietnam and Mongolia	73	11	24	68	36	--	14	--
Total	3,775	3,227	2,237	1,782	3,201	3,172	3,657	3,490
Unspecified	33	98	157	211	4	--	--	--
TOTAL	5,209	4,490	2,476	2,033	3,230	4,126	5,084	5,332

* Calendar year.

** Crop year.

Source: 1958 to 1966, calendar year, World Grain Trade Statistics, op. cit.; 1966 and 1967, crop year, World Wheat Statistics, op. cit.; 1968, Review of the World Grains Situation, op. cit.

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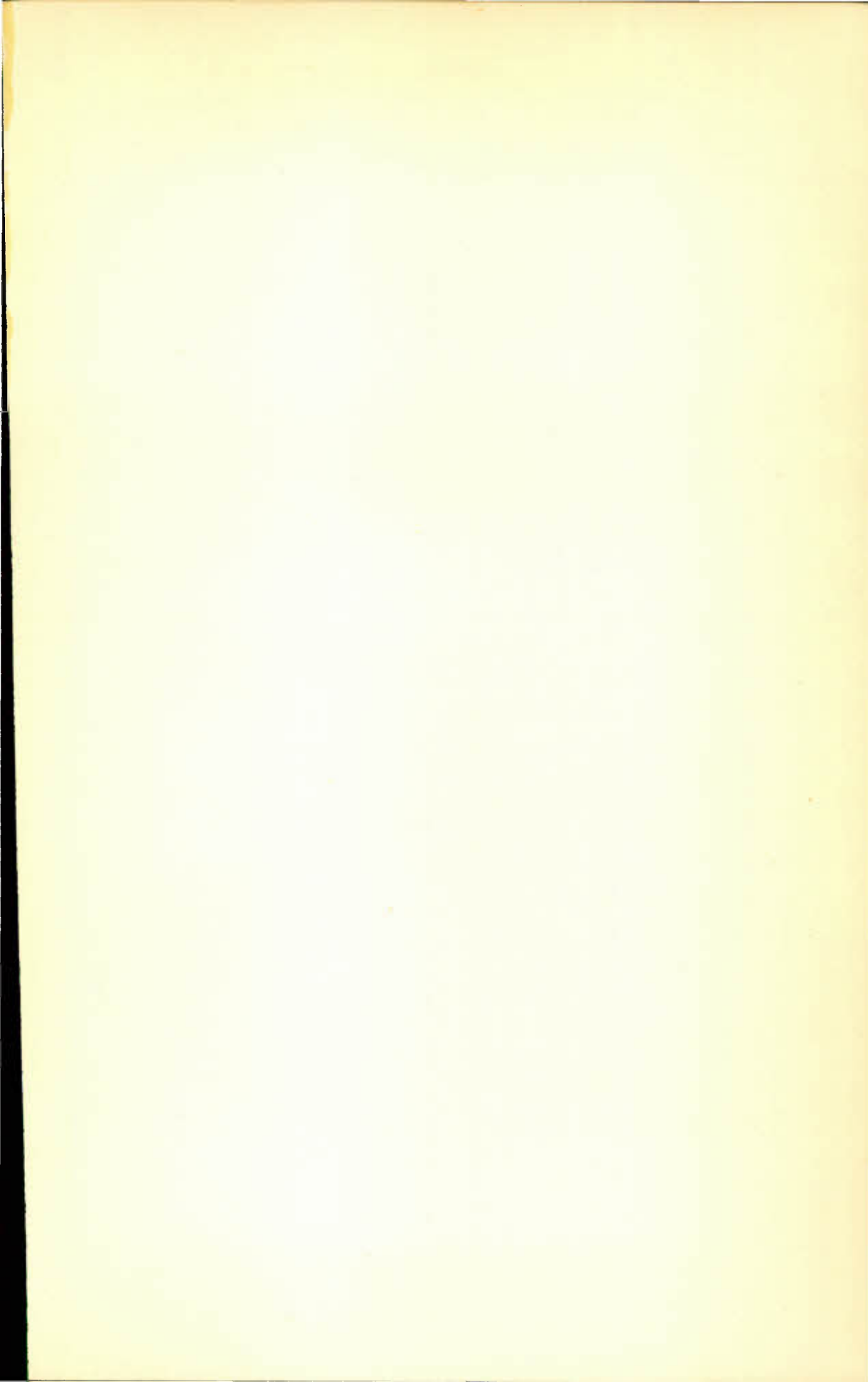
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