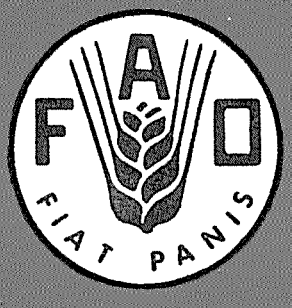
THE STATE OF FOOD AND AGRICULTURE 1956



FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

Rome, 1956

YEARBOOK OF FOOD AND AGRICULTURAL STATISTICS 1955

Volume IX, Part 1 - PRODUCTION

Available now, this volume continues the annual publication by FAO of world agricultural statistics, with a complete listing of data for 1954, the latest revisions of data for prewar and 1953, and, ***for the first time,*** data for the postwar average 1948-52.

Coverage and quality of the statistics presented have been notably improved in this latest issue of the Yearbook. In addition, there are these ***new features*** that contribute to its usefulness:

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- **Replanning** of Food Supply tables, so as to show long-term trends in food consumption by the inclusion of averages for a prewar period, an early postwar period, and a recent postwar period, as well as individual figures for the latest years available.

- New tables on **Tomatoes and pineapples** in the Crops section.

- Addition of **new series** to many of the tables in the section on Prices, with notes to price tables rewritten for inclusion of useful information on the sources of the statistical series and the methods by which annual averages have been calculated.

With its annual presentation of agricultural statistics, this newly published **Part I** of the 1955 Yearbook provides continuing data on land utilization, area, yield, and production of different crops, in addition to information on livestock numbers and products, agricultural requisites, food consumption, index numbers of agricultural production, and prices of all major agricultural products. Entire categories of livestock and their major products are included.

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NOTE

The statistical material in this publication has been prepared from the information available to FAO up to 30 June 1956

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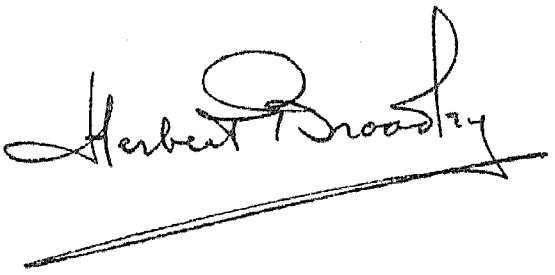
FOREWORD

The world food and agricultural situation has recently tended to change less rapidly than during the years of postwar recovery. It has therefore seemed fitting to modify the form of the annual report on the state of food and agriculture, giving less emphasis to the current situation and short-term outlook and more to longer-term problems and to other special subjects which in the past it has not been possible to treat in detail.

Last year's report consisted of a review of the developments of the whole postwar decade. This year the food and agricultural situation in 1955/56 and the outlook for 1956/57 are reviewed in a single chapter. The two following chapters, the first of the new series of special studies, deal respectively with some factors influencing the development of international trade in agricultural products, and with general trends and outlook in the world's fisheries. The report is introduced by the customary summary.

It is hoped that the report will be found useful in its new form, and that in future years it will be possible to present special studies of a number of the main problems facing the world's agriculture and to cover individual regions and other subjects more thoroughly than was possible in the former type of report.



HERBERT BROADLEY
Acting Director-General

Chapter I - SUMMARY

Chapter II. World Review and Outlook

There was no major change in the world food and agricultural situation in 1955/56. Production continued to increase and was some 3 percent higher than in 1954/55. With demand at high levels, the volume of agricultural trade rose more sharply than in most recent years. Prices of agricultural products generally continued to decline, however, and farm incomes have fallen further in most countries. Total additions to stocks by the end of 1955/56 seem likely to be fairly small, in spite of large increases in stocks of coarse grains and cotton.

Production. Production rose sharply in North America and Oceania, the regions already most troubled by surpluses, but apart from a substantial gain in the Far East, production in the other regions showed little change and in some cases declined. Production of cotton and grains increased from the low levels of 1954/55, and there was a continuation of the tendency for the output of livestock products to increase more rapidly than crop production in the more developed countries. Fisheries production showed little change, but world output of most forest products reached record levels.

In 1955/56 per caput food production in Latin America, Oceania and the Far East was still some 5 to 10 percent less than before the war, though in all other regions and in the world as a whole it was well above the prewar level. It appears, however, that because of changes in the pattern of trade actual per caput supplies of food, allowing for imports and exports, are at approximately the prewar level in Western Europe, Latin America and the Far East, and appreciably above it in the other regions.

There will probably be a further small increase in world agricultural production in 1956/1957. Preliminary estimates indicate that in North America and, in spite of frost damages, in most of Western Europe, harvests will generally again be large unless unfavorable weather conditions occur later in the season. Such indications as there are for the rest of the world also suggest generally larger harvests in 1956/57.

Economic Activity and the Demand for Agricultural Products. 1955/56 saw a continuation of the improved economic conditions which in the preceding year had followed the mild 1953/1954 recession. The boom in the industrialized countries stimulated the demand for agricultural products throughout the world. Consumer demand for foodstuffs and beverages was strong, but demand for fibers and rubber has been affected by reduced output of textiles and, more recently, of automobiles.

The present economic situation seems likely to continue at least during the early part of 1956/57. There may indeed be some decline in economic activity under the influence of anti-inflationary measures, though there are no signs that the present lull in expansion will deteriorate into a recession, while increasing public expenditure and private industrial investment may lead to some further expansion in the latter part of the year. The demand for agricultural products is likely to stay high but not increase appreciably, and the price movements that began early in the second half of 1955/56 are likely to continue into the coming crop year. Broadly speaking, these movements are characterized by a decrease in prices of agricultural raw materials (except perhaps wool) and some strengthening in the prices of foodstuffs.

International Trade in Agricultural Products. The boom conditions in the industrialized countries led to an increase of about 5 percent in

the volume of world trade in agricultural products in 1955, so that it reached the highest level since the war. More than half of the increase was due to larger Western European imports. World trade in agricultural products was still, however, only 5 percent above the 1934-38 level, in contrast to a rise of 70 percent in the volume of world trade as a whole. Because of the continuing fall in prices, the value of agricultural trade increased by only about 1 percent in 1955, but an index of average import unit values suggests that the decline in agricultural prices was coming to a halt in the last quarter of 1955.

A feature of 1955 was large imports of grains and sugar by the U.S.S.R. and the other Eastern European countries, though their imports of livestock products were reduced from the high levels of the previous two years. "East-West" trade now appears to account for some 3 to 4 percent of world trade in agricultural products.

Changes in Stocks. The total addition to stocks by the end of the 1955/56 season appears likely to have been fairly modest. The accumulation of unsold stocks of grains and cotton, largely in North America, has still not been halted, but stocks of certain other products were somewhat reduced.

More vigorous United States surplus disposal measures are likely in the near future. Such measures have, however, so far failed to effect any significant reduction of stocks of the main surplus commodities, and their output is now to be curtailed by means of the "Soil Bank."

Commodity Survey and Outlook. Supplies of grains were again larger in 1955/56. While world trade in *wheat* was at the same level as in the previous season, the share of the four major exporters increased. World trade in *rice* increased in 1955 and the pressure of stocks was lessened, with the main stocks now those of the United States government. Export prices of grains showed some decline, but among the *coarse grains*, barley and maize recovered toward the end of the season. A new International Wheat Agreement was negotiated in April 1956, with a slightly lower guaranteed price range.

Although *sugar* production increased further, consumption also expanded and stocks declined somewhat. The steady rise in consumption has prevented a serious decline in prices.

Production and exports of most *livestock products* increased in 1955, though there was a slight fall in milk output, mainly because of unfavorable weather in Western Europe. Stocks of dairy products were reduced. Increased output of meat should find ready markets in 1956/57.

International trade in *fisheries products* was generally maintained in 1955, though there were some sharp changes for individual products. There was a sharp decline in the canned salmon pack on the West Coast of North America. Fish meal output increased in the United States and Denmark, but fell in some other countries.

Supplies of *fats and oils* were a record in 1955 and even greater supplies are likely in 1956. Prices, however, have been rising and international trade increased in 1955 with strong import demand in Europe and Japan. United States exports were large, and end-of-season stocks are likely to be the lowest for five years.

Production of *fresh fruit* appears to have increased in 1955/56, except for apples and pears. Because of the severe winter, total shipments of citrus fruit from the Mediterranean countries will probably fall in 1956/57. Of the major *dried fruits*, only raisin production increased. Increased *wine* production in the United States, Italy and France was offset by low yields in North Africa.

After the great price rise of 1954 the consumption of *cocoa* fell in 1955. In spite of a lower crop in 1955/56 stocks have increased and prices declined further. *Coffee* production increased sharply in 1955/56 and lower prices stimulated demand. As a result, however, of the recovery of consumption and of news of severe frost damage to the 1956/57 Brazilian crop, prices have recently been firmer than had been anticipated. Although *tea* production increased in 1955/56, exports declined, while prices also fell. The world *tobacco* market remains fairly stable, though United States stocks are higher than ever before.

It is likely that *cotton* stocks, mainly in the United States, will show a further sharp increase by the end of 1955/56. Prices and exports fell during 1955/56. Prices and trade in the coming season will depend mainly on the projected sale of United States stocks at competitive prices. The current *wool* clip is a record, but consumption also is high and markets have remained firm. Prices of *jute* have also been firm, though in the 1956/57 season the supply/demand balance may exert some pressure on

prices. Demand for *hard fibers* was buoyant in 1955/56. The price of natural *rubber* increased sharply during 1955, but declined in the early months of 1956, when some recession in demand was caused by reduced automobile output in the United States and United Kingdom. The increasing supply of lower priced synthetic rubber has also had a strong influence on the market.

Demand for most *forest products* rose in 1955. Output of roundwood was a record and may increase further in 1956 because of the strong demand for pulpwood. European consumption of sawnwood is expected to be maintained, in spite of a temporary slackness in the market at the beginning of 1956. Demand for wood pulp continues very strong.

Prices and the Farmer. Farm incomes appear generally to have declined between 1954 and 1955, or, at best, to have made only very limited gains. The decline in per caput incomes, which has occurred in spite of further reductions in the numbers of people dependent on agriculture, contrasts sharply with the rising trend of incomes generally.

Prices have continued to move against the farmer in most countries, though in Europe prices of livestock products have been maintained. The prices of important input items have risen in nearly all countries. It appears that incomes can be maintained only if the rise in the volume of production is sufficient to offset the adverse price movement.

Prices and the Consumer. Where farm and international prices have fallen there has still been no very pronounced effect on retail food prices, though in some few countries food prices have declined slightly in relation to the general retail price level. Marketing margins appear generally to have increased. In the United States, the only country for which current data are available, the marketing margin for the average family's "market basket" rose by 3 percent between the first quarter of 1955 and the first quarter of 1956, so that its retail cost fell by only 2 percent in spite of a fall of 10 percent in farm prices.

Food Consumption Levels. In contrast with the rapid changes from year to year in the earlier postwar period, levels and patterns of food consumption have now become much more stable. Recent progress in the more advanced countries has been mainly in the quality and variety of the diet. In the less developed regions improvements have shown themselves largely in increased calorie intakes, though in some countries there have been small increases in the consumption of livestock products and fish. Larger production and lower prices have resulted in some shift back from wheat to rice in the importing countries of the Far East.

Agricultural Policy and Development Planning in 1955/56. The continued accumulation of surplus stocks of some commodities has led to revisions of agricultural policies in a number of countries. The most important new departure is in the United States, where, under the new Agricultural Act of 1956, a "Soil Bank" is to be established in order to curtail production. Elsewhere changes have been less radical. In some countries, mainly in Western Europe, there have been changes in emphasis in farm price policies, designed to adjust production more closely to present needs and make their agricultures more competitive. Guaranteed prices have rarely been raised (Argentina is a notable exception) and there has been an increasing trend toward helping farmers to reduce costs by improving the farm structure or subsidizing means of production.

At the same time, however, in the less developed parts of the world a continued rapid expansion of agricultural production is still the chief need and remains the primary aim of national policies. In 1955/56 several of the most important postwar development plans were completed and new plans were prepared or implemented to follow up the progress made in the earlier ones.

General Appraisal and Outlook. The main problems facing the world's agriculture remain broadly the same. The basic dilemma of most governments is how to reconcile their dual responsibilities to maintain the economic position of farmers and at the same time to provide consumers with adequate food supplies at low prices. The deteriorating position of the farm population continues to cause anxiety. In spite of the added urgency caused by surplus stocks, only a beginning has so far been made toward reducing production and marketing costs in order to bring more and better food within the reach of the poorer consumer.

Although some progress has been made in adjusting the production pattern more closely to demand, there is little likelihood of any

significant reductions in surplus stocks during 1956/57. Looking further ahead, much depends on the success of the new United States measures in curtailing output of surplus commodities. The relative stability of the present situation provides a further breathing-space for these and other measures to adjust world agricultural production.

Chapter III. Some Factors Influencing the Growth of International Trade in Agricultural Products

In the first of the special chapters an analysis has been made of the development since 1913 of world trade in each of the main agricultural products and for agricultural products as a whole in the light of newly available statistics of the volume, average unit value (price), and total value of world trade in these commodities.

Terms of Trade for Agricultural Products. It is shown that since World War II there has been an increase of the order of 50 percent, compared with 1934-38, in the purchasing power on world markets of agricultural products as a whole for manufactured goods. Correspondingly the purchasing power of manufactured goods as a whole for agricultural products has fallen by about one third. This change in the "terms of trade," which on the one hand has contributed largely to postwar balance-of-payments problems of agricultural importing countries, and on the other, strengthened the economic position of agricultural exporters, appears primarily to reflect the unusually low prices of agricultural products between the wars, particularly after the depression of 1930. Relative prices of agricultural products since World War II appear to have been about the same as those ruling for the two decades prior to World War I, while earlier still price relations seem to have been even more favorable to agricultural products.

Relations Between International Trade in Agricultural Products and Manufactures. Much of world trade consists of an exchange of manufactured goods against primary products, of which agricultural products form the largest part, and it has been found that there is a fairly constant relationship between the current total value of international trade in agricultural products and in manufactured goods respectively. After World War II, however, the relationship is somewhat less close and appears to have shifted in favor of manufactured goods.

Hence, marked changes in the relative prices of agricultural products and manufactured goods, such as occurred after the two world wars and the depression of 1930, are associated with shifts in the relative volume of these two sectors of world trade. For example, the sharp falls in the relative prices of agricultural products after World War I and the depression of 1930 were accompanied by a proportionate fall in the volume of world trade in manufactures in relation to the level of world economic activity.

After World War II, however, the volume of world trade in manufactures continued more or less unchanged in relation to the level of world economic activity, and the recovery in the purchasing power of agricultural products was reflected in a relatively smaller volume of agricultural trade which persisted even after the emergence of surplus stocks of some agricultural commodities. Some factors which may account for these different re-adjustments are suggested.

Growth of International Trade in Different Agricultural Products. From 1913 until the depression of 1930 the "real value" of international trade in nearly all agricultural commodities increased fairly steadily, though at varying rates, in line with the growth of world economic activity, continuing the comparable development of trade for some decades prior to World War I. The depression, however, brought to an end this rather general expansion, and from then on the various commodities fall into two rather distinct categories.

Thus by 1954-55 world trade in a number of agricultural products, in general commodities such as coffee, rubber, certain forest products, and bananas which are not readily produced in the industrialized countries where they find their main markets, showed increases in real value ranging from 50 to 300 percent compared with the average of the interwar years. This rate of growth is roughly comparable with the expansion of world trade in manufactures which has approximately doubled during the same period. The volume of trade in some of these agricultural products has shown little increase, but in such cases the strength of world demand has been evident in a sharp rise in "real" prices.

At the other extreme, the real value of international trade in a number of other products, all of which can either be readily produced in

the main importing countries or largely replaced by synthetic substitutes, was no greater in 1954-55 than in the interwar period and often substantially less. Most cereals and livestock products, as well as cotton and certain fruits, e.g., apples, fall into this category. The real prices of many of these commodities had declined so that the fall in the real value of international trade was often greater than the fall in the volume of trade.

The wide differences in the course of development of world trade in the main agricultural products during the past two decades thus seem to be largely accounted for by two contrary influences; on the one hand expansionist effects of the growing world economy, and on the other the emergence of a number of factors tending to limit trade in agricultural products, notably postwar efforts in many countries to attain a greater degree of self-sufficiency, and the substitution of synthetic for natural raw materials.

Statistical data on the rate of growth of the volume and real value of world trade of some 40 agricultural, forest and fisheries products, including those falling between the two extremes, are given in the section of this chapter headed "Changes in the Unit Value, Volume and Total Value of Trade for Individual Commodities."

Relationships between the Development of International Trade in Agricultural Products and the Level of World Economic Activity. A fairly close relationship can be established between the "real" value of trade in the first group of commodities, in which trade is expanding, and an index of world manufacturing production which has been taken as an indicator of world demand. There has not yet been time for a detailed analysis of these relationships, but the first results obtained suggest that it should be possible to obtain useful indications of the likely future growth of international demand for these agricultural products on world markets, and to apply in world trade the methods of price analysis and price forecasting which have been found useful on domestic markets.

For commodities in which the increased world demand is met mainly from domestic production, and for which the level of international trade is not expanding, little or no relationship of this kind would be expected. While the long-term trend must evidently be downward, however, the decline often seems to take place in a series of steps. During the intervening years the level of international trade shows a positive response to an increase in industrial production similar in kind to that shown in the first group of products. The shifts to a lower relative level of trade seem often to occur after a period of very high prices or after a change in demand resulting from, e.g., technical developments.

There are as yet no indications of any marked change in the factors governing postwar trends in the development of international trade in agricultural products. Apart from any major policy change (e.g., of surplus disposal), it thus seems unlikely that in the immediate future there will be any major expansion in international trade in the commodities which can be readily produced in the main industrial countries or which are being increasingly replaced by synthetic substitutes. On the other hand, international trade in agricultural products for which an increased demand in the main industrialized countries must be met by larger imports, seems likely to continue to expand in line with the growth of world economic activity, though this does not, of course, mean that their prices may not fall sharply if supplies temporarily outrun demand.

Chapter IV. World Fisheries: General Trends and Outlook, with Examples from Selected Countries

The second of the special chapters in this report discusses world fish production and trade. General trends are illustrated by developments in some of the larger fisheries.

The main characteristics of world fish production and trade are briefly described, including the main centers of production, the consumption and utilization of fish, and the influence of technical developments on the industry.

The broad lines of government policies in relation to the fishery industries, and the changes in these policies since the war, are summarized. More detailed accounts are given of policies and developments in the following countries: Japan, where fish is the main source of animal protein; Norway and Iceland, the two countries where fisheries are of the greatest relative importance in the national economy; the United Kingdom and Germany, fish importing countries with large-scale fisheries of their own; the United States and Canada,

where fishing operations were less dislocated by the war than in most of the other countries under consideration; and the Union of South Africa and South West Africa, where the fisheries have been particularly rapidly developed since the war.

Current development programs and the fisheries outlook are reviewed, firstly in the more advanced economies, where fisheries have been subject to a continuous process of adjustment, and secondly in the underdeveloped economies, where fisheries have been relatively stagnant. For the more developed fisheries, problems of costs and investment, the investigation and management of resources, and problems of domestic and international trade are discussed, and it is concluded that the outlook is for continued steady consolidation, rather than for any immediate or sudden change. For the underdeveloped fisheries, the improvement of production methods, the stimulation of demand and problems of distribution, further investigation of resources, and the influence of external aid programs are considered. The outlook in the underdeveloped fisheries is for more limited local improvements, to be expected especially in the Indo-Pacific area, where fish is of much greater and more clearly recognized importance than elsewhere.

Chapter II - WORLD REVIEW AND OUTLOOK

The steady postwar expansion of the world's agriculture, fisheries and forestry continued in 1955/56. World agricultural production rose by about 3 percent, though once again the increase was rather unevenly distributed. The largest production increases were in the best supplied regions, North America and Oceania, and apart from a substantial gain in the Far East, production in the other regions showed little change.

With demand at high levels in the industrialized countries, the volume of world trade in agricultural products rose by 5 percent, to reach a postwar record. Prices, however, generally continued to decline, so that the increase in the value of agricultural trade was limited to 1 percent. At the farm level also, the general trend of prices has remained downward, while costs of input items have in most cases increased. Thus, except where production increases have been sufficient to offset these factors, farm incomes have further declined, in marked contrast to the incomes of other sectors of the population.

Lower farm and international prices are still reflected only very slightly in retail prices, and there have been only modest improvements in consumption levels. Taking all agricultural products together, however, the total addition to stocks by the end of 1955/56 seems likely to be fairly small. While large increases are expected in stocks of coarse grains and cotton and, to a smaller extent, wheat, the situation for a number of other surplus commodities has eased somewhat. Nevertheless, stocks of grains and cotton remain very large, and with further heavy supplies expected in the coming season, no significant reductions are likely by the end of 1956/57. In the following season, however, the new United States measures to curtail output should begin to affect the level of stocks

PRODUCTION IN 1955/56

The rise in world agricultural production, only slight in the previous season, continued rather more sharply in 1955/56. The main increases

TABLE II-1. INDEX NUMBERS OF VOLUME OF AGRICULTURAL PRODUCTION AND AVERAGE ANNUAL INCREASE IN PRODUCTION IN COMPARISON WITH THE GROWTH OF POPULATION

REGION	Average 1948/49-1952/53	1953/54	1954/55	1955/56 (Preliminary)	Average annual increases 1948/49-1952/53 to 1955/56	
					Production	Population
	Prewar average = 100				*Percentage*	
Western Europe	107	123	124	125	3.0	0.7
North America	138	148	146	153	2.1	1.8
Latin America	121	131	136	138	2.5	2.4
Oceania	113	123	125	132	3.1	2.6
Far East (excluding China)	104	113	115	119	2.8	1.5
Near East	121	143	141	140	3.1	1.6
Africa	128	145	147	145	2.5	1.5
All above regions	117	130	131	134	2.6	1.5
WORLD [1]	110	121	122	126	2.8	...

[1] Including estimates for the U.S.S.R., Eastern Europe and China.

were, however, in those regions already most troubled by the problem of surpluses. Production rose considerably in North America for the first time since 1952/53 and there was also an appreciable rise in Oceania, but in the rest of the world the increases were smaller and in some regions production declined slightly (Table II-1). Thus the long-standing inequalities in production between the well-fed and underfed regions continued in 1955/56, while stocks of some products continued to accumulate.

The rate of increase of world production has slowed down since the earlier years of postwar recovery, but the average increase since the mid-point of the period 1948/49 to 1952/53 is still some 1 percent ahead of the annual increase in world population. The slower rate of increase in the last few years is reflected, however, in the fact that since regaining the prewar level in 1952/53 and then rising above it in 1953/54, world per caput food production (excluding the U.S.S.R., Eastern Europe and China) has hardly changed at about 4 or 5 percent above the average level before the war (Table II-2).

Per Caput Food Supplies

It is important that indices of per caput food production should not be thought of as a reliable indication of changes in the per caput supply of food. For example, much of the increased per caput production in North America is accounted for by larger food exports and by the accumulation of stocks. Conversely, the decline in per caput production in the Far East and Latin America has led to smaller exports and larger imports of foodstuffs.

Tentative estimates of per caput food supplies in each region after allowing for such factors suggest that in both Western Europe and the Far East per caput food supplies during the five years from 1948/49 to 1952/53 averaged some 5 to 10 percent less than in 1934-38. In each subsequent year, however, per caput supplies in these two regions do not appear to have diverged significantly from their prewar level. Per caput food supplies in Latin America appear to have been within 2 to 3 percent of the 1934-38 average throughout the period covered in Table II-2. In each of the other regions shown separately, per caput supplies since 1948/49 seem to have been upwards of 10 percent higher than before the war. In other words, the impact of increased world per caput food production appears to have been felt mainly in North America, Oceania, the Near East and Africa. Needless to add, however, the indices for the two latter and for other underdeveloped regions are rather rough.

These estimates need to be refined, and it would be premature at this stage to publish an index of per caput food supplies. Nor, of course, could such an index, though perhaps useful as a simple indicator of trends, replace the more precise estimates of food consumption levels given later in this chapter. For example, a rise in the index of per caput food supplies may reflect an increase in the calorie level, but equally it may reflect a swing toward more expensive kinds of food which demand greater agricultural resources for their production, as has happened in North America. This type of information can only be obtained from detailed food balance sheets or from dietary surveys.

TABLE II-2. INDEX NUMBERS OF VOLUME OF TOTAL AND PER CAPUT FOOD PRODUCTION

REGION	Total Food Production				Per Caput Food Production			
	Average 1948/49 - 1952/53	1953/54	1954/55	1955/56 (Preliminary)	Average 1948/49 - 1952/53	1953/54	1954/55	1955/56 (Preliminary)
	Prewar average = 100							
Western Europe	107	123	124	125	97	109	109	109
North America	141	152	150	158	118	120	117	121
Latin America	125	135	141	142	93	93	95	94
Oceania	112	121	121	127	93	93	91	93
Far East (excluding China)	104	115	116	119	86	91	91	92
Near East	120	144	141	139	99	113	109	106
Africa	125	141	143	140	103	110	110	106
All above regions	118	132	132	135	99	105	104	105
WORLD [1]	110	122	123	126	96	103	102	104

[1] Including estimates for the U.S.S.R., Eastern Europe and China.

Regional Developments

There was a rapid increase in production in 1955/56 in *North America*, despite continued restrictions in the United States on the production of several major commodities. The region's production had declined in the previous season, largely because of the effect of bad weather and rust on the Canadian wheat crop, but in 1955/56 it rose for the first time since 1952/53 and was at a record level. In Canada the wheat harvest, from an area 1 million hectares smaller than in 1954/55, was the fourth largest in history; marketings of livestock were large, and production of fruit and vegetables increased. United States output reached a new record, the acreage restrictions on certain crops being more than offset by record yields per acre, by the transfer of land to uncontrolled small feed grains and oilseeds and by a continued increase in livestock marketing (see Annex Tables for details of production in the different regions).

In *Oceania* also, production increased sharply. Australian wheat production, after the poor harvest of 1954/55, recovered to approximately the average postwar level, with a yield per acre considerably above the average. Livestock products continued to increase steadily and the region's output of meat, butter and wool was at record levels in 1955/56.

Production in *Western Europe*, where the rate of expansion had been very rapid in the earlier postwar years showed only a small further increase in both 1954/55 and 1955/56. In 1955/56 grain harvests were generally good, including large wheat crops in France and Italy. Production of potatoes fell, mainly because of a further reduction in the United Kingdom, where there was a shortage at the end of the season. Olive oil production was the lowest since 1952/1953. Output of livestock products, especially pigmeat, increased substantially in this region also, but there has been some slowing down in the rate of expansion as compared with most recent years. The very severe winter of 1955/56 caused much damage, especially in France, Italy and Spain. Vegetable crops and also stored vegetables were badly affected and prices rose steeply; oranges that had not been harvested before the cold spell were lost, the losses amounting to about one half of the crop in Spain; and pasture growth was reduced. The worst effects of the cold weather, however, for some tree and cereal crops, will probably have been on the harvest in the summer and autumn of 1956, (i.e., the 1956/57 crop year).

In *Eastern Europe* grain yields appear generally to have been good, and in some countries pig numbers increased considerably in 1955/56. It seems, however, that agricultural production in some countries in this region is still below the prewar level, or not much higher. The U.S.S.R. grain harvest is reported as more than 20 percent greater than in 1954/55, chiefly because of a large increase in crop area, especially that of maize. Grain production was nevertheless well below the planned target because of drought in the newly planted region. The U.S.S.R. sugar beet area was also greatly increased in 1955/56 and production rose even more steeply than for grains. Harvests of cotton and potatoes were poor, however, potato production being 20 percent less than in 1950 in spite of a 7 percent rise in acreage, and progress on the livestock side continued to be slow.

Agricultural production in the *Far East* showed an acceleration of the steady increase which has taken place in every year since the war. It is satisfactory to record that the increase in total agricultural production has remained well ahead of the increase in population, even holding the exceptional gain of five points made between 1952/53 and 1953/54, due to a very favorable monsoon. Nevertheless the setbacks of the war years have not yet been made good on a per caput basis. Figures of production and population are particularly unreliable in many parts of this region but it appears that per caput food production in the region as a whole (excluding China) in the last few years has remained virtually unchanged at about 10 percent less than the prewar level. For 1955/56, production of food grains is estimated to be rather larger than in the previous season. Poor crops in Indonesia and parts of Pakistan and Ceylon were offset by large rice crops in other countries, including a postwar record in Japan, where free market prices fell even below government prices. The Philippines sugar crop was smaller but production increased in Indonesia and Taiwan. Larger tea output in India and Ceylon more than counterbalanced deficiencies due to drought in Indonesia and Taiwan. Among the industrial crops, jute production is likely to have been the largest ever, but cotton production in India and Pakistan was affected by bad weather.

For mainland China 1955/56 appears to have been the most favorable season for agricultural

production since 1949/50. It is reported that production targets were achieved and in the case of cotton, greatly exceeded. Improved yields of food grains are attributed not only to favorable weather but also to the extension of irrigation and flood control and the distribution of improved seed.

In *Latin America* present indications are that in 1955/56 total production and food production were slightly above the level of the preceding year. There was an increase in production in most countries of the region, but in Argentina grain output, except for maize, fell sharply, mainly because of unfavorable weather, so that the region's total output of food crops did not show a great increase. This was to some extent counteracted, however, by an increase in the region's livestock production and some non-food products. The production of beef increased rather more than in most recent years, and coffee production exceeded the average 1934-38 level for the first time since the war.

Production in the *Near East*, after increasing rapidly, has now remained at approximately the same level for three seasons, even showing a slight declining trend. In 1955/56 grain output increased slightly, with larger wheat and barley crops in Turkey and Iran, but was below the peak level of 1953/54 because of poor crops in Iraq, Jordan and Syria, and lower rice production in most of the region. The cotton area continued to expand, especially in Egypt, where reduced support prices for wheat and the easing of acreage restrictions caused some transfer to cotton, and in Syria. These increases were offset by reductions in the region's output of a number of minor crops, including pulses, olive oil, dates and coffee.

The failure of production to expand in *Africa*, where the increase had been very rapid up to 1953/54, was largely the result of poor harvests in North Africa. Production of grains, wine and olive oil in that area was very low, and some early vegetables were affected by the severe winter. In the rest of the region production was generally maintained or increased in 1955/56. The Union of South Africa appears likely to have had another record year, with record production of a number of commodities, including wheat, and a maize crop which, although substantially below the last three seasons, is still well above the 1948-52 average level. In the region as a whole production of sugar, citrus fruit and coffee has continued its steady expansion, and groundnut production appears to have been almost as large as in 1953/54, but the output of rice fell. The Gold Coast and Nigeria had their best cocoa crops for some years.

Pattern of Production

There were no very substantial changes in the commodity pattern of world production during 1955/56 (Figure II-1 and Annex Table 1). The main features of the year's production were increased harvests of grains and cotton after the lower levels of 1954/55, and a continuation of the tendency for livestock products to increase more rapidly than crop production in most of the more developed countries.

Grain harvests were generally good in 1955/56. Canada and Australia had large wheat crops after their poor harvests in the previous season, so that world production resumed its rising trend in spite of poor crops in Argentina and French North Africa. Most other crops showed a small increase in 1955/56, though production of a few commodities declined, including potatoes (largely because of further reduction in some Western

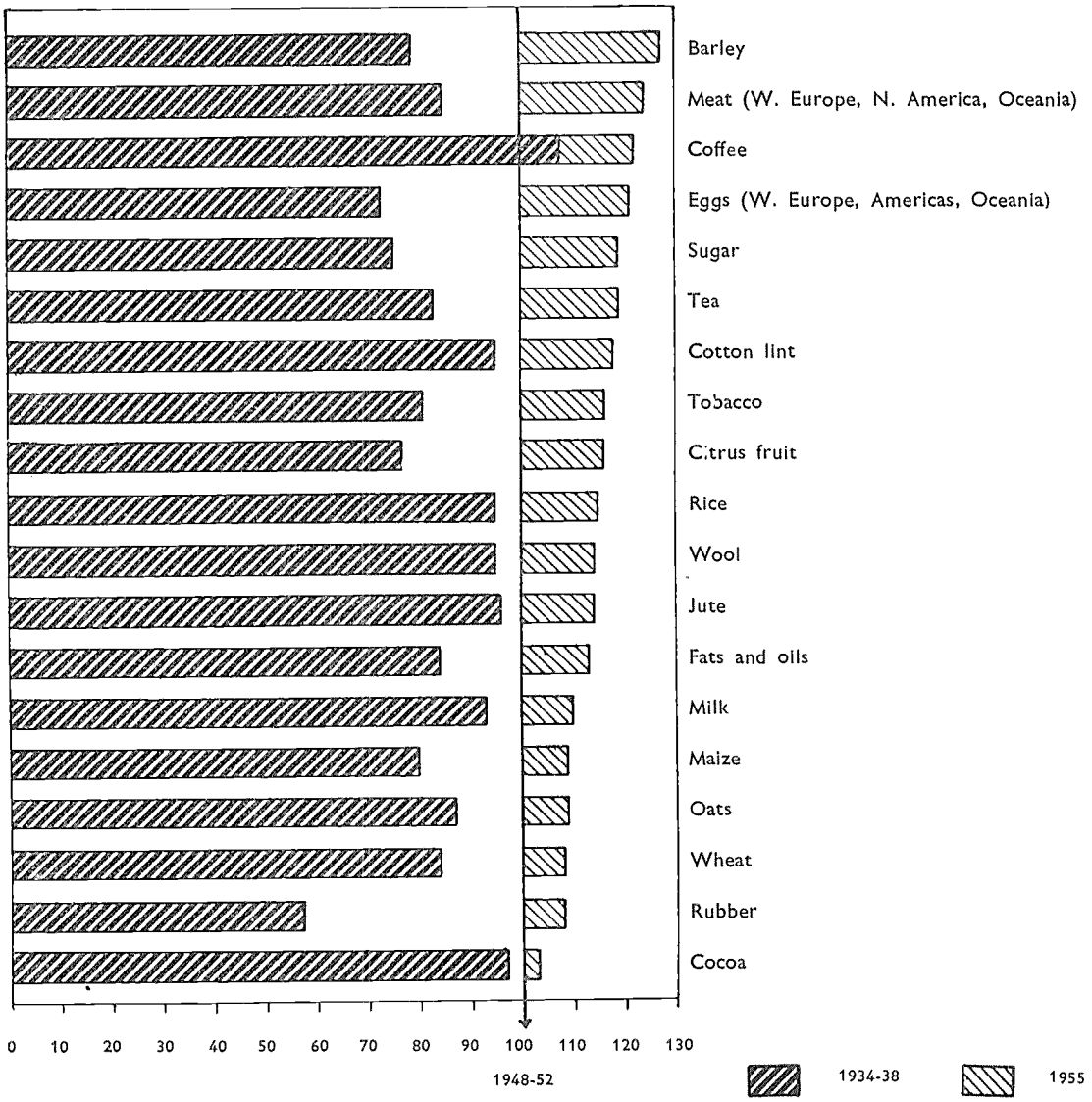
TABLE II-3. INDEX NUMBERS OF CROP AND LIVESTOCK PRODUCTION IN CERTAIN REGIONS

REGION	Gross Crop Production[1]					Livestock Production[2]				
	1951/1952	1952/1953	1953/1954	1954/1955	1955/1956 (Preliminary)	1951/1952	1952/1953	1953/1954	1954/1955	1955/1956 (Preliminary)
	1948/49 - 1952/53 average = 100									
Western Europe	105	103	114	112	111	106	110	117	121	123
North America[3]	98	106	104	96	102	102	105	109	112	115
Oceania[3]	90	106	113	102	112	96	107	106	112	117

[1]Including feed and seed.
[2]Including wool.
[3]Livestock figures are for calendar year.

FIGURE II-1. Indices of Estimated World Output of Major Commodities

(World, excluding U.S.S.R., Eastern Europe and China ; Average 1948-52 = 100)



European countries), olive oil and cocoa. The increase in coffee production was substantially greater than in most recent years. Fiber production also swung sharply upwards. There was a big increase in jute production, and output of cotton recovered from the rather low 1954/55 level to a new record.

Livestock products, except for liquid milk, continued to increase in 1955/56. In the more developed regions livestock products have in the last few years been making rather more rapid gains than crop production (Table II-3). This tendency has been particularly marked in Western Europe, where gross crop production has been slowly falling since 1953/54. The increase in livestock products was, however, less in 1955/56 than in earlier years, liquid milk production declining in some European countries because of bad weather.

Gross crop production in North America has declined since the record season of 1952/53, although there was some recovery in 1955/56. The acreage restrictions in the United States have contributed to this decline, but the sharp fall in 1954/55 was caused mainly by the poor Canadian wheat crop. In contrast, livestock prod-

TABLE II-4. ESTIMATED PRECENTAGE OF LIVESTOCK PRODUCTS [1] IN TOTAL AGRICULTURAL OUTPUT

REGION	Prewar average	Average 1948/49-1952/53	Average 1953/54-1955/56
Oceania	85	84	84
Western Europe	71	65	68
North America	60	57	60
Latin America	43	43	41
Near East	35	33	30
Africa	27	25	25
Far East (excluding China)	17	17	17
All above regions	47	45	46

NOTE: These estimates are based on price-weighted aggregates.
[1] Including wool.

ucts have shown a steady increase every year during this same period. In Oceania, livestock products have continued to increase fairly rapidly. Crop production has fluctuated rather more and is now just below the 1953/54 peak.

In the three more developed regions, livestock products make up a large proportion of the total value of agricultural output, although in Europe the prewar proportion has not yet been completely regained. On the other hand, livestock products occupy a much smaller place in the agricultures of the less developed regions, which contrasts with the increased consumption necessary to improve the quality of diets (Table II-4). In the underdeveloped regions statistics of livestock products are generally inadequate to give any reliable indication of year to year changes in production.

Fisheries Production

In 1955 production in most countries was close to the levels of 1952-54. There were a few instances of increased output and rather more of moderate declines. These were due mainly to factors outside the control of the industry such as lesser abundance of fish on the grounds or unfavorable weather, and not to any reduction of fishery activities (Annex Table 12).

Forestry Production

Forest products have continued their steady expansion in response to strong demand, and world production of most of the principal categories reached new record levels in 1955. North America and the U.S.S.R. each accounted for about one third of the increase in world production of industrial roundwood. World production of wood pulp rose by as much as 10 percent, reflecting increased capacity for newsprint and paper and board manufacture. In North America a large increase in the production of sawn softwood was stimulated by the building boom in the summer of 1955 and production of most other forest products also rose very sharply. The region's production of sawn hardwood fell, however, so that the increased output of this commodity in the rest of the world was largely offset (see Annex Tables).

The Production Outlook for 1956/57

There will probably be a further small increase in world agricultural production in 1956/57. Preliminary estimates for the Northern Hemisphere indicate that harvests will generally again be large unless unfavorable weather conditions occur later in the season.

North American agricultural production should be near the record level of 1955/56. In the United States, the total acreage planted to crops appears to be slightly smaller, but output of most livestock products is running ahead of last year. Wheat production, on an unchanged acreage, is expected to be only very slightly below last year's crop, and the acreage planted to feed grains is smaller; production of rice, tobacco and cotton may be reduced because of smaller acreage allotments and the probability that yields will not reach last year's records. In Canada a slightly reduced acreage and less favorable soil moisture conditions point to a small reduction in the wheat crop, but coarse grain acreages appear to be somewhat increased.

Good harvests are expected in most of Western Europe, in spite of the severe winter. In some individual countries, however, the effects of the cold weather will be considerable, especially in France and perhaps Spain. The olive crop is expected to be severely effected, also vines, almonds and some tree fruits such as apricots and early peaches. The hard winter also retarded the growth of pasture, which may reduce livestock production during 1956. Damage to winter cereals appears to have been greatest in France, where the wheat harvest will be much smaller than normal, as the crop of some 1 to 2 million ha. is estimated to have been destroyed and much damage done on the remaining

area. It is expected, however, that with the help of stocks the wheat crop will be sufficient for domestic requirements, though export sales had to be snspended. Part of the winter wheat area was re-seeded with barley; there may therefore be either a surplus of barley for export, or a reduction of maize imports. In the U.S.S.R. spring sowings are reported to have been delayed by the bad weather, and this may be particularly important in the case of sugar beet. Grain production seems likely to be reduced in some countries of Southeast Europe.

Few precise indications are yet available for the rest of the world. Such indications as there are suggest generally larger harvests in 1956/57, but present expectations may of course be falsified by the weather. In Oceania, so far as economic conditions are concerned, farmers' intentions appear to be to continue the rising trend of production, and livestock products in particular should continue to increase steadily. In Latin America production should begin to rise again, though in Brazil the coffee crop is reported to have been severely damaged by frost. An increase in Argentina's agricultural output is anticipated as a result of the greater economic incentives to farmers provided under the new policy in that country, and in Chile also the progress that has been achieved under the development plan should result in increased output in 1956/57, after several years of stagnation. In the Near East moisture conditions for winter cereals are reported to have been good in most countries except Turkey. African agricultural production should resume its rising trend in 1956/57. Better grain harvests are expected this year in French North Africa and the Union of South Africa's steady expansion of output should continue.

ECONOMIC ACTIVITY AND THE DEMAND FOR AGRICULTURAL PRODUCTS

The 1955/56 crop year saw a continuation of the improved economic conditions which in the preceding year had followed the mild 1953/54 recession. New heights in economic activity were reached and the boom conditions in the industrialized countries stimulated the demand for agricultural products throughout the world.

In the *United States*, industrial production rose sharply to a record height in October 1955 and remained almost unchanged at this high level during the rest of 1955/56. This stability, however, concealed contrary movements in various industries, an expansion in, e.g., metals and chemicals offsetting a decline in production in automobiles and related industries, agricultural machinery and electrical appliances. Similarly the expected decrease in new private home construction was partly alleviated by greater public and private commercial building. Personal income has been little affected by the appearance of a few weak spots in the economic picture, and personal consumption expenditures have continued to rise, though at a slower rate. With government expenditures increasing chiefly on the side of State and local authorities, and with a great expansion in both industrial plant and inventories in spite of tighter credit, the gross national product in 1955/56 was about 7 percent above the preceding fiscal year. Domestic demand for agricultural products has remained high and exports of agricultural products increas ed by about 10 percent, mainly because of greater efforts in surplus disposals. Agriculture, however, remained a weak spot in the national economy.

The economic boom was even greater in *Canada*. Industrial production rose throughout 1955/56, though it slowed down in the latter part of the year, as virtually full employment was reached and bottlenecks in the supply of materials became more frequent. Real incomes increased, and so also did consumer's expenditures. Prices remained stable with the help of greatly expanded imports. Domestic investment was higher although inventory accumulation was less pronounced than in the U.S.A. As in the United States, however, the farm sector did not share in the general economic gains.

In *Oceania* domestic demand for agricultural products increased slightly and a somewhat higher export volume compensated for lower prices on international markets. Favorable crop conditions assured ample supplies for both the home and foreign markets, notably a 10 percent bigger output of wool, and the increased foreign demand for butter permitted larger exports. Nevertheless the unfavorable balance of trade persisted in the first half of 1955/56 and import restrictions had to be maintained while, in Australia, because of excessive domestic demand, credit was tightened and consumption taxes increased.

After an expansion even faster than in North America a high plateau has established itself

in the industrialized countries of *Western Europe*, and the growth of industrial production has slowed down as the expanding economies are reaching the limits of available resources in many sectors, particularly manpower. Import restrictions and other measures limiting consumers' demand in some of the main markets outside Europe have, however, led to difficulties in some industries (automobiles), while other industries, especially textiles, have been affected by growing competition from exporters in other continents. The high demand for imports has created balance-of-payments difficulties, particularly in the Scandinavian countries and the United Kingdom. In order to restrain domestic consumers' demand, and to combat the inflationary trend connected with over-full employment, most Western European governments have tried to limit demand by restricting commercial credit, raising interest rates, making conditions for installment buying more severe, increasing purchase taxes, and reducing public expenditures. But the continued expansion of industrial investment has to a great extent offset the effects of limiting consumer demand. Measures to put brakes on the boom have not yet caused signs of a genuine deflation; while they were fairly effective in the Scandinavian countries, still stronger measures had to be adopted by the United Kingdom in early 1956. In the other Western European countries the pressure of full employment is only in its early stages. Under the impact of the boom, domestic demand for agricultural products in Western Europe was buoyant, but due to the good harvest of 1955, import requirements of grains were reduced.

The picture for the economically more advanced parts of the world is thus more or less similar. The rapid expansion of 1955 has overstrained existing productive facilities and necessitated governmental action to damp down the boom. These measures and a declining demand for durable consumer goods, reinforced by some reduction of exports, have slowed down and sometimes stopped further expansion of economic activity. This remains, however, on a very high level. Consumer demand for foodstuffs and beverages is strong, but the demand for fibers and rubber has been affected by the declining output of textiles, and more recently of automobiles.

The big advances in the industrialized countries had favorable repercussions on some raw material exporting areas among the more underdeveloped countries, particularly those exporting crude oil and nonferrous metals and, until recently, also rubber. At the same time, however, exporters of fibers, tropical products, rice and grains found their markets under pressure.

In *Latin America* the old difficulties in foreign payments, insufficient investment capital and inflation persisted throughout 1955/56. The high rate of population increase, rising incomes and continuing industrialization, though at a considerably reduced pace, accounted for the higher value of imports in spite of slightly lower import prices, while much greater declines in export prices more than offset minor increases in the volume of exports. The need to expand exports as well as to restrict imports has strengthened a move away from programs of rapid industrialization toward greater emphasis on agricultural development. But although agricultural output has risen by some 14 percent over the last five years, on a per caput level it is still some 5 percent below the prewar level. Some success in liberalizing foreign trade has been achieved in Brazil, through a multilateral trade and payments system with a group of European countries, and exchange reforms have been carried out in Argentina, Chile, Colombia, Paraguay and Uruguay. Domestic demand for agricultural products is being maintained within the limits of the relatively low purchasing power; the chances of achieving the required higher export values are impaired by the growing competition on international markets, and by the pause in economic expansion of Latin America's most important foreign markets.

While industrial production continued to rise, though at a somewhat slower rate, in the countries of the *Far East*, per caput agricultural production remains below prewar levels. This is reflected in the declining share of the region in world agricultural exports, and in this region, too, many countries (India is a notable exception) are shifting the emphasis in their long-term development programs toward agriculture. In the meantime a favorable crop has enabled India to scale down further its food imports and to devote more of the scarce foreign exchange to the import of machinery and industrial raw materials, while, as noted elsewhere, the second Indian Five Year Plan proposes a considerably faster industrialization. Better prices and a slightly higher volume of exports after the devaluation of the currency have somewhat improved the balance of trade of Pakistan. Japan is profiting in 1956 from greatly expanded ex-

ports and the good rice harvest in the preceding autumn. The surplus difficulties of the major rice exporting countries have been eased somewhat as price reductions enabled accumulated stocks to be cleared. Ceylon has had a prosperous year and Malaya, Indonesia and other rubber exporters benefited from improved export earnings, though the recent fall in rubber markets promises less well for next year.

Large and continuing development expenditures, and the improved foreign trade position, stimulated the domestic demand for agricultural products in the Far East region, although per caput consumption is still, of course, very inadequate. In spite of some improvement in mobilizing domestic capital resources, as well as of considerable reliance on deficit financing, foreign aid is still very necessary even to maintain the rate of expansion, generally far from satisfactory.

In the *Near East* the high level of consumer demand and of investment accounts for the continuance of inflationary pressures in Turkey. The government is trying to restrain this by a program for economic stabilization ; but so far the extensive subsidies for agricultural products, a major source of the inflated volume of money, have not been reduced. The slight improvement in grain exports had to be used to settle commercial arrears. The uncertainty on the international cotton markets compelled Egypt to reduce imports through taxes and quantitative restrictions, while exports, particularly of cotton, are being stimulated by various means. Increased purchases by India, the Soviet Union and China are partly responsible for maintaining the level of cotton exports. In the mineral-oil producing countries output and revenue continued to increase, thereby providing the means for further expanding long-term development programs. Domestic demand increased, but still remains at a relatively low level. Surplus stocks of cotton and dates still cause anxiety.

Economic activity continued to expand in *Africa* under the impact of steadily progressing development programs, favorable returns from mining, and the generally satisfactory output and larger exports of agricultural products. Inflationary pressure in South Africa led to a tightening of the money market and to the introduction of controls to prevent investment funds from being attracted away by the higher interest rates in the United Kingdom. Throughout Africa domestic demand continues to increase slowly with the growth of population and some improvements in real incomes.

The underdeveloped areas of the world have thus to a limited extent profited from the boom in the industrialized countries. Most of them were able to improve their balance-of-payments situation, to increase monetary reserves and to reduce quantitative and other restrictions in foreign trade. Except for some Latin-American countries, and some in the Far East where political unrest is retarding economic consolidation, inflationary pressures have lessened and prices have been stabilized. With ample supplies of foodstuffs and fibers at lower prices, and with slowly rising incomes, domestic demand remained high, though still quite insufficient from a social point of view. Export demand also increased, though most strongly for raw materials of non-agricultural origin.

Short-Term Outlook

The current economic situation, in which the boom has been damped down by government action, by shortages of manpower and other resources, and by a falling demand for consumer durables, seems likely to continue at least during the early part of 1956/57. It is indeed possible that there will be some actual decline in economic activity from the high "plateau" which has been maintained in many industrialized countries in the latter part of 1955/56, and a further slowing down of development in those where the economy was still expanding at that time.

The high rate of private industrial investment and its rising trend, as well as increasing public expenditures, however, are likely to offset any slow-down in housing, or inventory liquidation, and there may thus be some improvement in the latter part of the year. Whether such improvement will be big enough not only to stop the existing slight downtrend, but also to initiate a new upward movement remains to be seen. There are, however, no signs that the present lull in economic expansion will deteriorate into a recession or a self-perpetuating rapid decline.

The demand for agricultural products in the industrialized countries is therefore likely to stay high but not to increase appreciably. For products which are already encountering marketing difficulties no improvement seems likely in the year ahead. The high but probably

stationary demand will continue to be faced by a world supply, which for many products is much in excess of requirements, though largely under government control.

A somewhat reduced production of grains, vegetable oils and citrus fruit in Europe as a result of the severe winter of 1955/56, should lead to some increase in outlets for the exporting countries. But competition on international markets is likely to increase and there is little chance of any appreciable recovery of prices. On the other hand few further serious declines seem likely, except perhaps for cotton where an intensification of surplus disposal might further depress the market.

The outlook for the demand for agricultural products in the underdeveloped countries is, of course, partly dependent on economic developments in the industrialized part of the world. A high level of economic activity in the industrialized countries will not only be reflected in a larger demand for primary products from the less developed countries; it may also be expected to stimulate domestic employment and rising incomes in underdeveloped countries themselves.

While such a high level of activity is likely in 1956/57, raw material and food exporting countries are affected not only by the level but also by the trend of economic activity in the developed countries. Even a protracted pause in their economic progress is likely to affect unfavorably both the volume and values of exports, particularly of raw materials, from the less developed countries.

It may be, therefore, that the price movements which began toward the end of 1955/56 will continue into 1956/57. These movements are characterized by a decrease of prices for raw materials, including those of agricultural origin (except perhaps wool), and some strengthening of prices of foodstuffs. This is the reverse of the situation prevailing during the last two crop years. It seems to stem, on the one hand from some decline in the demand for such raw materials as rubber and most fibers together with the expected inventory reduction and, on the other hand, from the likely effects of the decision not to lower support prices in the United States aided by some strengthening of export demand.

Although the demand for agricultural products is likely to remain at a high level, the pause in world economic development may thus make 1956/57 a somewhat less favorable year than 1955/56 for agriculture. But it may be repeated that there is no indication that the present standstill will deteriorate into a recession. The underlying expansive forces — population growth, high rate of investment, full employment policies, international aid for the development of underdeveloped areas — continue to operate unabated, so that it is likely that the pause will be of a relatively short duration.

INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

Largely under the influence of the strong demand in industrialized countries, the volume of world trade in agricultural products increased sharply in 1955 and was some 5 percent greater than in the preceding year, or than the average of the prewar years 1934-38. This was the highest point yet reached since the war, though it remains some 10 percent less than the volume of world trade in the late nineteen twenties.

By contrast the volume of world trade as a whole in 1955 was more than 70 percent greater than in 1934-38, and more than 50 percent greater than in 1929. Some of the reasons for these discrepancies are considered later in Chapter III. From 1954 to 1955, however, the expansion in the volume of world trade as a whole was no greater than the growth of trade in agricultural products.

All commodity groups except the natural fibers and rubber shared in the general increase in trade, though the largest gains, of the order of 10 percent, occurred in fruits and livestock products. The rapid expansion of trade in forest products continued, with an increase of more than 10 percent over the volume of trade in 1954 (Table II-5).

About 60 percent of the increased volume of agricultural trade over 1954 was due to increased imports into Western Europe (of which increased intra-regional trade accounted for about one third), and just over 30 percent to increased imports into North America. Despite this marked recovery of North American agricultural imports from the low volume in 1954, however, their level in 1955 was lower than in any previous year since 1948. The balance of the increase in world trade was made up by somewhat larger food imports into the Near East, Africa and Oceania.

TABLE II-5. VOLUME OF WORLD TRADE IN AGRICULTURAL PRODUCTS

PRODUCT	1934-38	1947	1948	1949	1950	1951	1952	1953	1954	1955[1]
	Indices 1952-53 = 100									
Cereals	104	76	85	89	81	105	104	97	89	96
Sugar	72	72	84	85	91	91	92	108	92	98
Oilseeds and vegetable oils	127	69	78	95	108	115	97	103	121	125
Fruits, fresh and dried	88	68	80	82	87	90	95	105	109	118
Livestock products	110	86	87	92	107	102	95	105	109	119
All food and feeding stuffs	104	76	84	89	92	102	99	102	100	108
Beverages and tobacco	87	83	89	99	93	98	97	104	99	105
Natural fibers and rubber	102	85	89	95	111	98	99	101	101	101
All agricultural products	100	80	86	93	98	100	98	102	100	105
Forest products[2]	92	77	76	78	94	108	98	102	117	129
Total world trade (agricultural and non-agricultural)[3]	66	70	72	78	88	98	97	103	108	[4]113

[1] Preliminary.
[2] Not included in general index for all agricultural products.
[3] UN index of world exports adjusted to 1952-53 base; comparable League of Nations estimates included for years 1934-36.
[4] Average of first three quarters.

TABLE II-6. VOLUME OF WORLD TRADE IN AGRICULTURAL PRODUCTS BY REGIONS

REGION	1934-38	1947	1948	1949	1950	1951	1952	1953	1954	1955
	Indices 1952-53 = 100									
Western Europe										
Gross export	109	47	57	73	92	94	97	103	114	124
Gross import	115	80	85	96	99	99	95	105	105	111
Net import	117	90	94	103	101	100	95	105	102	108
North America										
Gross export	64	98	87	109	96	114	108	92	87	88
Gross import	79	90	101	98	105	101	102	98	82	91
Net import	172	43	187	30	156	23	61	139	49	108
Latin America										
Gross export	100	107	110	100	99	95	91	109	98	98
Gross import	63	95	98	82	97	103	97	103	100	99
Net export	108	109	112	103	100	94	90	110	98	98
Oceania										
Gross export	76	85	99	103	100	86	98	102	94	105
Gross import	65	89	99	86	100	112	95	105	123	132
Net export	77	84	100	104	100	84	98	102	92	103
Far East (excluding China)										
Gross export	156	65	81	84	106	109	101	99	101	105
Gross import	108	50	57	73	82	103	102	98	95	95
Net export	378	135	191	136	219	141	94	106	123	155
Near East										
Gross export	83	70	71	85	98	89	85	115	110	111
Gross import	108	50	57	73	82	103	102	98	96	97
Net export	112	81	71	86	102	78	75	125	130	124
Africa										
Gross export	74	69	81	89	95	91	98	102	111	118
Gross import	59	71	81	79	85	94	96	104	104	110
Net export	79	68	80	92	98	90	98	102	114	120

TABLE II-7. ESTIMATED VALUE OF WORLD TRADE IN AGRICULTURAL PRODUCTS
(in current U.S. dollars)

PRODUCT	1947	1948	1949	1950	1951	1952	1953	1954	1955 (Preliminary)
	Indices 1952-53 = 100								
Food and feeding stuffs . . .	75	97	92	80	102	101	99	91	94
Beverages and tobacco . . .	60	67	68	82	97	96	104	120	113
Natural fibers and rubber . .	55	69	80	101	148	107	93	92	95
All agricultural products. . .	66	82	83	86	114	101	99	98	99

On the export side, the increased trade was shared mainly between Oceania, Western Europe, the Far East and Africa. The volume of agricultural exports from other regions showed relatively little change from the previous year (Table II-6), but North American exports appeared to be making more headway in early 1956.

Value of World Trade in Agricultural Products

The increased volume of trade in 1955 was, however, largely offset by a decline in prices, particularly marked in the beverages and tobacco group. As a result the value of trade in agricultural products increased by only about 1 percent (Table II-7). The index of prices of all products entering international trade changed very little from 1954 to 1955, and that for prices of manufactured goods rose by only 1 percent. The indices of dollar values in the two final columns of Table II-7 therefore reflect fairly closely the changes in the real value of agricultural trade from 1954 to 1955. Longer-term changes in the real value of trade are considered in the following chapter.

Regional analyses of changes in the value of agricultural trade are not yet available.

Price Trends in International Markets

An indication of the movement of prices in international markets is given in Table II-8 and Figure II-2, both for agricultural products as a whole and for certain groups of agricultural commodities. The indices are based on average import unit values which can be assembled more quickly than export values, but it has been found that, in general, average export and import unit values run fairly close together, though as would be expected with a certain time lag on the side of imports, most apparent at times of rapid price changes.

The downward movement of agricultural prices on world markets which has continued since the Korean boom, with only a slight check in mid-1954, mainly because of the rise in prices of coffee and cocoa, showed signs of coming to a halt in the last quarter of 1955. The indications are slight, but are apparent in each of the main groups of agricultural products. Average unit values are not yet available for any quarter of 1956, but as noted earlier, market quotations suggest that the general decline of agricultural prices has been checked, and that for some commodities (mainly foodstuffs), there are indications of a recovery, though the market has been weaker for some agricultural raw materials, notably rubber.

From the indices for sub-groups of foodstuffs in Table II-8, and from the actual average import values in U.S. dollars in Annex Table 10, it is evident that the decline in prices of cereals and sugar continued throughout 1955, though much more slowly than before. Sharper falls continued throughout 1955 from the high prices of coffee, cocoa and wool established in 1954. But on the other hand there was a marked recovery in the latter part of 1955 in the prices of most livestock products (except beef), tea, rubber and a number of other products.

Prices of forest products on the international market remained remarkably stable throughout 1955, and this stability seems to have continued into 1956. Changes in quotations for sawn softwood in the course of the year were only around 3 to 5 percent, but the landed cost

FIGURE II-2. Average Prices (Import Unit Values) of Agricultural Products in International Trade

(Semi-logarithmic scale)

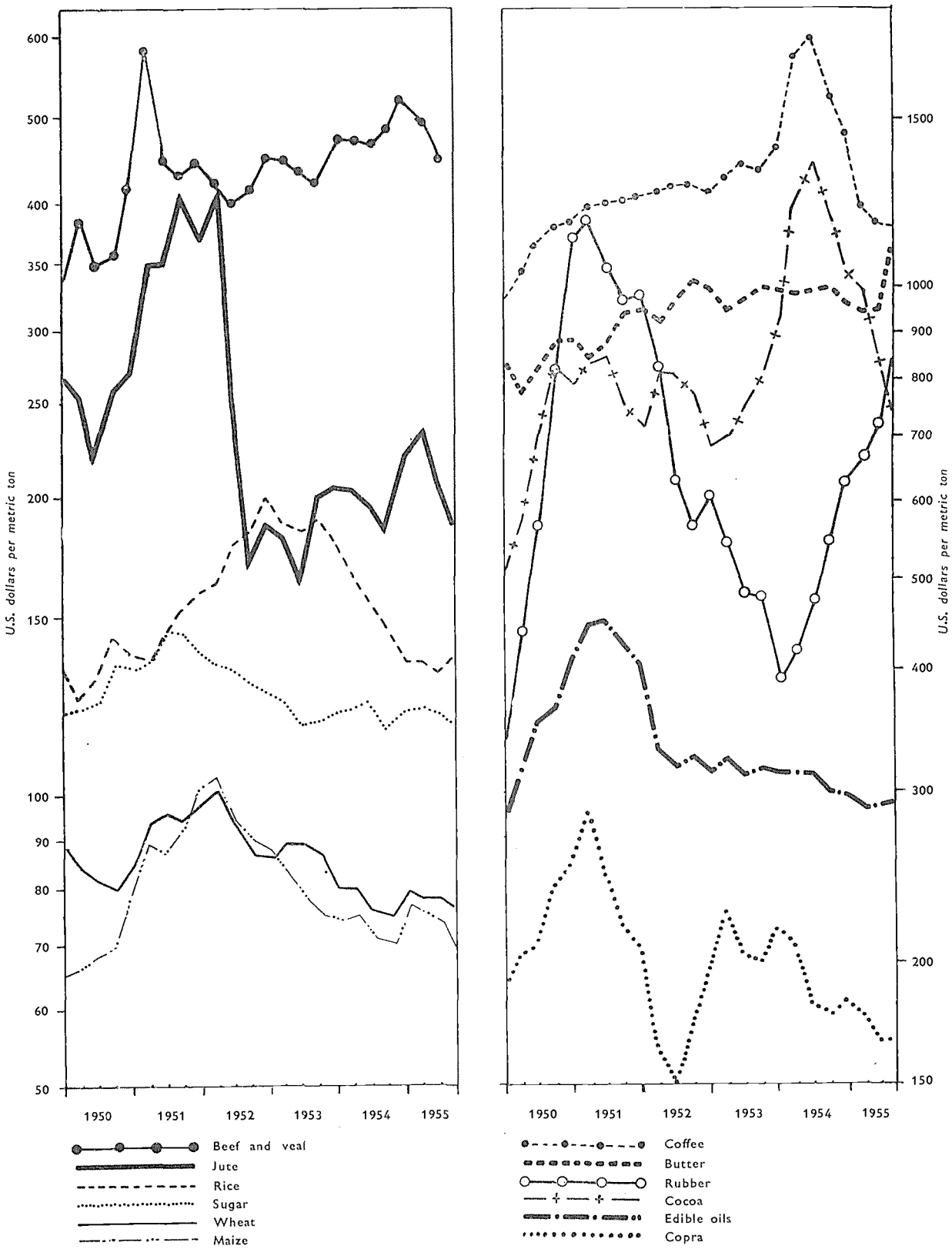


TABLE II-8. INDICES OF AVERAGE IMPORT UNIT VALUES (PRICES)

YEAR	All Agricultural Products	Food and Feeding Stuffs	Beverages and Tobacco	Agricultural Raw Materials	Cereals	Edible Oilseeds and Oil (Oil Equivalent	Meat	Dairy Products	Forestry Products [1]	All Products in World Trade [2]
	Indices 1952-53 = 100									
1947	85	101	72	69	102	92	83	96	83	92
1948	96	114	77	83	123	117	96	114	93	100
1949	89	102	71	84	102	108	97	112	81	94
1950	89	89	88	90	84	94	83	86	72	86
1951	117	102	99	156	95	122	99	92	114	105
1952	104	103	99	109	103	99	99	100	107	103
1953	96	97	101	91	97	101	101	100	93	97
1954	99	91	124	91	85	100	106	98	93	96
1955	95	89	108	96	82	94	110	98	...	[3]97
Quarterly Indices										
1954 I	96	93	109	90	89	...	104	96	...	96
II	101	92	132	89	87	...	104	93	...	96
III	102	91	136	92	82	...	104	99	...	96
IV	100	89	127	95	82	...	110	104	...	95
1955 I	98	90	119	94	83	...	116	93	...	96
II	96	89	107	98	83	...	108	91	...	96
III	93	89	97	95	82	...	105	96	...	97
IV	93	89	98	95	81	...	110	114	...	...

[1]Not included in index for all agricultural products.
[2]UN Index adjusted to 1952-53 base. Includes non-agricultural, as well as agricultural, products.
[3]Average of first three quarters.

of sawn softwood underwent greater changes because of increased freight rates. International prices of wood pulp and pulp products registered minor increases in 1955, generally not exceeding 5 percent, though in some instances temporary shortages, notably in the supply of newsprint, led to somewhat greater price changes. This price stability is expected to continue into 1956, as the growing demand for these commodities is likely to be fully met by increased export supplies.

Trade in Agricultural Products of the U.S.S.R. and Other Countries in the Communist Group

A notable development in international trade during the last few years has been the marked growth of imports of agricultural products, notably foodstuffs, into the Communist group of countries, though there has been little or no increase in exports. Tentative estimates of the volume of trade between these countries and the rest of the world, based on the trade accounts of their trading partners, suggest that agricultural imports as a whole have increased by some 60 percent since 1952, while imports of foodstuffs have increased more than six-fold. The estimates in Table II - 9 which are not, however, fully comprehensive and which do not of course include trade within the Communist group of countries itself, suggest that East-West trade now accounts for between 3 and 4 percent of the total volume of world agricultural trade.

TABLE II-9. INDICES OF VOLUME OF AGRICULTURAL TRADE BETWEEN THE COMMUNIST GROUP OF COUNTRIES AND THE REST OF THE WORLD
(Preliminary)

ITEM	1952	1953	1954	1955
	Indices 1952-53 = 100			
Food and Feeding Stuffs				
Shipments to Communist Group	59	141	343	392
Shipments from Communist Group	104	96	93	93
All Agricultural Products				
Shipments to Communist Group	97	103	164	160
Shipments from Communist Group	103	97	106	117

In 1954/55 global cereal exports by the U.S.S.R. were in the region of 3.3 million tons, i.e., a reduction of 15 percent by comparison with those of the preceding year. Although there was an increase in the quantities sent to Eastern Europe, there was a marked decline in those going to Western Europe, 0.8 million tons as against 1.1 million tons in 1953/54, and during the second half of 1955 the reduction was even more marked. In particular, bread grains exported to this region were only 209 thousand tons against 404 thousand tons in the same period in 1954. The Eastern European countries had not only to reduce their cereal exports sharply, but also markedly increase their imports. Important quantities of cereals were imported from France by Poland and Hungary, in addition to cereals purchased from the U.S.S.R.

For the current year, although there are agreements which provide for exports of cereals by the U.S.S.R. to various countries, notably Finland and Norway, at the same time heavy purchases of cereals by the U.S.S.R. are also planned. An agreement with Canada provides for imports into the U.S.S.R. of 1.2 million tons of wheat in three years. The countries of Eastern Europe will buy cereals from France, Western Germany, Canada and Australia. It seems necessary to conclude that the U.S.S.R. and Eastern Europe, taken together, will become net importers of wheat.

During 1955, imports of rice by the U.S.S.R. and other countries of Eastern Europe showed notable increases. Purchases of rice by the U.S.S.R. from Burma and Egypt reached 70 thousand tons, which represents a marked expansion. A recent agreement with Burma provides for annual purchases of 400 thousand tons of rice by the U.S.S.R., but some part of this may be resold elsewhere.

Imports of animal products by the eastern bloc, which increased strongly in 1953 and 1954, were reduced in 1955. Imports of butter and cheese by the U.S.S.R. practically ceased ; for the other countries of Eastern Europe they fell from 61 thousand tons to 22 thousand for butter and from 14 thousand tons to 10 thousand for cheese. In 1955 the U.S.S.R. imported 49 thousand tons of meat, against 87 thousand in 1954, only pork imports showing an increase, perhaps because of the slow increase of pig numbers in the U.S.S.R. during the past year. Eastern European imports of meat fell from 37 to 22 thousand tons. The only significant exports of livestock products by the countries of Eastern Europe are eggs, where there was a certain increase. In 1954/55 Poland exported 342 million eggs and Hungary 183 million.

The U.S.S.R. greatly increased its imports of sugar, however, as its planned production in 1955 was not achieved. Sugar imports rose from 177 thousand tons to 652 thousand tons, not including imports from Poland and Czechoslovakia.[1] Quantities imported from countries outside the eastern bloc were 65 thousand tons in 1954 and increased to 620 thousand tons in 1955. The principal supplier was Cuba (465 thousand tons), which has already promised delivery of 200 thousand tons in 1956. The U.S.S.R. exported 207 thousand tons of sugar in 1955 as against 221 thousand in 1954, the chief reduction being in exports to China, which increased its purchases in Eastern European countries. These countries have, in general, increased their sales within the bloc. In consequence, Poland and Czechoslovakia have reduced their exports to the rest of the world, while Hungary, which increased them, had to have recourse to a considerable import of sugar.

There are not yet adequate data on trade in other agricultural products, but generally speaking it seems that exports and imports were both reduced during 1955.

CHANGES IN STOCK LEVELS IN 1955/56

In 1955/56 additions to stocks seem likely to have been more modest than in previous years, in spite of the rise of some 3 percent in world agricultural production, and of 5 percent in production in North America where the main surpluses are located. The accumulation of stocks of cotton and grains has still not been halted, but stocks of certain other products were somewhat reduced during 1955/56.

To some extent, the smaller additions to stocks in 1955/56 reflect a gradual change in the production pattern. The shift toward increasing livestock production in the more developed countries continued, as discussed above, while the demand for livestock products is still growing. Partly, too, they may reflect the re-

[1] In 1955, Poland is estimated to have sold 215 thousand tons of sugar to the U.S.S.R. The quantity exported in 1954 is not known.

TABLE II-10. ESTIMATED STOCKS OF MAJOR COMMODITIES, 1952-56

COMMODITY	Month	Stocks					Production	Gross Exports
		1952	1953	1954	1955	1956 (Forecast)	1951-54 average	1951-54 average
		Million metric tons						
WHEAT[1]								
United States	1 July	7.0	15.3	24.5	27.8	28.6	30.1	8.8
Canada	1 Aug.	5.9	10.4	16.4	13.4	15.5	14.7	8.7
Argentina	1 Dec.	0.1	2.0	1.6	2.1	1.0	5.9	2.1
Australia	1 Dec.	0.5	1.0	2.6	2.5	3.0	4.9	2.5
Total 4 major exporters		13.5	28.7	45.1	45.8	48.1	55.6	22.1
RICE (milled equivalent)								
Asian exporters	31 Dec.	0.7	1.4	1.3	0.5	...	21.3	3.4
United States	31 July	0.1	—	0.2	0.7	...	1.6	0.6
Mediterranean	30 Sept.	—	—	0.2	0.3	...	1.3	0.3
Total		0.8	1.4	1.7	1.5	...	24.2	4.3
COARSE GRAINS[2]								
United States	1 July[3]	18.2	24.5	28.7	33.9	37.5	104.0	3.2
Canada	1 Aug.	3.6	15.1	5.6	3.8	4.5	12.8	3.2
Total 2 major exporters		21.8	29.6	34.3	37.7	42.0	116.8	6.4
BUTTER								
United States	Dec.	0.03	0.13	0.17	0.07	...	0.70	[4]—
CHEESE								
United States	Dec.	0.11	0.20	0.25	0.24	...	0.57	0.01
DRIED SKIM MILK								
United States	Dec.	0.08	0.24	0.14	0.11	...	0.46	[4]0.01
LINSEED OIL[5]								
United States	1 July	0.41	0.37	0.28	0.16	0.08	0.36	0.10
Argentina	1 Dec.	0.30	0.23	0.08	0.03	—	0.14	0.17
Total 2 countries		0.71	0.60	0.36	0.19	0.08	0.50	0.27
LIQUID EDIBLE VEGETABLE OILS								
United States[6]	1 Oct.	0.24	0.58	0.56	0.32	0.20	2.13	0.43
SUGAR (raw value)								
Cuba	31 Dec.	2.16	1.51	1.95	1.62	...	5.45	5.05
Other exporters[7]	31 Aug.[8]	0.54	0.54	0.76	0.65	...	4.96	2.01
United Kingdom	31 Aug.	0.56	0.88	1.48	0.83	...	0.67	[11]1.74
Other importers[9]	31 Aug.[10]	2.40	2.24	2.64	2.69	...	7.57	[11]5.28
Total		5.66	5.17	6.83	5.79	...	18.65	—
TOBACCO (farm weight)								
United States	1 Oct.[12]	1.54	1.66	1.69	1.83	...	1.01	0.24
COTTON (lint)								
United States	31 July	0.60	1.22	2.11	2.41	3.18	3.27	[13]0.86
Other producers		1.58	1.52	1.29	1.40	1.30	3.07	[13]1.53
Importers		0.72	0.70	0.68	0.59	0.50	0.02	—
Total[14]		2.90	3.44	4.08	4.40	4.98	6.36	[13]2.39
NATURAL RUBBER								
World Total[15]	31 Dec.	0.84	0.84	0.86	0.90	...	1.84	[16]1.75
SAWN SOFTWOOD								
European importers[17]	31 Dec.	5.74	6.19	6.56	7.46	...	8.28	[18]11.08
European exporters[19]	31 Dec.	4.31	3.63	3.85	3.80	...	12.62	7.34
North America	31 Dec.	14.54	16.00	14.67	14.87	...	87.00	10.00
SAWN HARDWOOD								
European importers[20]	31 Dec.	1.29	1.15	1.17	1.24	...	2.84	[18]0.91
European exporters[21]	31 Dec.	0.31	0.28	0.27	0.33	...	0.62	0.28
North America	31 Dec.	7.76	7.76	9.55	7.87	...	19.14	0.21

NOTE : Quantities shown include normal carry-over stocks.

[1]Exports relate to July-June and include wheat flour in terms of wheat. — [2]Rye, barley, oats, maize. Exports relate to July-June. [3]Maize 1 October. — [4]Commercial exports only. — [5]Including seeds in oil equivalent. — [6]Carry-over of oils and soybeans 1 October and cottonseed 1 August. — [7]Belgium, Brazil, Denmark, Dominican Republic, Haiti, Peru and Philippines. —[8]Denmark 30 September. — [9]Canada, France, Western Germany, Japan, Netherlands, Sweden, United States. — [10]Japan 30 June, Germany 30 September, United States 31 December. — [11]Net imports. — [12]Flue-cured types 1 July. — [13]Exports of home-produced cotton. — [14]Excluding U.S.S.R, China and Eastern Europe; and including in stocks estimates of cotton afloat. — [15]Stocks include estimates of rubber afloat but exclude strategic stockpiles, which are probably in the region of 1 ½ million tons. — [16]Exports of home-produced rubber only. — [17]Belgium-Luxembourg, Denmark, Western Germany, Netherlands, Switzerland and United Kingdom. — [18]Gross imports. — [19]Austria, Norway, Sweden and Yugoslavia. — [20]Belgium-Luxembourg, Western Germany, United Kingdom. — [21]Austria and Yugoslavia.

sults of efforts to speed up surplus disposal. Thus, although the world wheat crop was about 4 million tons greater than in 1954/55, it is expected that the addition to stocks this year will be only about 2 million tons, raising the total carry-over of the four main exporters from about 45.8 to about 48 million tons (Table II-10).

In 1955/56 the pressure appeared to be mainly on the side of coarse grains, where more than half of the increase in world production over 1954/55 (about 6.5 million tons) seems likely to be added to stocks. The carry-over in North America may thus rise from 37.7 million tons to about 42 million tons by the end of the 1955/56 season. For rice it is too early to judge the likely carry-over, which depends largely on the outcome of surplus disposal deals now under negotiation. Stocks of rice in Asia, however, are already down to reasonable proportions, and those that remain are mostly in the United States.

The only other commodity to show a major rise in stocks in 1955/56 is cotton, where world stocks may rise from 4.4 million tons to nearly 5 million tons by the end of the current season. This rise is considerably greater than the increase in world cotton production of about 0.3 million tons.

Investments of the United States Commodity Credit Corporation (CCC) in surplus agricultural products (which represent a large part of the world total) amounted to $ 8.6 thousand million at the end of April 1956, or 19 percent more than a year earlier (Table II-11). Most of the increase during 1955/56 was in cotton and maize. Wheat accounted for 32 percent of the 1956 investment, maize and other grains for 28 percent and cotton for 27 percent. Total United States stocks of wheat and cotton now represent more than three years' exports at the average level of the past few years. Stocks of coarse grains are even larger in relation to exports, but a much smaller proportion of the total production of these crops is exported. CCC investments in most other commodities, especially dairy products and fats and oils, declined during 1955/56.

In the world as a whole, stocks of most commodities apart from cotton and grains are now either not excessive in relation to future market prospects (e.g., dairy products, fats and oils, and textile fibers other than cotton) or at any rate do not give rise to immediate

TABLE II-11. UNITED STATES COMMODITY CREDIT CORPORATION: QUANTITY AND VALUE OF INVESTMENTS[1]

COMMODITY	Quantity (30 April)				Value (30 April)			
	1953	1954	1955	1956	1953	1954	1955	1956
	Thousand metric tons				*Million dollars*			
Wheat	12 890	24 208	28 156	29 073	1 095	2 155	2 633	2 791
Rice	2	58	763	1 322	—	6	98	232
Barley	95	622	2 044	1 987	5	34	107	92
Oats	250	589	1 052	1 222	14	32	58	60
Maize	13 373	20 568	22 255	29 192	835	1 296	1 437	1 927
Grain sorghum	29	1 029	2 927	2 887	1	60	167	128
Butter	58	165	149	34	86	245	212	44
Cheese	35	164	176	130	31	146	156	111
Dried milk	84	298	101	81	32	109	38	30
Linseed	96	382	20	4	14	56	25	5
Linseed oil	86	31	37	27	55	13	14	9
Cottonseed oil	288	469	170	5	116	185	64	2
Cotton linters	178	279	318	141	36	58	67	31
Cotton, upland	482	1 674	1 817	2 839	339	1 268	1 439	2 268
Wool	49	55	70	54	70	81	103	82
Tobacco	231	281	366	402	225	270	406	535
Other commodities					182	175	237	286
TOTAL					3 136	6 189	7 261	8 633
					Percent			
Increase over previous year					95	97	12	19

[1]Stocks pledged for outstanding loans and stocks in price support inventory.

Source: *Report of Financial Conditions and Operations*, U.S.D.A., Commodity Credit Corporation, April 1954, 1955 and 1956.

anxiety. Despite record production of fats and oils, world stocks have been relatively low during 1955/56, and the end-of-season stocks may be lower still as a result of extremely good prospects for exports, especially of liquid edible oils and linseed. Stocks of sugar declined slightly during 1955 and, with the continuing steady rise in world consumption, may well fall farther in 1956. Stocks of beverages are generally higher than a year ago, though stocks of coffee and tea in the main consuming countries were running low in early 1956.

Stocks of sawn softwood increased rather sharply during 1955 in the importing countries of Western Europe, but this mainly reflects the low level of such stocks since the war, largely because of the much greater cost of holding them. In North America, on the other hand, the general level of stocks has been rather higher than before the war, chiefly because of the marked increase in consumption.

Measures of Surplus Disposal

Governmental policies of surplus disposal have continued to be conducted with a fair degree of restraint and consideration for the interests of third parties, but they have so far failed to effect any significant reduction of stocks of the major surplus commodities.

Under the provisions of the Agricultural Trade Development and Assistance Act of 1954 (Public Law 480) and of various other laws concerned with promoting exports of farm products and with gifts at home and abroad, United States surplus disposals may reach a total of $ 2,500 million (valued at CCC costs) in 1955/56. Almost the whole of United States' wheat and flour exports now move under direct subsidy, or under one or other of the special export programs, while these programs, including Export-Import Bank loans, will probably account for about half of 1955/56 cotton exports.

More vigorous United States disposal measures are likely in the near future. The new Agricultural Act of May 1956 directs the CCC to dispose of all stocks as rapidly as possible. Cotton stocks are to be offered for export at world prices. Increased financial authorizations have been made for most of the existing programs of surplus disposal. A commission is to be established to investigate the increased use of agricultural products and a Surplus Disposal Administrator is to be appointed.

It has become clear, however, that these and other disposal methods alone are unlikely to bring about the full absorption of the present large stocks of some commodities. The main part of the new United States legislation, therefore, provides for the curtailment of output by means of the "Soil Bank," discussed in a later section of this chapter.

COMMODITY SURVEY AND OUTLOOK

Wheat

Wheat supplies were again larger in 1955/56. The last harvests were larger in Canada and Australia ; there were moderate declines in the United States and France but these were more than offset by increased carry-overs. There was a sharp decline in the Argentine crop and, among the major exporters, Argentina alone showed a substantial drop in available supplies. Turkey obtained a large increase. Importing countries, in the aggregate, harvested larger crops, notably Italy, Yugoslavia and Western Germany. A few countries, including Portugal, Spain, Pakistan and Egypt, harvested less but world output in total was about 3 percent larger (Table II-12).

Trade in the first three quarters of the current year was less than in the corresponding period of 1954/55, but during the fourth quarter of the season exports from the United States and Canada moved at a swifter pace and more than compensated for the earlier sluggishness. Total shipments from the major exporters in 1955/56 will thus exceed the 1954/55 figure, probably by more than 1 million tons. Nevertheless total world trade is expected to remain approximately at last year's level of 26 million tons. Argentina, with its reduced supply, was unable to repeat last year's high exports. The poor outlook for its 1956/57 crop led France to suspend further grain export sales early in 1956, but its total for 1955/56 shows little change from last year's. Turkey, despite its bigger crop, exported less than in the previous year. Sales for export recorded under the International Wheat Agreement in the first 44 weeks of the current season were over 1 million tons smaller than in 1954/55 and amounted to 70 percent of the total guaranteed quantities. Western Europe imported less wheat than in 1954/55, but substantial purchases were made

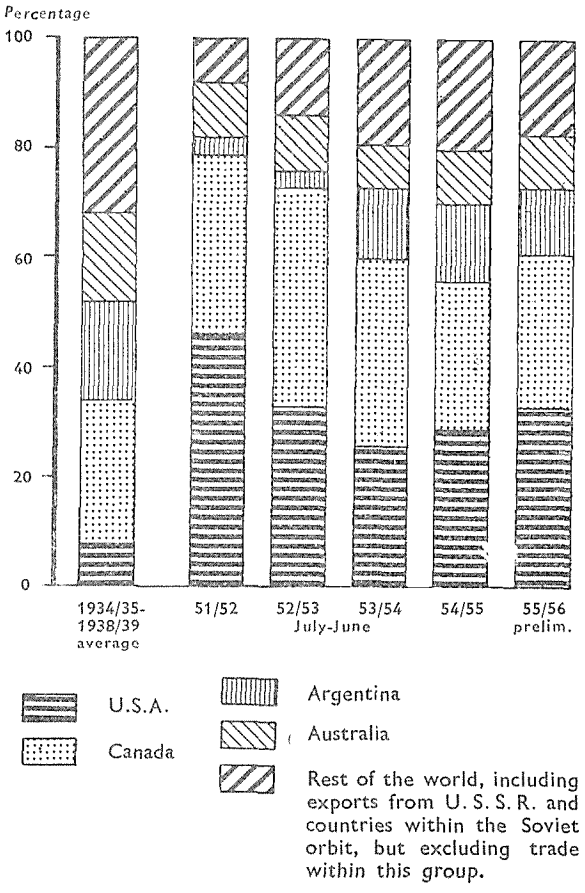
TABLE II-12. WHEAT PRODUCTION, PREWAR AND 1951-55

COUNTRY	1934-38 average	1951/52	1952/53	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons					
Argentina	6.6	2.1	7.6	6.2	7.6	4.8
Australia	4.2	4.3	5.3	5.4	4.6	5.3
Canada	[1]7.2	15.0	18.7	16.7	8.4	13.4
United States	[1]9.5	26.7	35.3	31.8	26.8	25.5
TOTAL 4 COUNTRIES	37.5	48.1	66.9	60.1	47.4	49.0
Western Europe	31.1	30.1	32.6	35.1	35.6	37.6
Others[2]	26.4	29.9	31.0	34.7	35.2	35.6
WORLD[2]	95.0	108.1	130.5	129.9	118.2	122.2

[1]Production for the years 1934-38 was abnormally low, owing to the effects of the extreme droughts of 1934 and 1936. The 1937-41 averages for Canada and the United States were 10.4 and 23.4 million tons respectively.
[2]Excluding U.S.S.R., Eastern Europe and China.

by the U.S.S.R. and Eastern Europe (Figure II-3).

FIGURE II - 3. Share of Major Exporters in World Wheat Trade



The end of the season will show some additions to wheat stocks in the United States, Canada and Australia, and these will more than offset a decline in Argentina.

Preliminary crop indications for 1956/57 suggest that the United States harvest will be only slightly smaller. For Canada, a slightly reduced acreage and less favorable soil moisture conditions point also to a reduction. In Western Europe, the severity of the winter will result in a substantially lighter crop in France and some reduction also in some other countries. The region's import requirements may consequently rise in 1956/57.

Export prices of wheat, except for top grades, showed some decline during 1955/56, but c.i.f. prices since March have increased again to the level of last July following some rise in freight rates.

A new International Wheat Agreement was negotiated in April 1956 and will come into force on 1 August if ratified. The United Kingdom has again remained outside the agreement, but new participants are Argentina and Sweden. The total of guaranteed quantities, at 8.2 million tons, is substantially below the present Agreement, but it excludes certain bilateral agreements of Argentina, amounting to a further 1 or 2 million tons of wheat, which may later come under the IWA. The price range has been reduced by 5 cents to $1.50 - $2.00 per bushel for Northern Manitoba No. 1, in store Fort William - Port Arthur.

Coarse Grains

With large crops from the 1955/56 harvests and an increased carry-over, supplies of coarse grains in the United States were again large and it is clear that the anticipated larger off-take will not prevent a further substantial addition to stocks, for the fourth successive year, by the end of 1955/56. Prospective acreages for harvest in 1956, based on farmers' planting intentions, are about 4 percent smaller. In Canada also some rise in stocks is likely by the end of the 1955/56 season. Farmers' planting intentions for 1956 point to a slight increase in coarse grain acreages. In Argentina, the current year's output of both maize and small coarse grains is substantially larger than in the preceding year, but stocks held or in prospect are not of excessive proportions.

Exports of coarse grains during 1955/56 from the four major exporters are estimated at over 11 million tons, or 20 percent above those in the previous season. A substantially larger proportion was shipped by the United States, this source exporting 7.4 million tons against 3.9 million tons in the preceding year. Canada's shipments were slightly less and Australia's about the same, but Argentina exported only half as much as in 1954/55 as a result of the reduced maize crop harvested early in 1955.

Up to the last months of 1955, prices of feed grains moved lower but subsequently barley recovered its July level, and U.S. maize, which had fallen more steeply, made up its decline. In c.i.f. terms, the net result was rather higher prices in May than at the beginning of the season. The increase was most marked in Argentine maize, owing to the reduced supply in this source and the steep rise in La Plata freights.

Rice

Total production in 1955/56 was probably somewhat higher than in 1954/55. Noteworthy increases occurred in Japan, India and Cambodia, but smaller crops were harvested in the United States, where the acreage had been severely cut, and in Pakistan.

Contrary to expectations, world trade in rice made a further recovery in 1955 from the post-Korean low of 1953 (Table II-13). Imports into India and Japan were indeed lower than in 1954, but Hong Kong, Malaya, and Singapore expanded their imports markedly. Europe's purchases also increased considerably, the main reasons being the purchases by Eastern Europe, made largely on barter terms, and increased imports of rice for animal feeding and industry in Western Europe. Special features of 1956

TABLE II-13. WORLD TRADE IN MILLED RICE

COUNTRY	1934-38 average		1948-52 average		1953		1954		1955[1]	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	Million metric tons									
Burma	3.1		1.2		1.0		1.5		1.6	
Thailand	1.4		1.4		1.3		1.0		1.2	
United States	0.1		0.6		0.7		0.6		0.5	
Cambodia, Viet-Nam	1.3		0.2		0.2		0.3		0.2	
China		0.7	—		0.3		0.3		0.3	
Italy	0.1		0.2		0.2		0.2		0.2	
Japan		1.7		0.7		1.1		1.4		1.2
India		1.9		0.8		0.2		0.6		0.2
Malaya-Singapore		0.5		0.5		0.5		0.3		0.5
Indonesia		0.3		0.5		0.4		0.3		0.1
Other Asia	2.3	1.0	0.5	1.1	0.2	1.1	0.2	0.6	0.3	0.8
Other areas	0.3	2.2	0.6	0.9	0.4	0.9	0.2	0.9	0.4	1.6
WORLD TOTAL	8.6	8.3	4.7	4.5	4.3	4.2	4.3	4.1	4.7	4.4

[1]Preliminary.

Note: Includes exports of domestic rice from surplus producing countries only; in addition, net importing countries exported about 300,000 metric tons of domestic rice in the prewar period, 50,000 metric tons in 1948-52 and 1953, 100,000 metric tons in 1954 and 190,000 metric tons in 1955. Imports are net figures.

have been the great expansion in Indonesia's imports and the appearance of Pakistan as a buyer.

The pressure of stocks on markets has considerably lessened. The main stocks are now those of the United States Government, while in Asia only Burma now has substantial exportable stocks. The United States is disposing on special terms during 1956 and 1957 of a total of over 400,000 tons of milled rice to Indonesia and Pakistan, and other negotiations are in progress for further large quantities.

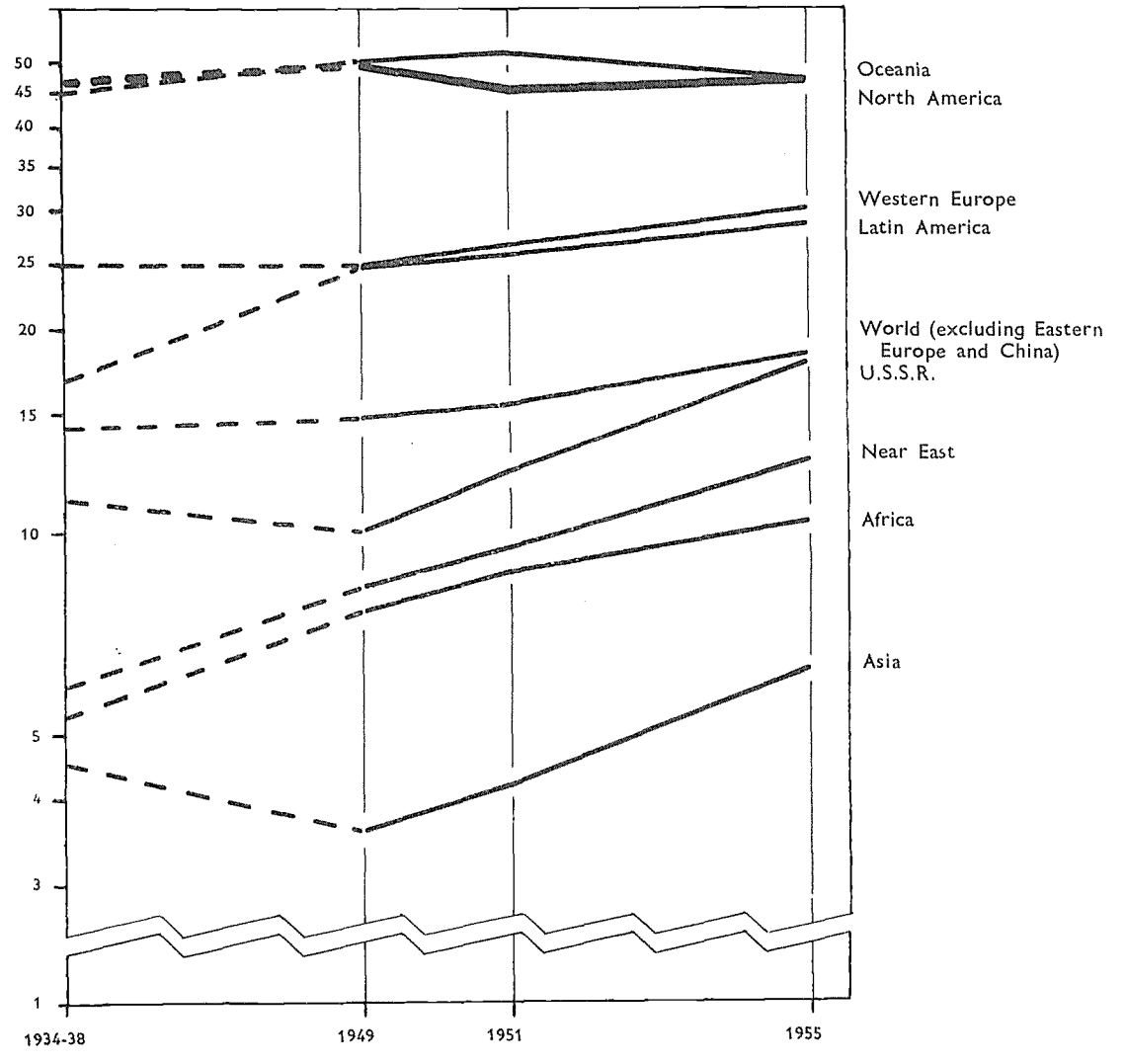
The decline in rice prices in international trade has continued into 1956. The basic Burmese price has been fixed at about £36 per ton f.o.b., against the price prevailing a year ago of £43. These lower world prices are easing the rice situation by discouraging excess production and stimulating consumption. Further drastic acreage restrictions have been announced in the United States, and there will probably be a lower production in Italy, owing to changes in the price support system. In other countries the expansion of acreage is being slowed down or even halted, though efforts continue to raise the yield per hectare, partly with the hope that this will reduce the unit cost of rice.

Sugar

A further advance is taking place in the steady postwar expansion of sugar production. World production was a record of 39.0 million tons in 1955/56, or 4.5 million tons higher

FIGURE II - 4. World and Regional Consumption of Sugar

(Kilograms per caput per year ; semi-logarithmic scale)



than in 1952/53, and about 14 million tons above the prewar average. These increases are to be attributed largely, not to favorable weather, but to long-term factors, including expansion of planted areas and increases in yields as a result of improvements in agricultural and factory techniques, higher-yielding varieties, better transportation and handling, etc. However, in the U.S.S.R., Eastern Europe and most of Asia, the long-term forces of rising productivity, which have been so important in Western Europe, the Americas and Oceania have been much weaker, and the relative production expansion has not been as great.

Consumption has kept pace with the production increase. Indeed, stocks declined somewhat during 1955 and it is highly probable that there will be a further decline in world stocks by the end of the current season. In recent years consumption has increased in particular in Near Eastern, African and Asian countries. In 1955, total consumption in the Near East and Africa was almost three times as high as during 1934-38. The percentage increase in Asian countries has been among the most rapid in the world in the last few years, the estimated total consumption in 1955 being 55 percent above 1951. Indications are that this trend will continue, probably with increasing momentum (Figure II-4).

The steady rise in consumption has prevented a serious decline in prices. Although most consumption increases were provided by domestic production, the volume of international trade has not declined. During the current year the international market was supported by imports by the Soviet bloc.

It is likely that, barring extremely unfavorable weather conditions, production will be still larger during the coming year, and the outlook for the next few years points to continuous growth. Consumption, too, will continue to expand. As in the past, the rise of incomes in low- and medium-income countries will have a marked effect on sugar consumption. However, price and market developments during the balance of this year may be profoundly influenced by the outcome of the International Sugar Conference.

Livestock Products

World *meat* production and trade increased in 1955 and the expansion has continued into 1956. In 1955 exports were about 7 percent larger than the year before, almost all the major exporters recording increases. As a result of the new agricultural policy in Argentina, its exports of carcass meat were about 50 percent above the level of 1954 and they expanded further at the beginning of 1956.

Following marked production increases, meat prices in the United States declined substantially during 1955, and producer prices for meat animals during January-April 1956 averaged 17 percent below the corresponding 1955 period. In the United Kingdom also, beef prices are well below 1955, mainly due to larger imports ; but in most other European countries meat price levels compare favorably with last year. United Kingdom price guarantees for 1956/57 were increased for fat cattle and sheep and reduced for pigs. To check the decline in pig prices, the United States Department of Agriculture purchased during the five months from November 1955 about 90 thousand tons of pork and lard ; the pork has been used for domestic school-lunch and welfare programs. Sizeable meat exports from the United States may develop under Public Law 480 Agreements ; thus far, a total of 37 thousand tons of beef and pigmeat has been sold to Israel, Spain, Chile and Korea.

The volume of world *milk* production in 1955 is estimated to have been slightly less than in the preceding year, mainly because of a decline in Western Europe due to unfavorable weather. Butter production declined about 4 percent and cheese production was also reduced slightly, but output of preserved milk was above the 1954 level. World butter exports were larger, because of heavily increased shipments from Oceania and North America. Imports into the United Kingdom and Western Germany were substantially above 1954, but purchases by the U.S.S.R. and Eastern Europe declined by nearly two-thirds. In Europe, prices of dairy products were in many instances higher than in 1954, while in the United States they remained at support levels. World butter stocks in the first quarter of this year were on the average nearly one-third less than the year before. By March 1956, the United States Commodity Credit Corporation had almost entirely disposed of the 400 thousand tons of butter purchased since 1952 ; in April, butter was withdrawn from the foreign donations program, because of limited supplies. On the other hand, non-committed holdings of cheese were still more than 100 thousand tons.

It is expected that in the current year, production of milk and dairy products will be generally larger than in 1955. United Kingdom butter imports in the first quarter were 16 percent above the corresponding 1955 figures. As consumption did not increase, larger supplies resulted in a considerable growth of stocks and substantial reductions of prices in recent months. United States support prices for butter and cheese for 1956/57 are about 3 percent higher than in the preceding support year ; the support price for dried skim milk remained unchanged. The volume of price support purchases in the United States may not change greatly in comparison with 1955.

World *egg* production is estimated to have increased slightly in 1955, and a further small expansion is expected in 1956. The volume of trade in eggs in the shell was larger also, but increased rather less than in the preceding years. Western Germany, which since 1951 has been the largest importer of eggs in the shell, imported last year 18 percent more than the year before. On the other hand, United Kingdom imports have been declining recently and the downward movement continued in 1956.

As world livestock numbers are at record levels and feed supplies ample, the outlook is for a continued expansion of livestock production in 1956/57. Some difficulties may be encountered in the marketing of dairy products, as import requirements of some of the major importers of continental Europe are likely to be smaller. Strong efforts to increase United States exports of government-owned stocks of dairy products may be another factor with a depressing effect on prices. Increased world output of meat should, however, find ready markets because of continued firm demand, although the growth in exportable supplies in the Southern Hemisphere, with the United Kingdom as main outlet, may tend to keep export prices down.

Fishery Products

In general, international trade in *fresh and frozen fish* has been maintained and some small increases were recorded. Imports into the United States, the United Kingdom and Western Germany were slightly higher in 1955. The United States imported more frozen tuna, while imports of groundfish fillets were a little lower than in 1954 but still 40 percent higher than in 1953. Norway's exports of frozen herring increased in 1955, especially to Czechoslovakia, which, together with Eastern Germany, Poland, and U.S.S.R. took 70 percent of the exports.

Dried, salted and smoked fish. The imports of salted herring into Western Germany and Belgium were on the same levels as in 1954, while Sweden imported 40 percent more. The Netherland's exports of salted herring show a decline caused mainly by a drop in exports to the U.S.S.R. ; Norway's exports were about the same as in 1954, and Iceland's markedly increased, especially to the U.S.S.R., Sweden and Finland.

Iceland's stockfish exports dropped to about half the record level of 1954, to return to the 1953 level. Salted fish production and exports, however, expanded through a strengthened demand and good prices. In Norway, exports of salted cod show an increase of more than 10 percent, Brazil remaining by far the biggest importer, but exports of stockfish remained at the same level as in 1954. Italy's stockfish imports increased slightly, while there was a slight drop in those of West Africa.

Canned fish. There was a decline in the canned salmon pack on the West coast of North America and the United States pack was the lowest since 1906. Declines were also experienced in tuna and the Maine sardine. United States imports of canned salmon from Japan and Canada increased sharply. The Japanese canned salmon pack showed a spectacular increase in 1955, being three times larger than in 1954 and eight times larger than in 1953. In Norway the brisling pack was quite small due to the poor catch, and certain of Norway's exports of canned herring and other fish show slight declines in 1955. Portugnese exports of canned fish increased about 30 percent in 1955. Western Germany was the main market, followed by Italy, the United Kingdom and the United States. Imports of canned herring and sardines into France, Western Germany and Italy remained at 1954 levels. In France a significant drop in sardine landings caused the canneries to utilize more tuna.

Fish meal. In the United States a record output of menhaden meal was produced. Denmark's catches increased, mainly through heavier fishing for reduction purposes, with a corresponding increase in fish meal production. In the Union of South Africa, where quotas

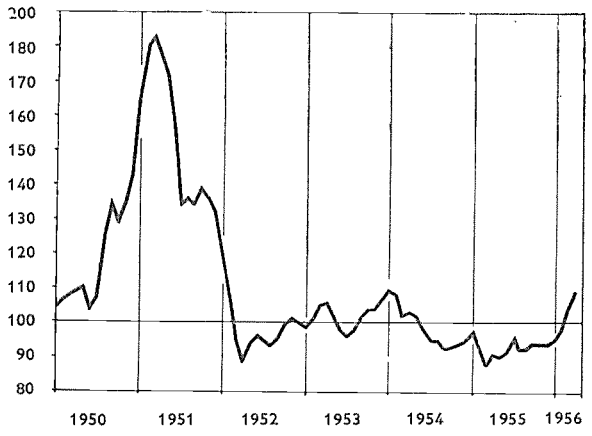
on catches and on reduction plants are enforced, fish meal output was probably slightly less than in the past few years. Iceland produced less herring meal for export, as more of the catch was diverted from reduction to salt fish production. In 1955 fish meal exports from Norway dropped more than 20 percent from the record 1954 level. Prices appear to be firm, as a result of which it is expected that more of the catch will be diverted from salted herring production to fish meal plants in 1956. It is important to note that the 1956 winter herring catch amounted to 12,263,370 hectoliters, compared with 11,744,411 hectoliters for the previous record year of 1954.

Fats and Oils

A record world output of over 24 million tons of fats and oils was available for use in 1955, while livestock slaughtering forecasts in North America and information on crop operations since the closing months of 1955 suggest even greater supplies in 1956. Nevertheless, the general level of world market prices moved upwards during the last quarter of 1955 and continued to rise at an increasing rate to peak levels in May. International trade in fats, oils and oilseeds during 1955 made moderate gains over the record volume shipped in 1954, largely due to increased exports from North America and some Far Eastern countries, including China. By March of 1956 a continued high level of trading activity was being experienced, which was expected to continue for the coming months. In May, prices for some major oils were at the highest point since 1951, and the FAO index of international market prices of fats and oils stood at 113 (1952-54 = 100), 26 percent higher than a year previously. In June however, the index moved downward to 106 (Figure II-5).

FIGURE II - 5. Price Index of Fats and Oils (excluding Butter) on the World Market 1950-56

(Average 1952-54 = 100)



Despite the record 1955/56 output of fats and oils in the United States, end stocks may be at the lowest level in five years. Exports during the marketing year to September 1956 are expected to be at unparalleled high levels. Demand for United States food fats and oils, and for other exportable surpluses, during the opening months of 1956 was sustained by strong economic activity in Western Europe, disposal arrangements involving important quantities of liquid edible oils made under United States foreign aid programs and serious deficit situations in a number of producing countries. Large shipments into Argentina have been necessary to supplement the disastrously low 1954/55 harvests, while the olive crop in the Western Mediterranean has been so low for the last two years that considerable imports of other "soft" oils were needed in 1955 and are still being obtained to meet domestic requirements during 1956. European trade demand has also been stimulated through the prospect of another poor olive crop in 1956/57 and the damage done in February to winter rape sowings.

Total 1956 supplies of the major liquid edible oils (cottonseed, groundnut, soybean and olive) which comprised about three-quarters of the estimated 9.5 million tons of this group of oils available for use in 1955, are unlikely to decline. Increases in 1955/56 groundnut and soybean crops have probably offset the reduction in olive oil supplies. Record groundnut supplies for crushing are available from current West African harvests, United States supplies of soybeans are ample, and a new record crop is expected in 1956/57, while the volume of exports of both groundnuts and soybeans from China is being maintained at an unusually high rate for postwar years. World output of cottonseed oil will depend on the size of the 1956/57 cotton crop in the United States, but is unlikely to be significantly reduced from the 1.5 million tons peak reached for the last two years, despite lower United States cotton support prices and area allotments. In Argentina, 1955/56 edible oilseed crops, particularly sunflower seed, are much larger than in 1954/55, when this country became a net importer of

edible oils. Linseed oil supplies during 1956 are also likely to rise moderately, due largely to Canadian crop expansion, while larger plantings in 1956/57 are forecast, and a recovery in Argentina's crop area is probable. World copra output in 1955 was at high levels, chiefly owing to increased output in the Philippines, and based on early 1956 shipments, this year's crop in that country will be even larger. Palm oil and palm kernel purchases in Nigeria, the world's leading producer, declined moderately in 1955, but rose again toward the end of the year and during the first four months of 1956.

Stronger import demand in Europe and Japan was a major factor during 1955 in bringing the quantity of fats and oils commodities exported up to 6.7 million tons (oil equivalent). The largest increases occurred in the liquid edible oils group (groundnut, cottonseed and soybean), and during 1955 and early 1956 the last of United States government-held stocks of cottonseed oil, linseed and linseed oil were sold. United States assistance to international trade through the financial provisions of foreign aid programs, rather than through the direct sale of government stocks, has now become more important. These provisions permit payment for quantities bought in the open market in the currency of the importing country. From September 1955 to May 1956, agreements had been made with 15 countries, mostly in Latin America and the Mediterranean basin, covering over 350 thousand tons of edible oils. The rate of shipments under these agreements has accelerated in 1956 and transactions of this kind will continue to be a significant element in the international trade and price situation throughout the year.

Fresh Fruit

Orange production is expected to have reached a new record in 1955/56, in spite of the severe frost in early 1956, which caused damage to unharvested fruit in Spain and Italy. Orange exports in the 1955/56 season exceeded those of 1954/55, though Spanish exports practically came to an end in early March as a result of the frost damage. Larger shipments from Israel, Italy and North Africa more than compensated for the decline in Spanish exports, but the disappearance of Spanish oranges in the spring brought a marked increase in prices, which, on the average, had been lower in the early part of the season than a year before. France and Germany, the principal markets for oranges, increased imports further in 1955. European imports of summer oranges from the United States, the Union of South Africa and Brazil are expected to reach a new high level in the summer of 1956.

Orange production in Spain in 1956/57 is likely to be reduced by nearly 1 million tons because of frost damage to trees. Total orange shipments from Mediterranean countries are, therefore, likely to fall substantially below the level of the 1955/56 season.

Production of table apples and pears was some 10 percent less than in 1954. The decrease was very sharp in Northern and Central Europe, whereas Italy had a record output. There was a large expansion in European imports of apples and pears, especially from Italy, and prices of most varieties showed a marked increase. It is still uncertain to what extent the severe frost in early 1956 will affect European output of apples and pears. Production of stone fruit will be substantially reduced.

Dried Fruit and Wine

Raisin production increased in 1955. United States output rose by about 30 percent, but supplies from the non-dollar regions were lower. Production of Turkish sultanas fell because of frost damage, and output of raisins in Greece, Australia and South Africa was also lower, but Iran increased production by 10 percent. Output of currants in the principal producing countries, Greece and Australia, was the lowest in the last ten years.

Exports of raisins in 1955 were slightly lower than in 1954, largely because of the sharp decrease in Turkish exports, but exports from the United States also decreased by about 10 percent. Greek exports of currants, mainly to the United Kingdom, decreased sharply compared with 1954, though remaining slightly above the average of 1948-52. The U.S.S.R. became a significant outlet for Turkish sultanas in 1956. Prices of raisins and currants were higher in 1955/56, except for California raisins, while reduced shipments of fresh fruit since the severe frost in February 1956 have strengthened demand in the European market and prices have increased further.

Turkey and the United States have continued their export subsidies, and the Turkish rates

were substantially increased and extended to figs. In Australia a price stabilization scheme for raisins has been negotiated which may become effective in 1956. The Union of South Africa growers have been advised to reduce raisin production.

Output of other dried fruit decreased further in 1955. A larger production of dried prunes in Yugoslavia, Argentina and Chile did not offset the reduction in the United States output. Yugoslavia exported 10 thousand tons of prunes to the U.S.S.R., one-third of its total exports, which was the first shipment to Russia since 1949. Marketing of Iraqi dates has improved with expanded outlets in Pakistan and Japan, but there are still marketing difficulties for lower grades. Production was unchanged in 1955, but is expected to be slightly smaller in 1956, producer prices having been reduced by 30 percent in February 1956. The Iranian date crop was 40 percent lower than in 1954.

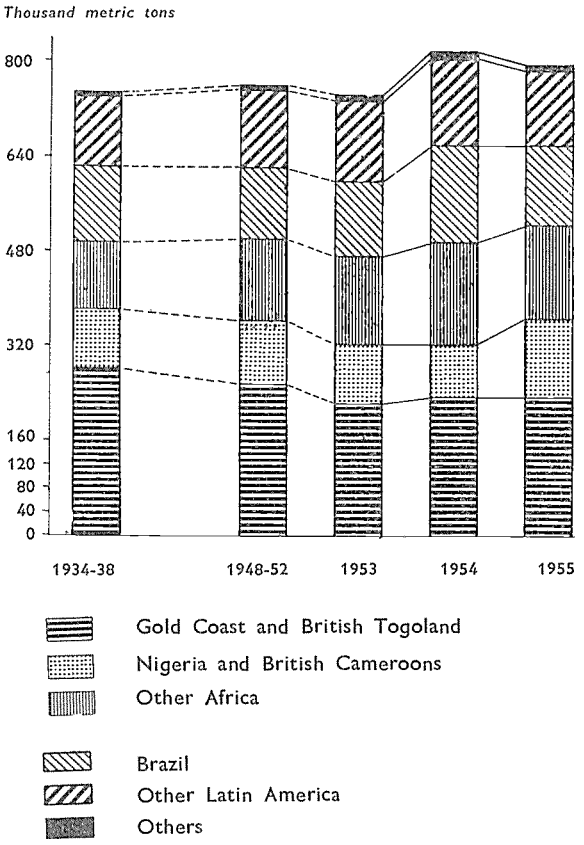
Unsold stocks of dried fruit at the end of the 1955/56 season are expected to be insignificant. Forecasts of 1956 production of Turkish sultanas indicate an average crop, and Australian output is reported to be on the same level as in 1955, whereas the South African raisin production may be smaller.

World production of wine was unchanged in 1955. North African yields were unusually low and brought a decrease of 20 percent, which offset increases in the United States, Italy and France. International trade in wine also remained at the 1954 level. Stocks held by producers on 1 September 1955 in France and Algeria were 19.2 million hectoliters against 16.9 million hectoliters a year earlier. With the lower 1955 production in Algeria, the total supply for France and Algeria in 1955/56 was 1.4 million hectoliters less than in 1954/55. As tax-paid consumption in Metropolitan France and Algeria continued its upward trend in 1955/56, the carry-over on 1 September 1956 may be smaller than last year, if distillation and industrial use remain as in 1954/55. A smaller European grape crop in 1956 is likely as a result of frost damage in the early part of the year.

Cocoa

The world cocoa economy is still profoundly affected by the great price rise of 1954, and by the consequent fall in the demand for cocoa. Some of the results were of a technical and

FIGURE II - 6. Cocoa Production

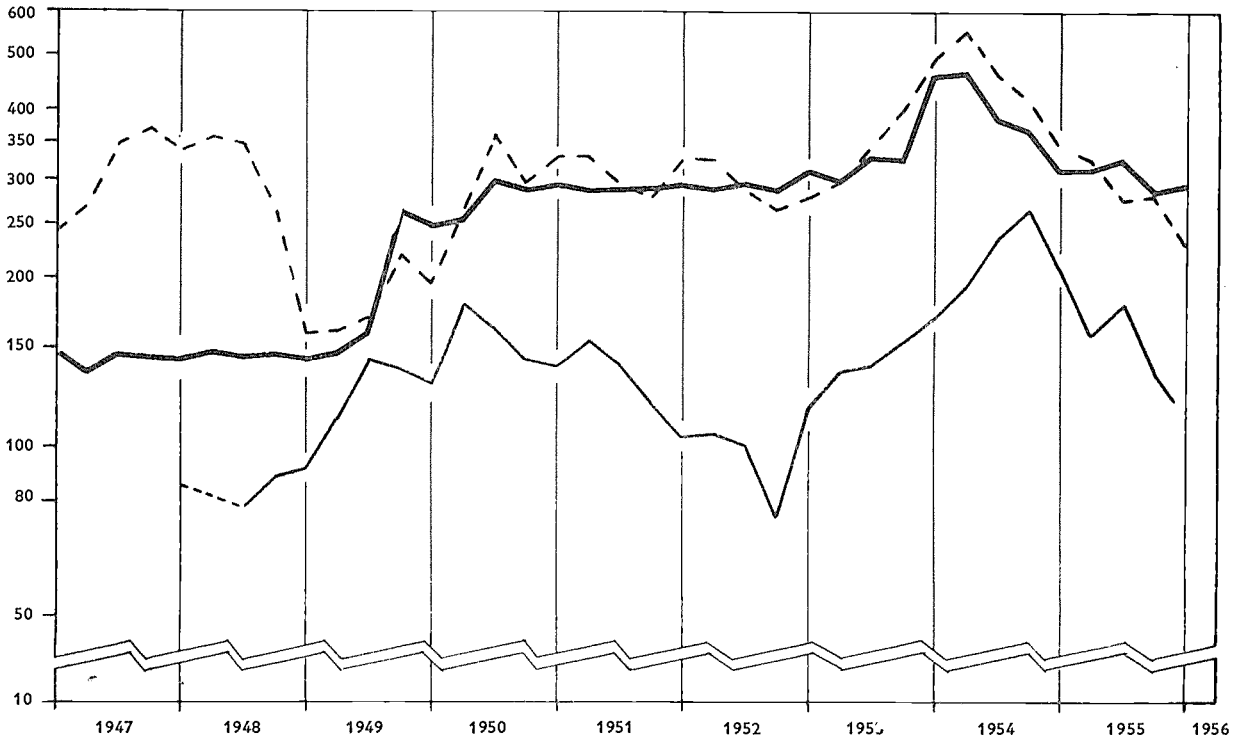


structural character which reduced demand for cocoa beans by 10 to 20 percent.

As a result, carry-over stocks at the end of the 1955 cocoa year were much greater than had been anticipated. Production was only 50 thousand tons higher than the very low crop of 1953/54, but the decisive development was that during 1955 consumption had fallen by 50 to 60 thousand tons. When the current crop began in the autumn of 1955, stocks were high and prices declined. This situation has continued, notwithstanding the fact that the 1955/56 crop is likely to be around 800 thousand metric tons, as compared with 825 thousand in the previous year (Figure II-6). Stocks continued to increase during the first part of 1956 and early in April the New York price declined to 23 cents per pound and the London price to 170 shillings per hundredweight (from 250 shillings at the end of 1955). The extent of the market change will be realized when it is recalled that in 1949/50 and 1950/51, production was about the same as during the

FIGURE II-7. Indices of Prices of Coffee, Tea and Cocoa

(1946 = 100)



current year, but the average price during those two years was 34 cents per pound (Figure II-7).

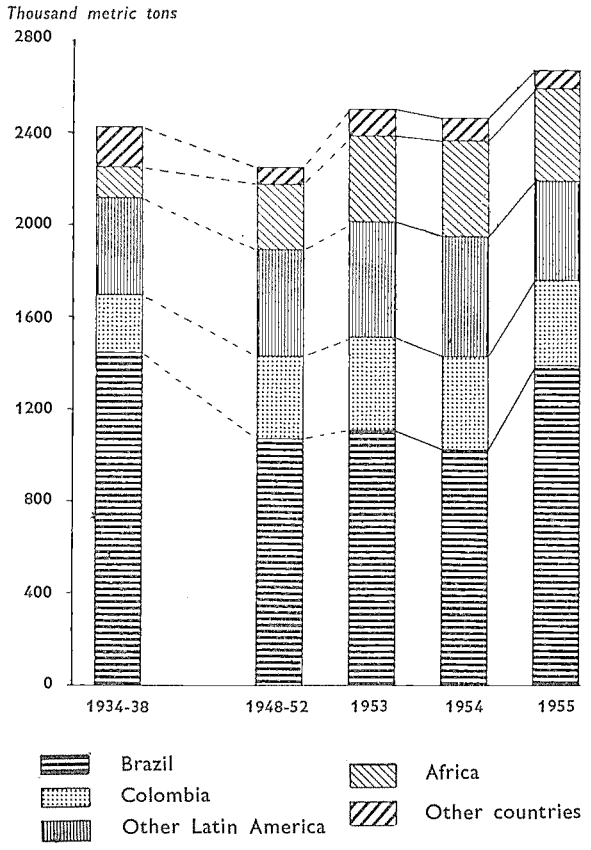
An important factor in the present situation is the fear of manufacturers that an improvement in consumption and marketing may lead to a repetition of the very high prices of 1948 and 1953. Knowing that there is no fundamental change in the production situation or in the outlook, many of the larger industrial users are following a policy of caution. In the United States per caput consumption of cocoa beans in 1955 was 28 percent lower than during 1934-38, notwithstanding the rise in incomes, although consumption of sugar confectionery has more than kept pace with population growth.

Coffee

World production during the current year is likely to reach 44 million bags (2.64 million tons), which is about 7 percent higher than during 1954/55, and 13 percent above the 1950-1953 average. The 1955/56 total would have been even higher but for a sudden and substantial decline in Colombian and Central American crops, due apparently to unfavorable weather conditions. On the other hand, production has continued to rise in Africa and in other parts of the world, while in Brazil the 1955/56 crop of 23.3 million bags (1.40 million tons) established a postwar record (Figure II-8.)

Low stocks in consuming countries and lower prices stimulated demand throughout 1955 and the first part of this year. United States imports, which had fallen severely during the great price rise in 1954, were 15 percent larger although still 7 percent below 1953. United States per caput consumption also began to recover from the adverse effects of the price rise, but in 1955 it was still 16 percent below the average consumption of the immediate postwar years. Imports into France, Western Germany and other European countries continued to rise; however, notwithstanding the great

FIGURE II-8. Coffee Production



increases in incomes, per caput consumption remained below 1934-38. Provisional figures indicate that world imports in 1955 were around 34 million bags (2.2 million tons), or 12 percent above 1954.

As a result of the recovery of consumption and, above all, unfavorable production developments, coffee prices have been more firm than had been anticipated (Figure II-7). The decline in production of Colombian and other mild coffees led to a sharp price rise which also strengthened prices of Brazilian varieties. Nevertheless, the differential between the "mild" varieties and the standard Santos widened from the normal 3 - 5 U.S. cents to 15 U.S. cents, the widest spread of the last decade. News of severe frost damage to the 1956/57 Brazilian crop has kept prices relatively stable since September 1955, supported by the strength of the better quality coffees. However, the market for African Robustas declined under the pressure of increased supplies. Recent developments indicate a continuation of remunerative prices at least for the balance of the current year. While forecasts of the 1956 Brazilian crop vary considerably, it is now recognized that world production in 1956/57 will be lower than in 1955/56. Futures for the most distant months consequently rose from 41 cents in September 1955 to 51 cents in March 1956. However, there is the danger that high prices will, as in 1954, adversely affect consumption and imports. Although no abrupt changes in consumption are to be anticipated, it is possible that the improvement which began last year may be temporarily halted, which would aggravate the effects of any sharp rise in supplies in the future.

Tea

A record tea production was attained in 1955. In India and Ceylon production advanced more than had been anticipated during the last months of the year, and there was continued expansion in African production. But in Pakistan and Indonesia, crops were slightly lower than those of the previous year. However, due to various administrative and other factors, exports declined. African exports rose, and Ceylon succeeded in maintaining her 1954 volume ; but exports from India, Indonesia and Pakistan suffered a decline.

These supply and trade conditions, together with other factors, influenced prices (Figure II-7). The decision by the Indian Government to restrict shipments to the London auctions to 140 million pounds (63,500 tons) led to a shortage of warehouse space, overburdening of auction facilities in Calcutta and a fall in prices from July 1955. Another factor was the decline in quality of India and Ceylon teas due to coarser plucking. Large stocks accumulated in producing countries. At London, on the other hand, a scarcity of supplies resulted in a rise in prices in the autumn of 1955. However, early in March 1956 the Indian Government temporarily abolished the export quota. As a result, shipments are likely to rise and a closer balance of prices will be achieved between the various auction markets.

For the current year, the Indian tea industry appears to be considering the re-introduction of crop regulation. But the outlook is not unfavorable, despite the abundance of supplies. United Kingdom stocks are low, imports into practically all consuming markets can be expected to improve, and, given acceptable quality, prices are likely to remain firm.

Tobacco

Though United States stocks have reached a record level, the world tobacco market remains rather stable. World production, trade and consumption expanded further in 1955 and production and consumption should continue their increase in 1956. No general fall in prices is expected in spite of surplus stocks. Acreage restrictions, marketing controls and government stabilization purchases are widely used.

Output of flue-cured leaf in 1955/56 in the U.S.A., Japan and the Philippines was much larger than in 1954/55. Decreases occurred in Canada and India, while production in Southern Rhodesia was about the same. Production of oriental leaf increased by a further 15 percent.

Stocks of all domestic leaf in the United States reached 2.3 million metric tons (farm sales weight) on 1 January 1956, an increase of 9 percent during 1955. The increase in Government financed stocks, however, was as much as 50 percent. Canadian stocks increased only slightly, and stocks of Cuban tobacco, held by the Tobacco Stabilization Fund, decreased. Carry-overs of oriental tobacco, except in Turkey, were not significant, in spite of the steady increase in output. Stocks of tobacco in importing countries are believed to have increased during 1955, and United Kingdom end-of-year stocks were the highest since the war.

Prices at the United States auctions of flue-cured leaf of the 1955 harvest were close to the levels of the two previous seasons, but more of the crop was placed under government loan. Prices of flue-cured tobacco at the Southern Rhodesian auctions in 1955 were slightly above those of 1954, but during the first weeks of the 1956 sales prices have been some 20 percent lower than in the same weeks of 1955. The Marketing Board suspended the auctions in April and initiated negotiations with United Kingdom manufacturers in order to improve the marketing of the record output. Greek export unit values were U.S.$1.40 per kilogram in 1955, as against 1.18 in 1954. In view of the increased 1955 output, the Greek government announced in April 1956 that it would purchase about 8 thousand tons to stabilize the market. Turkish export unit values reached $1.46 per kilogram in 1955, compared with $1.34 in 1954. The Turkish government has introduced a subsidy of about 9 U.S. cents per kilogram for all tobacco sold by producers in the current season.

World exports were larger in 1955. The U.S. exported 244,300 metric tons against 205,700 metric tons in 1954. About one half of the increase was due to shipments under PL 480 (payment in local currency). Canada's exports also showed a large increase.

Consumption continues to increase in almost all countries, including the United States where cigarette consumption had weakened in 1953 and 1954. Except in the United States, where acreage has been further restricted, production is expected to increase in 1956. In the long run, the efforts of various importing countries to become self-sufficient may sharpen competition in the export market and ultimately result in some decrease in prices, unless major exporters are willing to restrict output and exports still further.

Cotton

Present indications are that the world carry-over at the end of the 1955/56 season may be some 2 million bales larger at about 24 million bales, and that this further increase will again be concentrated in the United States. World production in 1955/56 is estimated at a record of about 39 million bales, but it seems unlikely that consumption will much exceed last season's total of 36.6 million bales.

TABLE II-14. COTTON SUPPLIES, 1951-55

SUPPLY	1951/2	1952/3	1953/4	1954/5	1955/6 (Preliminary)
	..... *Million bales*				
Carry-in August 1. . Total .	11.8	15.0	17.1	20.2	22.0
Production U.S.A. .	15.1	15.2	16.4	13.6	14.5
Other	21.3	21.7	22.9	24.9	[1]25
Total supplies . . .	48.2	51.9	56.4	58.7	[1]61
Consumption total .	33.1	34.6	36.0	36.6	[1]37
Carry-over July 31 . U.S.A.	2.8	5.6	9.7	11.2	[1]14
Other	12.2	11.5	10.5	10.8	[1]10
Exports : U.S.A.	5.5	3.0	3.8	3.4	[1]2
Other	6.6	8.7	9.2	8.6	...
Total .	12.1	11.7	13.0	12.0	...

[1]Estimate.

Source : International Cotton Advisory Committee, United States Department of Agriculture.

During the first half of 1955/56 a major fall in the export prices of non-U.S. growths took place in anticipation of the release at competitive prices of a million bales of CCC stocks. By December discounts for these growths varied up to 20 percent and more. Prices of longer staple cottons as well as those of 15/16 inch or less (comparable to the U.S. cotton to be sold on bid by the CCC) were affected but to a rather smaller extent. Meanwhile cotton prices in the United States showed increased firmness with the heavy movement of cotton into CCC stocks and this tendency is continuing as the supply of free cotton tightens. The actual sale of the million bales of CCC cotton began in January and was completed by the beginning of March at prices for Middling 15/16 inch as much as 23 percent below the official support level while prices of other growths, especially the longer staples, recovered some part or all of their earlier losses.

Exports from the United States up to mid-March were running at less than half last season's rate, and while some improvement may be expected as shipment of the million bales is completed and as commitments under PL 480 are implemented, total exports are likely to be substantially below last season's. On the other hand, exports from other countries, except Brazil and Turkey, have increased and it is expected that most of the new crop cotton available for export will be shipped this season. In total, world trade may be 1 million bales less than last season.

However, the trend of prices and trade in the near future will depend mainly on the implementation of an extended program, announced in March, for the offer of CCC cotton stocks of all staples and grades at competitive prices, for delivery next season. This, together with the initial program of one million bales, is a major development in the U.S. export policy intended to re-establish the traditional share of U.S. cotton in world markets. By mid-July 3 million bales of CCC stocks had been disposed of at prices until mid-May in the region of 27.50 cents per pound for Middling 15/16 inch staples ; but thereafter in accordance with new legislation providing for the acceptance of prices ranging down to 25.5 cents depending on the competitive situation. Such prices will be effective for exports of manufactured as well as raw cotton.

The extent to which the drop in prices will discourage production cannot be readily gauged. The support level for the 1956/57 upland crop in the United States has been reduced from 90 to 82½ percent of parity - the support price for Middling 15/16 inch staple falling from 33.50 to 31.10 cents per pound, a relatively small reduction. Acreage restrictions are the severest which legislation permits. Elsewhere, prices have dropped more steeply and may provide a greater disincentive, particularly among the cotton producing countries of Central and South America and the man-made fiber producers in Europe.

Wool

Since the resumption of auctions in the Southern Dominions in 1956, wool markets have remained firm at a little above quotations in the first half of the season. Labor troubles in Australia may have contributed to this firmness.

The current world clip is estimated at the record figure of 1.2 million metric tons (clean basis). Available supplies exceed this quantity by over 40,000 tons of old clip wool in South America at the beginning of this season and some 30,000 tons of U.S. wool in the hands of the CCC. Since the introduction of the new exchange regulations in Argentina in December 1955, market activity has increased and it appears that a good part of the old clip wools, in Argentina at any rate, may be cleared. About 20 percent of the CCC stocks of U.S. wool were sold in the six months from November 1955.

Although more wool is being offered this season than ever before, consumption is also at a comparatively high level. It is estimated that 1.2 million tons of wool (clean basis) have been consumed in 1955, an increase of 3 percent over the previous year. The proportional increase in the output of wool textiles has been somewhat greater, as there has been a relatively large expansion in the use of materials other than virgin wool. Following the fall in wool prices in September, however, the proportion of virgin wool textiles has risen again.

Jute

Prices have been firm in 1955/56, partly due to the maintenance in Pakistan of last season's minimum export price schedule on a sterling basis, notwithstanding devaluation, and partly

to the slowness of arrivals in upcountry markets. Moreover, Indian and overseas mills appear to have bought rather heavily in the first half of the 1955/56 season; purchases may therefore slacken off in the closing months of the season.

Production probably exceeded 2 million tons in 1955/56, of which some 1.3 million tons in Pakistan and 900 thousand (including kenaf) in India. Local mill consumption plus exports totaled 1.83 million tons in 1954/55, but entailed some drawing down of consumer stocks. Requirements in 1955/56 may be larger and are unlikely to leave an appreciable supply in producing countries unsold at the end of the season. The outlook for 1956/57 is more uncertain. In Pakistan sowings are believed to have increased by 25 percent, but floods are reported to have affected the outturn. Trade circles expect a Pakistani crop of 1.45 million tons and an Indian crop of 800 thousand tons. On the other hand, jute goods markets, although increasingly competitive, are unlikely to show any very marked expansion. Calcutta has not shipped the whole of its increased output and activity in Dundee has slackened lately. With stocks replenished, this is likely to reflect itself in the demand for raw jute by the mills. It may well be, therefore, that the supply/demand balance in the 1956/57 season will exert some pressure on prices.

Hard Fibers

Hard fiber production reached a record level of 740 thousand metric tons in 1955, but it was outstripped by a rise in offtake. Most of the increase in output was in sisal, which totaled about 450 thousand tons, with all the major producers cutting more fiber than in the previous year. Slightly more abaca was produced in the Philippines, but some of the Central American estates are being closed down. The output of henequen in Yucatan dropped sharply. The local cordage mills have, however, been kept working to capacity by drawing on stocks accumulated in previous years. This year they have contracted for the entire output in advance.

In view of the buoyant demand which reflects among other things larger grain and hay crops, and increased shipbuilding and construction activity, stocks of hard fiber in producing countries were virtually cleared. In Brazil and Mexico, monetary factors gave a special impetus to supply stock clearance. Internationally, prices of hard fibers have been rather firm in recent months, but any marked tendency of prices to rise is being strongly resisted by buyers. Prospects are for a larger output of hard fibers.

Rubber

World consumption of natural and synthetic rubber reached a record in 1955 and was 15 percent higher than in the previous year. Almost every rubber manufacturing country increased its consumption. The expansion was greatest (24 percent) in the United States, where consumption had been at a relatively low level in the preceding year. The upswing in demand began in the third quarter of 1954, but, in view of its more competitive price, the demand for natural rubber had already been rising for some time, while that for synthetic rubber had been declining.

The price of natural rubber increased rapidly during 1955, reaching a maximum in September. The average for the year was 70 percent higher than in 1954. In spite of these very high prices, world production of natural rubber, although reaching a peak volume, expanded by only 6 percent, the response being greater among the small holders than on the estates.

The advance in natural rubber prices eventually took them to a point where they were about double that of synthetic rubber, production of which expanded by 52 percent in 1955 to near the limit of present capacity. A significant feature of the rise in synthetic rubber consumption was the threefold increase in United States exports and, consequently, the very sharp expansion in the small quantities consumed in the non-producing countries.

In the early months of 1956, some recession in demand became evident following cutbacks in automobile output in the United States and the United Kingdom. Moreover, the increasing supply of lower-priced synthetic rubber, and the prospect of capacity under construction in Europe and North America coming into use further ahead, were exercising a strong influence on the natural rubber market. Prices consequently declined in the first half of 1956, though they remained higher than those of equivalent synthetic rubbers.

TABLE II-15. PRODUCTION, CONSUMPTION AND PRICES OF RUBBER, NATURAL AND SYNTHETIC

	1950	1951	1952	1953	1954	1955	
	Thousand metric tons						
World Consumption							
Natural rubber	1 732	1 521	1 478	1 656	1 793	1 867	
Synthetic rubber	589	826	899	887	752	1 074	
Total	2 321	2 347	2 377	2 543	2 545	2 941	
Percentage natural	75	65	62	65	70	64	
World Production							
Natural rubber	1 890	1 915	1 819	1 756	1 832	1 941	
Synthetic rubber	544	923	892	951	727	1 102	
Total	2 434	2 838	2 711	2 707	2 559	3 043	
Excess Production of Natural Rubber over Consumption	158	394	341	100	39	74	
	Equivalent U.S. cents/lb						March 1956
Rubber Prices							
Natural rubber, Singapore No. 1 R.S.S.	35.34	55.27	31.39	22.03	21.99	37.30	31.69
Synthetic rubber, U.S.A., G-R-S	19	25	23½	23	23	23	...

Source : International Rubber Study Group.

Forest Products

The steady increase of industrial and other economic activity continued to raise the demand for most forest products in 1955. New record levels were reached in world output of *roundwood*, which increased by about 5 percent in 1955, chiefly in the industrial categories. The heavy demand by sawmills and pulpmills, in North America, Europe and the U.S.S.R. in particular, was the main factor accounting for this rise in the total world output of roundwood. For 1956, although the general outlook both as regards consumption and trade are rather favorable, world roundwood production is likely to show a smaller increase. In North America and Europe the leveling off of general industrial activity and the relatively high level of stocks of sawnwood at the beginning of 1956 have already led to a certain decline in the requirements of new sawlog supplies. The demand for pulpwood on the other hand is likely to show a further increase in 1956, which may therefore be a new record year for output of industrial roundwood.

Production and trade in *sawnwood* was generally higher than in 1954 and values recovered markedly from the slump years of 1952 and 1953. The considerable slowing down of activity on the European sawnwood market at the turn of the year, which resulted from stockpiling in the course of 1955 in some of the principal importing countries, was not generally expected to influence the volume of world trade in 1956 to any significant degree, and the total consumption in Europe of sawnwood is expected to be fully maintained. The general slackness of the European market at the beginning of 1956 seems to have slightly reduced the prices of most categories of European sawnwood, and may help to consolidate the position of sawnwood among the consumers who had, in many instances, been turning away from wood because of its high cost.

The present high level of ocean freights seems to prevent any great increase in shipments of sawnwood from North America to Europe, and may also be influencing shipments to Europe from other regions. In North America the level of demand for sawnwood was generally ex-

TABLE II-16. PRODUCTION AND TRADE IN FOREST PRODUCTS

PRODUCT		1953	1954	1955
		... *Million cubic meters* ...		
Round-wood	Production .	1 450	1 506	1 575
	Exports . .	17	19	23
Sawn-wood	Production .	269	270	284
	Exports . .	27	30	34
Plywood	Production .	8	9	10
	Exports . .	1/2	1	1
		... *Million metric tons* ...		
Wood pulp	Production .	38	42	46
	Exports . .	6	7	7
Newsprint	Production .	10	11	12
	Exports . .	6	6	7
Other paper and paper-board	Production .	38	41	45
	Exports . .	2	3	3

pected to be maintained in 1956 while in other regions certain gains in consumption were envisaged over the 1955 level.

The steady and firm demand for *wood pulp and pulp products* throughout 1955 has already continued well into the present year, and no significant changes in the marked upward trend of consumption are in view. Increased output in already operating industries, and new pulp and paper capacity to be installed in the course of 1956, are generally estimated to meet adequately the growing world demand for these commodities, particularly of newsprint, for which small temporary shortages were felt on the world market in 1955.

The consumption of most forest products is thus rapidly expanding in many parts of the world, and great progress is being made in the utilization of hitherto unexploited forest areas, and in the commercial introduction of new timber species. In Europe, however, relatively high costs continue to prevent any increase in the relative rate of sawnwood consumption and tend to encourage the utilization of wood substitute materials, including various pulp products, notably in building and packaging. One of the most recent important developments in meeting the steadily growing demand for wood, and at the same time improving the rational utilization of wood as raw material, is the rapid growth of industries producing an ever increasing variety of different resin-bonded particle boards.

PRICES AND THE FARMER

Agricultural Incomes

Farm incomes appear to have declined during 1954 and 1955 or, at best, to have made only very limited gains, in contrast to the rising trend of income in most other sectors of the economy. This downward trend mainly resulted from the movement of prices, and the few exceptions to this tendency, e.g., Italy and Japan, were generally in countries where there was a marked increase in the volume of production. The limited gains in these countries, however, were more than offset by the relatively sharp falls in the United States and a number of important European countries.

Certain types of farming, e.g., dairying in Australia, have been more affected by adverse price movements than have others, and in a number of countries small farms have lost ground by comparison with larger farms. Per caput incomes have not declined as much as global farm income, owing to the continuing decline in most countries in the farm population, including farm workers.

In the United States, farmers' realized net incomes in 1955 are estimated at 9 percent lower than in 1954. There was an increase in the volume of production and the decline is attributable to lower prices of farm products, together with a slight increase in farm expenses. Because of the rapid exodus from the land (Table II-17), farm incomes on a per caput basis in 1955 were only 6 percent lower than in 1954, and 12 percent lower than the postwar peak in 1951. Present forecasts are that incomes in 1956 will again decline. The decline in incomes of farmers in the United States is in contrast with an increase of 4 percent in the per caput non-farm income.

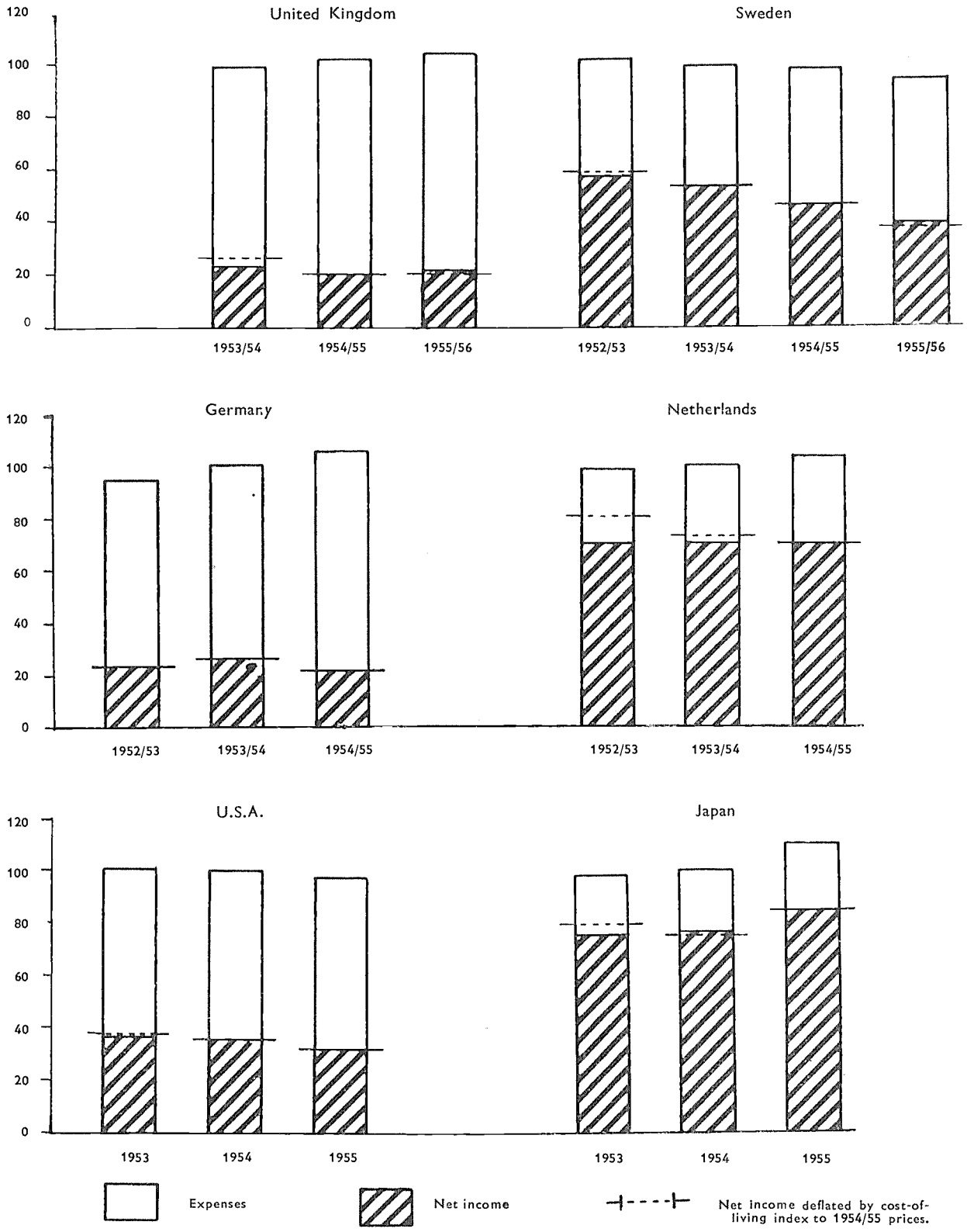
TABLE II-17. FARM AND NON-FARM POPULATION IN THE U.S.A.

YEAR	Farm Population	Non-Farm Population	Farm as % of Non-Farm
	..... *Thousands*		
1936-39 average . . .	31 206	98 100	32
1946	26 483	114 906	23
1951	24 160	130 200	19
1955	22 108	143 000	15

Source: U.S.D.A.

FIGURE II-9. Gross Agricultural Income, Expenses and Net Income

(Index 1953/54 = 100)



In Canada the farm cash income in 1955 was slightly less than in 1954, but higher inventories more than offset a slight increase in operating expenses and depreciation, resulting in an increase in total net income.

Full data are not yet available for Oceania, but it seems probable that farmers' incomes were fairly stable, comparing 1955 with 1954. The gross receipts of agriculture in Australia were affected by the fall in prices of high quality wool, wheat and dairy products during 1955, but the decline in prices was offset by a rise in the general volume of production. In New Zealand, prices received by farmers have remained fairly stable, while the rising trend in output continued. In both countries expenses are understood to have remained fairly steady, and it is thus probable that there was no great change in farm incomes from the preceding year.

For Europe, a general feature was a fairly substantial increase in total expenses between 1954 and 1955, but the effect on incomes was not uniform, as a result of variations in output due to the weather, and different approaches to price and income control, described in a later section of this chapter. In the United Kingdom the strongest influence on income during 1954/55 was the bad weather, which reversed the rising trend in output for the first time since the early postwar years. Despite the higher prices agreed in recent years, the gross farm income in 1954/55 rose only slightly in comparison with 1953/54. Expenses continued to rise, and the net farm income thus fell by about 15 percent. In Sweden similar factors have operated and net incomes fell by 12 percent. Preliminary estimates suggest that in 1955/56 the decline may have continued in Sweden, but have been reversed in the United Kingdom.

In Germany and the Netherlands the sales value of agricultural output increased between 1953/54 and 1954/55. In Germany, however, expenses rose even faster and net income declined by nearly 20 percent, while in the Netherlands expenses rose by about the same amount, as the value of agricultural production and net income remained stable. In Italy, the gross saleable value of agricultural output increased by about 6 percent. This increase was almost entirely due to a rise in the volume of output, as prices received by farmers remained stationary. Expenses also rose, but the net return to agriculture was about 5 percent higher in 1955 than in 1954.

It is perhaps worth noting that as a rule where expenses have increased in European countries, there is some evidence that this was due in part to a rise in volume of inputs, and only partly to an increase in the price of farm requisites. Thus the tendency noted in last year's issue of this report toward increasing inputs and intensity of production seems to have been maintained.

In Africa there are data for only two countries - the Union of South Africa and Southern Rhodesia. In Southern Rhodesia, the gross income of European farmers increased by about 3 percent, whereas operating expenditure increased by about 6 percent. The realized net income of farm operators declined very slightly. In the Union of South Africa the net income of agriculture fell slightly between 1953/54 and 1954/55 ; no information is available on the value of output or on expenses.

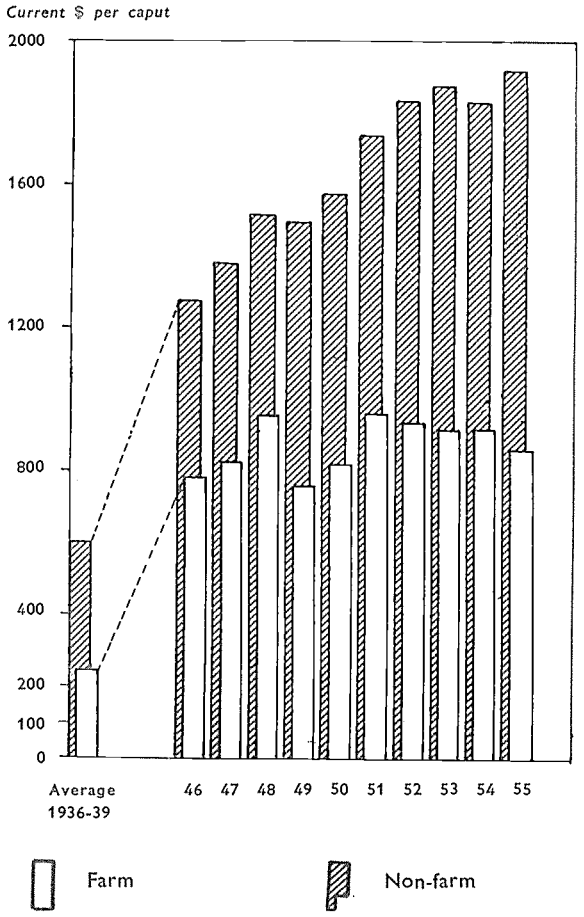
Besides these areas, the only country for which information is available is Japan, where farm incomes were higher in 1955/56 (year ending in March) than in 1954/55. Cash income increased by about 14 percent, mainly due to bumper crops, especially of rice. Farm expenses were up by about 5 percent and the net gain in income received by farm operators from agricultural and non-agricultural occupations was about 7 percent.

The Relative Level of Agricultural Income

Previous issues of this report have published estimates, based on population projections and global incomes by industrial origin, of per caput income in agriculture compared with other occupations. These estimates only go to 1954 and are admittedly weak, but they remain the best possible internationally comparable indicator for the purpose.

In only a few countries are the trends sufficiently pronounced to exceed the possibilities of error in the data. Nevertheless, there can be small doubt that, in, e. g., Canada, Japan, the United Kingdom, the United States and, possibly, Norway, people dependent on agriculture have become steadily less prosperous in relation to other sectors of the population than they were at the peak of the postwar period. At the same time, no countries show evidence of persistent rising trends. So far as this rather scanty evidence goes, it seems to lead to the conclusion that, although on the whole actual incomes in agriculture have not fallen very

FIGURE II-10. Farm and Non-farm Incomes in the U.S.A.



Source: U.S.D.A.

greatly, the agricultural sector of the population has lost ground heavily by comparison with most others. Figure II-10 shows the movement which has occurred over a number of years in the United States.

Prices Paid and Received by Farmers

Statistical information about relative price movements for farmers is scanty, but in no country where data are available has there been a trend in favor of farmers. In about half, the relationship between prices paid and received by farmers has remained stable, while in the remainder it has deteriorated, though at varying rates.

The price squeeze was strongest in the United States, where the ratio fell from equality with the 1935-39 level in the early part of 1955 to 6 percent below it by the end of the year. In the early months of 1956 there was a slight recovery, both in prices received by farmers and in the relationship with prices paid ; but no further substantial changes in price ratios are anticipated in the remainder of 1956. In Canada the ratio of prices paid and received by farmers fell from 3 percent above the 1935-39 average level in January 1954 to 7 percent below it by January 1956.

Price movements in Europe were irregular and few countries show evidence of strong trends. In Austria and the Netherlands, the ratio was less favorable to farmers in 1955 than in 1954, while in Switzerland there was little change, and in Norway a slight improvement. In Germany, though there was not much difference in average between 1954 and 1955, there was an upward trend during 1955 which resulted in price ratios being more favorable by the first quarter of 1956 than at any time since 1950. There was a perceptible drift downward in the ratio in Australia, while in Japan price relatives did not alter much. Elsewhere there are no published data.

Farm prices of arable crops reached a fairly definite peak in the years around 1952, both in countries where agricultural production is mainly for domestic consumption, as in Sweden, the United Kingdom and Germany, and in exporting countries, such as the United States and Australia. The subsequent decline started rather later in Europe than in the exporting countries and it affected nearly all crops. Of the cereals, wheat appears to have held its price best, though in Sweden, Germany and the Netherlands, sugar beet is gradually becoming relatively higher priced than other crops, in line with a tendency to rely increasingly on domestic supplies.

For livestock, there appears to be a well-marked difference between the European countries and the United States and Australia. In most countries of Europe the trend in livestock prices has continued upwards, with relatively few exceptions, e.g., eggs in the United Kingdom or pigs in the Netherlands. In the United States, on the other hand, livestock prices, like those for crops, have declined from their peak 1951 or 1952 level. The fall was generally more rapid for cattle than, for example, milk and pigs. In Australia, prices of livestock products rose quickly in the few years to 1952 or 1953, but have since shown no very definite trend.

TABLE II-18. PRICES RECEIVED AND PAID BY FARMERS AND RATIO IN REPRESENTATIVE COUNTRIES

COUNTRY R - Price Received P - Price Paid Ra - Ratio R/P	1954				1955				1956
	I	II	III	IV	I	II	III	IV	I
	Indices 1952/53 = 100								
Australia									
R	98	96	95	91	94	94	88	...	...
P	101	102	102	102	103	104	104	...	...
Ra.	97	94	93	89	91	90	85	...	...
Canada									
R	91	91	90	85	86	88	87	84	83
P	102	105	105	...	102	105	106	...	103
Ra.	89	87	85	...	84	84	82	...	81
Finland									
R	98	98	97	98	103	109	109	115	124
P	102	102	100	101	102	103	101	101	101
Ra.	96	96	97	97	101	106	108	114	123
Western Germany									
R	100	101	102	100	101	102	105	107	111
P	100	99	99	100	102	100	99	100	101
Ra.	100	102	103	100	98	101	105	107	111
Japan									
R	103	103	103	111	...	110	108	108	106
P	107	106	105	106	...	104	103	103	102
Ra.	105	106	104	104	...	106	105	105	104
Netherlands									
R	103	100	99	105	98	90	93	106	102
P	101	102	101	106	108	106	104	104	107
Ra.	101	98	98	99	91	85	89	102	95
United States									
R	94	93	91	89	89	90	86	83	83
P	100	100	99	99	100	100	99	99	99
Ra.	94	93	92	90	89	90	87	84	84

The most common feature about farm expenses, though it does not affect the return to agriculture considered as a sector of the economy, has been the rise in agricultural wages and the improvements in conditions of employment. Nevertheless, agricultural wages are still generally among the lowest paid in any industry.

The prices of some other important input items, such as tractor fuel and maintenance and repairs of machinery and buildings, have also risen in nearly all countries. The movement in prices of fertilizers and processed feedingstuffs, however, has shown no consistent trend.

Many input prices are closely affected by government action, e.g., through taxes on fuel, or turnover taxes on requisites, and changes in their prices have frequently been used as a means of encouraging their use as a means of stimulating production. Latterly, however, there are signs of a growing tendency, as in Germany, to reduce input prices, sometimes by means of subsidies, as a means of supporting farm incomes. In this way it is possible to assist farm incomes and productivity without increasing the cost of food to the consumer.

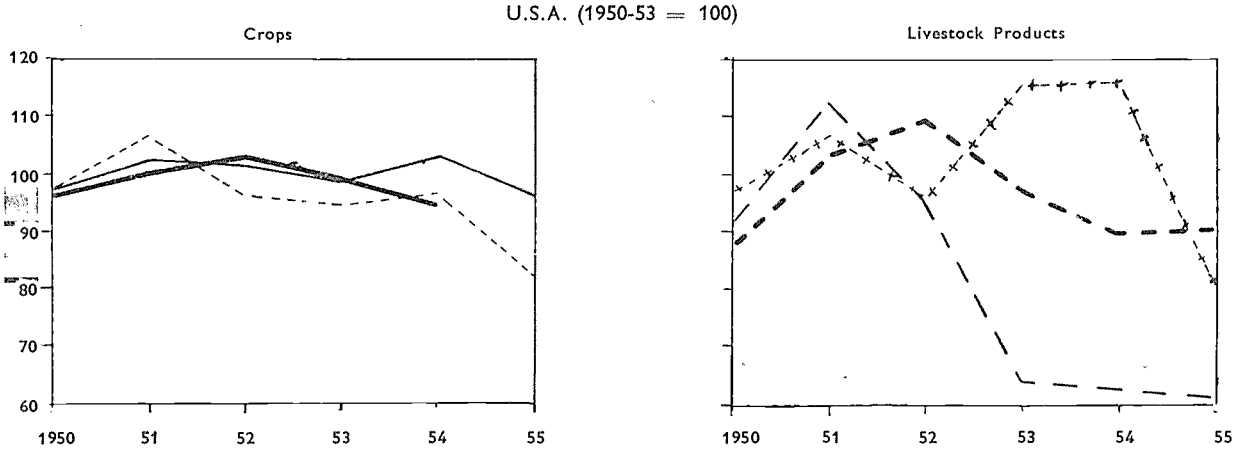
PRICES AND THE CONSUMER

Retail Food Prices

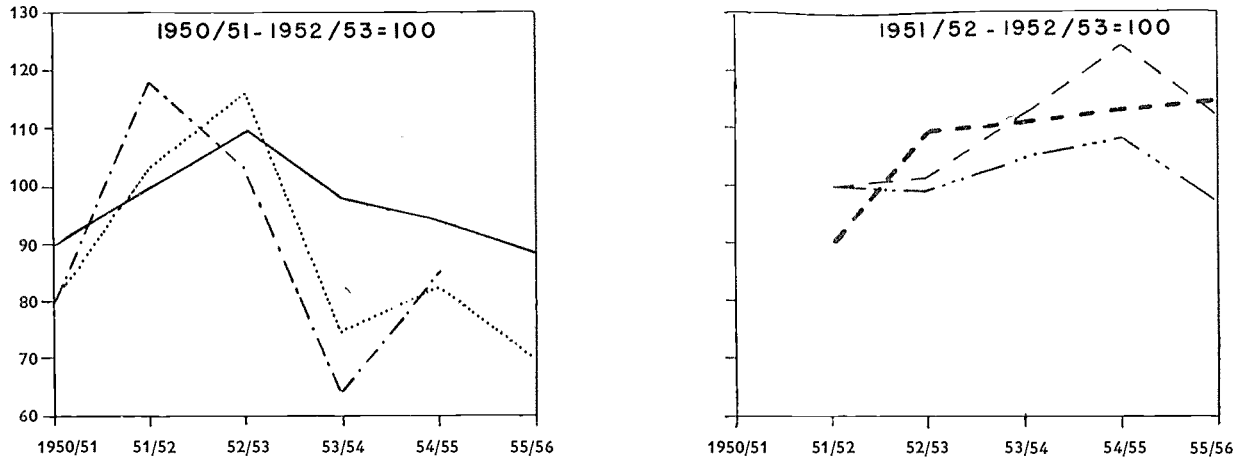
Despite the generally easier supply situation, often reflected in lower farm prices, there has not so far been any very pronounced change

FIGURE II-11. Farm Prices of Certain Commodities

U.S.A. (1950-53 = 100)



Australia



Sweden (1950-53 = 100)

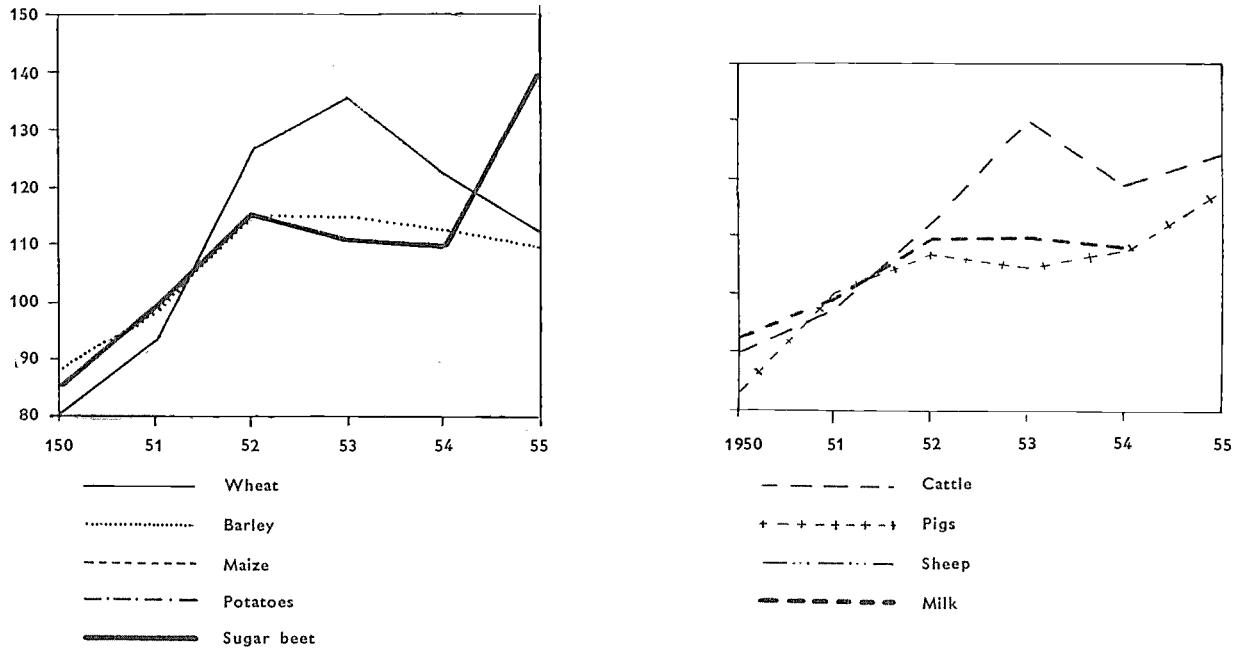
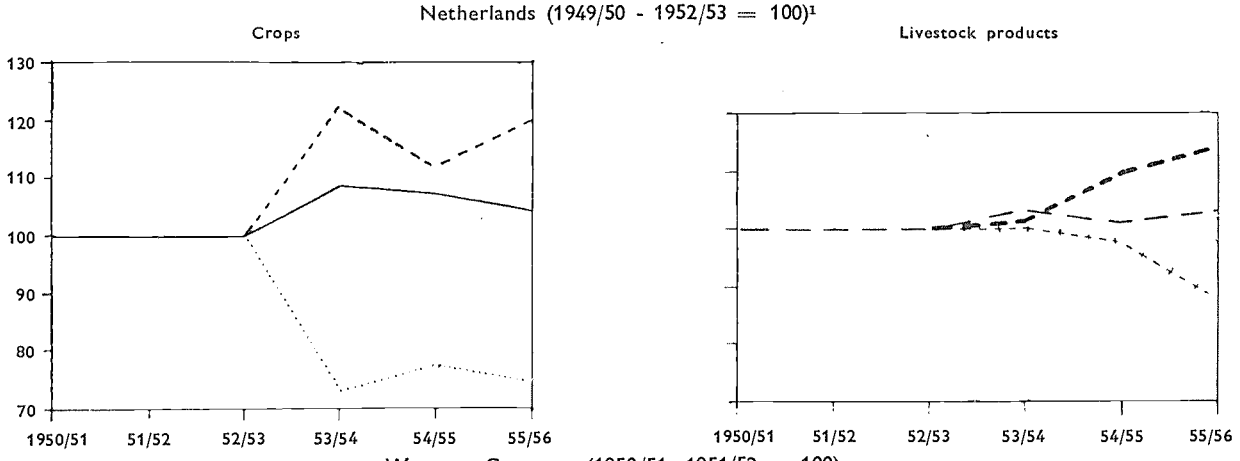
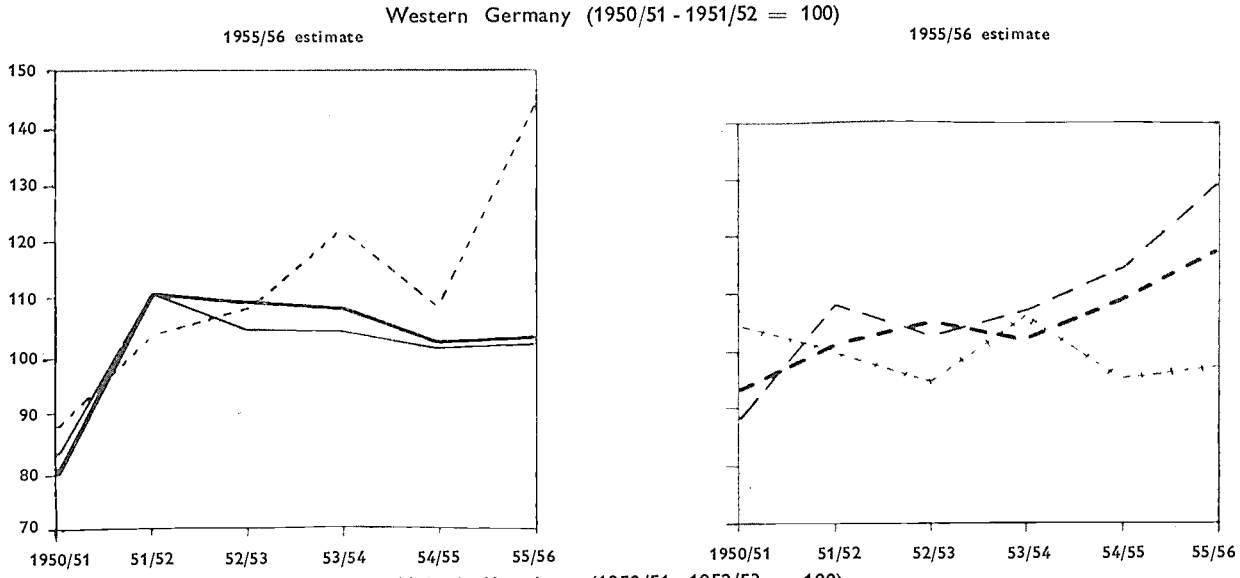


FIGURE II-11. Farm Prices of Certain Commodities (*concluded*)

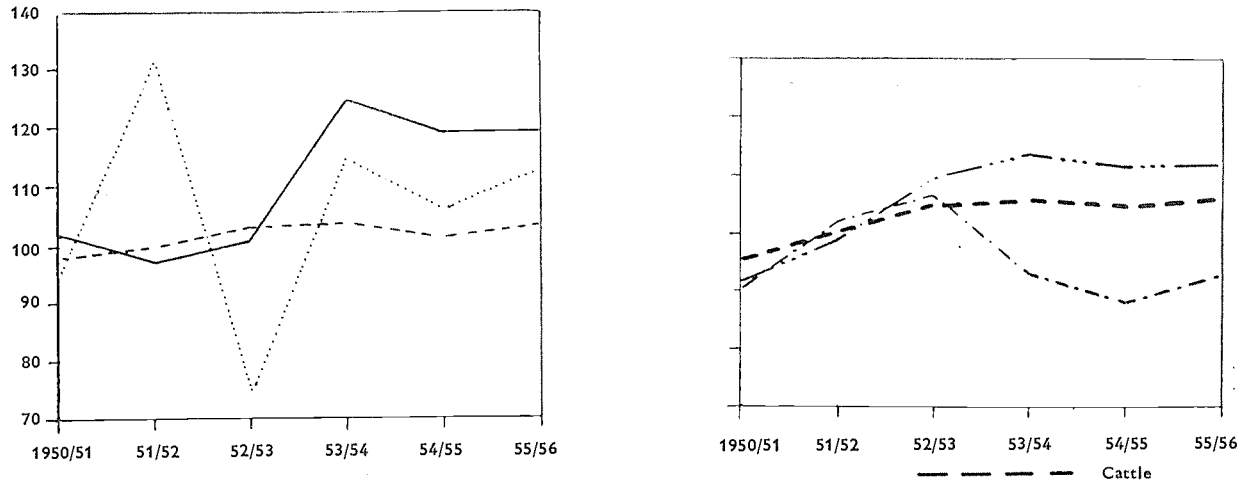
Netherlands (1949/50 - 1952/53 = 100)[1]



Western Germany (1950/51 - 1951/52 = 100)



United Kingdom (1950/51 - 1952/53 = 100)



Wheat
Barley
Sugar beet
Rye
Cattle
Pigs
Eggs
Milk (liquid)
Fat stock

[1]Data not available for individual years of base period.

in retail food prices, either absolutely or in relation to the general retail price level.

Retail food prices have fallen slightly in some cases, but much less than farm prices. In most countries retail prices have been fairly stable, though they have sometimes continued to rise because of changed policies, while in a few countries inflation still persists. Where retail food prices have changed in their relation with general retail prices, the movement has usually been downward, but it has not been very marked (Figure II-12).

In the United States, average food prices in 1955 were about 2 percent lower than in 1954, while farm prices were down by 5 percent. The total fall in food prices since they reached a peak in 1952 has only been about 4 percent, compared with a decline in farm prices of about 20 percent. In Canada retail food prices have changed very little since 1953, though there was a slight decline in the first quarter of 1956. In both these countries general retail prices have remained stable, so that food prices have fallen slightly in relation to general prices, though U.S. retail food prices began to rise again in March 1956.

The European countries fall into three groups. First, there are countries like Denmark and the United Kingdom, where there has been a fairly pronounced and continuing rise in general retail prices and food prices have increased even faster. Second, there are countries with only a slow increase in prices, with food prices keeping pace with the others; into this group fall Italy, Sweden, Spain and the Netherlands. Third, in most of the remaining countries prices have remained more or less stable. It is difficult to see any general set of causes for this pattern, developments in single countries resulting from the interplay of specific price policies and general economic policies. Undoubtedly in the first group much must be ascribed to the influence of changing food price policies, e.g., in the United Kingdom, where food subsidies have been reduced. At any rate, it seems clear that in the United Kingdom and Denmark the relationship between food and other prices is undergoing a change, at the end of which food prices will be relatively much higher than they were in the years 1950-53. In the other countries the stability of this relationship so far appears to have been unaltered.

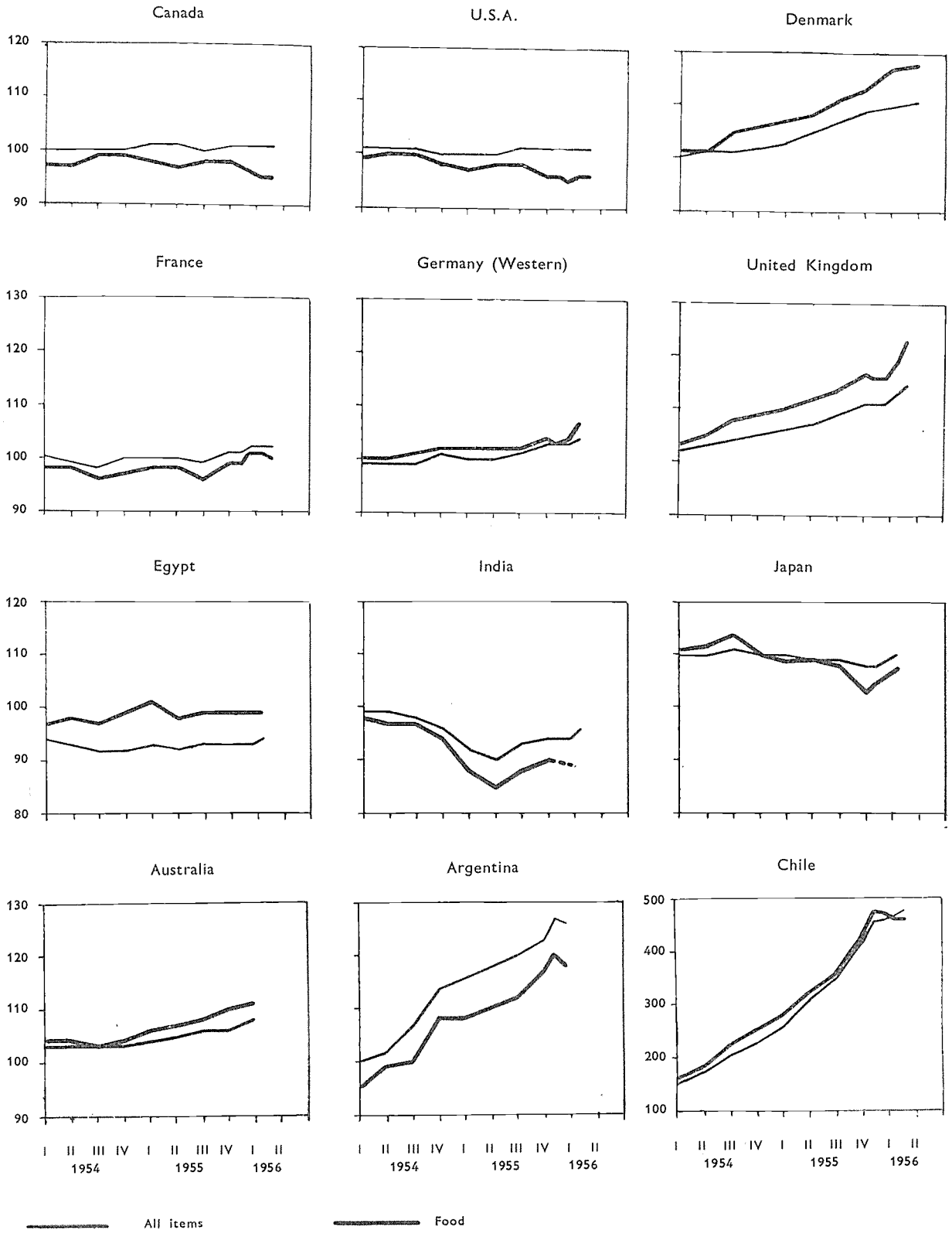
Outside Europe, also, government price and supply policies have mainly determined whether the impact of larger supplies or surpluses has been felt on retail prices. There are, however, very few countries where food prices have become relatively higher than other prices, while there are some countries where food prices have become relatively lower. In the Near East, Turkey and Iran are examples of countries where food prices have increased less than others in a general inflationary price increase. In Egypt and Iraq prices and price relationships have remained stable, while in Lebanon they have varied irregularly without a definite trend. In the Far East, as in Japan, India and Pakistan, there appears to have been a slight downward tendency of prices in general, with food prices leading the way, though from the second half of 1955 in India and Pakistan, and somewhat later in Japan, prices showed signs of recovery. This downward tendency was primarily due to the decline in bread grain and rice prices. In some other Far Eastern countries, such as Ceylon and the Philippines, where consumer prices of some basic foods are insulated from international prices, consumers do not yet appear to have benefited to any large extent from lower food prices.

In Latin America, in those countries with a structural excess of food demand over supplies, and the impossibility of sufficient imports, because of shortage of foreign exchange, the rapid inflation continued, as in Bolivia, Chile and, to a lesser extent, in Brazil. In Chile a wage-price freeze was decreed at the beginning of 1956 in an attempt to stabilize the economy. Neither in these countries, nor in those with more stable prices, has there been, however, any perceptible change in food prices relative to other prices over the last four years, with the possible exception of Argentina. In this country, which is in a somewhat different position, as a food exporting country, the average food price level for 1954 was about 5 percent lower, relative to other prices, than in 1953, and this relative decline was accentuated during 1955.

These rather minor changes in food prices relative to other prices, have been insufficient to alter the trends in consumer expenditure commented on in last year's report. In most countries there is a great degree of stability in expenditure on food as a percentage of total personal expenditure, though there seems to be some rising tendency in the United Kingdom, Denmark and possibly Ireland, where food prices have increased relative to the cost of living.

FIGURE II-12. Indices of Retail Prices

(1952/53 = 100)



In Japan, on the other hand, where food prices have fallen, the percentage of expenditure on food fell very sharply for a number of years, though there are signs that this trend has now been checked.

Marketing Margins

The fact that, where farm and international prices have fallen, they have been reflected only partially, if at all, in retail food prices, indicates that marketing costs have generally continued to increase. Only for the United States, however, are current data available from which this rise in marketing costs can be measured. For other countries very little new data are available beyond that published in the 1954 and 1955 issues of this report.

In the United States the marketing margin for the average family's "market basket" of farm foods increased from $564 in the first quarter of 1955 to $580 in the first quarter of 1956, an increase of about 3 percent (Table II-19). Over the same period the farm value of the market basket fell by as much as 10 percent, but the retail cost fell by only 2 percent.

Prices of meat products were the main influence on these changes, farm prices falling by as much as 27 percent, while the marketing margin rose by 10 percent. The fall in retail prices of meat products was thus only 12 percent.

The marketing margin measures the cost of marketing a fixed quantity of food and is influenced chiefly by changes in wages, transport charges and profits. The total food marketing bill paid by the United States consumer has, however, increased even faster, as it reflects also increased services to the consumer and the larger volume of food marketed. It has been estimated that in the period 1940-1955 the marketing bill increased from $9 thousand million to $32 thousand million. Of this $23 thousand million increase, the rise in costs and profits accounted for $13 thousand million and the added volume handled for $4 thousand million, while the remaining $6 thousand million, or one quarter, represents payments for additional or improved marketing services, including increased use of restaurants. In other words, the increased marketing bill the United States consumer has to pay is partly recompensed by better and more up-to-date services in packaging, processing, etc., provided in large part in response to the demand of consumers with increased incomes. This is probably also true, though to a smaller extent, in other countries.

TABLE II-19. UNITED STATES: COST OF MARKET BASKET OF FARM FOODS,[1] JANUARY TO MARCH 1955 AND 1956

	All Products		Meat Products	
	1955	1956	1955	1956
	..... *U.S. dollars*			
Retail Cost	974	949	250	221
Farm Value.	410	369	144	105
Marketing Margin . . .	564	580	106	117

[1]Average quantities of farm food products purchased per wage-earner and clerical-worker family in 1952.

FOOD CONSUMPTION LEVELS

In contrast with the more rapid changes from year to year in the earlier postwar period, the levels and patterns of food consumption in all regions and in most countries have become much more stable, reflecting the substantial and steady gains in food output recorded since the low levels of the immediate postwar period.

In the more advanced countries, especially those in which the calorie requirements of nearly all sections of the population are fully met, progress in recent years has concentrated on quality and variety of the diet, especially on more livestock products and other protective foods, including fruit and vegetables. A similar tendency is noticeable in the case of highly processed foodstuffs of a luxury or semi-luxury nature. Increasing mastery of techniques of food preservation is making possible a fuller utilization throughout the year of many seasonal and highly perishable food products. Technical developments in the food processing and packing industries have made it possible to provide food products to the consumer in an abundant variety of new and more hygienic forms. In some cases, as discussed above, these

additional services to the consumer have the effect of maintaining or increasing food marketing costs.

In the less developed regions, especially the Far East, improvements in the diet have largely reflected an increased calorie intake, chiefly through larger consumption of staple foods like rice, other cereals and starchy roots. A steady increase in the consumption of sugar is also noticeable. In some of these countries, there has also been a tendency to increase the consumption of livestock products and fish. However, such changes are difficult to measure or even detect by food balance sheet methods. Comprehensive and repeated household food consumption surveys are needed to disclose significant changes both in the levels and quality of food consumption in a country as a whole, or among the different sections of the population. Only in a very few countries, such as Japan, are surveys of this kind being regularly undertaken.

It would appear that the main trends in food consumption referred to above continued in 1955. With full employment accompanied by rising income in most countries, demand for foodstuffs was sustained. Larger food supplies were available from increased food production in 1955 compared with the previous year. Various special measures taken to dispose of food from accumulated surpluses also helped to provide some foods to some needy groups who could not otherwise have obtained them. On the other hand, the larger food supplies were rarely reflected in declines in retail prices, while fiscal policies aimed at reducing inflationary pressure and countering balance of payments difficulties, also tended to restrict the purchasing power available for consumption from higher money income. In these circumstances, changes in the pattern of consumption appear to have reflected changes in the retail price relationships between different foods, with few significant changes in national average calorie levels (Annex Table 11).

For example, larger rice production and lower rice prices were probably responsible generally for a somewhat higher per caput consumption of rice, especially in the rice-importing countries in the Far East, and thus facilitated a reduction in rice stocks held by Asian exporters by the end of 1955. Some countries, previously relying heavily on supplementary wheat imports to meet the earlier rice shortage, tended to replace wheat by rice to some extent. It is difficult to judge how far this reversed movement will be carried in the future. World stocks of wheat and coarse grains remain very large, and ample supplies have been offered on the world market, sometimes on terms particularly favorable to importers. Moreover, in spite of lower rice prices, it must be borne in mind that rice is still nearly twice as expensive relative to wheat and other cereals on import markets as it was before the war. For these reasons, the place of wheat in the diet in most of the main rice-consuming countries still remains much more important than in the prewar period.

Per caput meat consumption in the United States in 1955 was the highest recorded during the last half century. In most countries of Northwestern Europe, consumption has also continued to rise. From 1953 to 1954, for example, the increase was of the order of 3 kilograms in Western Germany and 5 kilograms in the United Kingdom, but consumption as a rule still fell short of the prewar level. From 1954 to 1955 the increase continued in these countries though at a slower rate. In most of the other important meat-consuming countries consumption also increased. In Canada, for instance, meat consumption in 1954/55 was about 4 kilograms higher than a year earlier, while in Argentina, where a slight decrease had taken place since 1952, the prewar level was regained.

The consumption of milk and dairy products has continued to increase at a slow pace in most European countries, equaling and in many cases surpassing prewar levels. Consumption of liquid milk, however, remains more or less stationary, the greater part of the increased production being used for the manufacture of dairy products. In the United States and Canada per caput consumption of milk and dairy products appears to be stabilized at a level higher than that of the prewar period. In most of the Far Eastern countries there is a slight upward trend in the average per caput consumption.

Consumption of butter in most European countries has tended to increase, although there are some indications that the trend toward a partial substitution of margarine still continues. In general it appears that the increase in consumption of other fats and oils exceeds that of butter, especially in the West European countries where consumption has risen by about 1 kilogram per caput since 1953/54.

AGRICULTURAL POLICY AND DEVELOPMENT PLANNING IN 1955/56

The continued accumulation of surplus stocks of some commodities and their effects on world trade and prices have caused some changes in agricultural policies during the year under review. The major new departure has been in the United States, where it has been becoming more and more apparent that surplus stocks will not be liquidated, under prevailing market conditions, by domestic consumption or exports while production of surplus commodities continues at its present level. Legislation has therefore been introduced for the curtailment of output beyond the restrictions already existing, notably on cotton and wheat. In some other countries, mainly in Western Europe, the lower world prices for some commodities have caused changes in farm price policies designed to adjust the pattern of output to the present situation and to improve the competitiveness of those countries' agricultures.

Elsewhere, however, a continued rapid expansion of agricultural production is still the chief need, and remains the primary aim of national policies. The growth of national planning as a major factor in the postwar development of agriculture was described in the 1955 issue of this report, and the year now under review was a particularly significant one in this field. It saw the completion of several of the most important of the postwar development plans and the preparation or beginning of new plans to follow up the progress made in the earlier ones.

While the chief aim of many of the new development plans is rapid industrialization, further substantial increases in agricultural production are also planned. In India, for instance, the success of the first five-year plan in raising agricultural production has enabled more emphasis to be placed on basic industries in the second plan. On the other hand, a number of countries at a rather earlier stage of economic development, such as some African territories, whose initial programs were concerned mainly with providing the foundations of future progress, in the form of basic public works such as transport facilities, are now able to pay more attention in their new plans to agriculture and other directly productive development.

Another noteworthy feature of the new agricultural development plans, especially in the Far East and Latin America, is the increasing recognition of the importance of orienting them toward the nutritional needs of the people. Even in those countries where agricultural plans have been operating for some years, the needs of the consumer were often not adequately taken into account.

The trend toward the centralized co-ordination of planning in different sectors has continued in 1955/56, and a number of new central planning bodies have been set up, or the existing ones re-organized, for example, in Brazil, Japan, Malaya, Pakistan and Syria. There is, on the other hand, little new progress to report on the regional or international co-ordination of planning. The Economic Commission for Asia and the Far East (ECAFE) has recently set up a working party on economic development and planning ; in November 1955 it held its first meeting, to which FAO contributed.

The main events in 1955/56 in the fields of agricultural policy and development planning in the different regions are discussed below.

North America

The main part of the new Agricultural Act of 1956 in the *United States* concerns the establishment of the so-called "Soil Bank" by means of two programs : the Acreage Reserve and the Conservation Reserve.

The Acreage Reserve Program is designed to meet the immediate need to reduce production of the four crops now most seriously in excess supply, i.e., wheat, cotton, maize and rice, as well as groundnuts and tobacco. During the next three crop years, farmers are voluntarily to reduce their acreage of these crops in return for compensation based on the potential yield of the retired acreage, in the form of certificates redeemable in cash or, for cereals only, in kind. Participation in the program will not affect the farmer's normal acreage allotment for future years, but he must agree not to graze or harvest any crop from the land put into reserve. It is hoped that a good part of the cost of this program (about $750 million annually) will be financed by commodities already owned and paid for by the government, which will be withdrawn from storage and turned over to farmers to use or sell, in payment for withdrawing the land from cultivation.

The Conservation Reserve Program is more long-term in nature. This program applies to all farm crops, and farmers are to contract voluntarily with the government to shift their cultivated land most in need of conservation into green manure crops, trees and water storage for from 3 to 10, or exceptionally, 15 years. This land is to be neither harvested nor grazed. In return the farmer is to receive from the government part of the cost of establishing the conservation use, as well as an annual subsidy to indemnify him for lost income until the reconditioned land again yields a return. The cost to the government of this program was estimated to be about $450 million annually.

It is hoped that stocks can be reduced to normal levels in three or four years if, under the Acreage Reserve Program, the acreage of wheat is reduced by some 4.9 million hectares (one fifth of the area now permitted), of cotton by 1.2 million hectares (one sixth), and of maize by 2 million hectares. In addition, by means of the Conservation Reserve, it is hoped to retire an additional 10 million hectares from production, thus securing on a longer-term basis a substantial reduction in the output of feed grains and other crops.

The success of these two programs in reducing stocks will, of course, depend on the extent to which farmers co-operate in them. Another factor, however, is the extent to which the reductions in acreage may be offset by rising yields, as were acreage allotments in the past. It is likely that the best land, not placed in reserve, may be cropped more intensively, so that yields from the restricted acreage will rise. If there were smaller participation than is hoped for, together with increased yields, it would be necessary to operate the Acreage Reserve Program for longer than is now intended. The provisions in the Act for reinforcing measures of surplus disposal were discussed earlier in this chapter.

An important question may turn out to be the level of United States agricultural output when the present large stocks have been brought down to normal levels and the Acreage Reserve Program terminated. It appears that under current production conditions, including existing price supports and with average weather, the potential agricultural output in the United States is likely to remain well above the optimum foreseeable demand, so that there is the danger of new surpluses arising after the present ones have been worked down. Thus it was recently estimated[2] that while total domestic and export demand for United States agricultural products might increase by 17 percent in the next ten years, agricultural production could be expanded by about 50 percent.

In *Canada*, although stocks of wheat and coarse grains remain large, no basic change in policy has been considered necessary. A major measure of assistance is, however, to be extended to farmers for the storage of wheat, for which facilities are limited and costs therefore high. The government will defray the cost of storage by the Wheat Board of stocks in excess of 178 million bushels at the end of the season. As end-of-season stocks of wheat are at present estimated to be likely to amount to about 580 million bushels, this subsidy will probably cost some $32 million in 1956.

Oceania

There have been no major changes in agricultural policy in Oceania during the course of 1955/56. In *Australia* the continued emphasis on higher production and exports was underlined by raising the 1957/58 production targets adopted in 1952, some of which had already been exceeded. The aim is now a 27 percent increase over the prewar level by 1957/1958. In the case of wheat, however, the Chairman of the Australian Wheat Board has advocated a policy of reduced production in view of the large stocks that have accumulated. Another change in Australia is that a separate Ministry of Trade has been set up. On the agricultural side, this Ministry will attempt to maintain and extend export markets and will also be concerned with questions of trade policy. In *New Zealand* the main change in 1955/56 was the introduction of a floor price scheme for meat, following the termination of the long-term agreements with the United Kingdom.

Western Europe

With rising wages and other costs, farmers in a number of European countries have recently been pressing for measures to increase farm prices. Most governments, although inclined to raise the level of farm income, have been unwilling to allow a rise in food prices

[2] John D. Black and James T. Bonnen, *A Balanced U.S. Agriculture in 1965*, National Planning Association, Washington, D.C., April 1956.

which would set off further demands for higher wages, as in Finland, where a general strike followed the raising of guaranteed farm prices. Some governments have found the burden of farm subsidies becoming too great, and also that guaranteed prices tended to encourage farmers to increase production of commodities which, with lower world prices, could more economically be imported.

Fixed or guaranteed prices for certain products have been raised in some cases, but in general there has been an increasing trend toward helping farmers to reduce costs by improving the farm structure or subsidizing means of production, rather than raising the general level of agricultural prices. Some governments have made their price schemes more flexible or have reduced their guaranteed prices for some commodities in order to encourage a more selective expansion of production.

In *Western Germany* a new law of September 1955 obliges the government to report annually on the state of agriculture, and to take measures to raise farm income to the same level as that of persons in a comparable occupation. The first report, issued in February 1956, indicated that incomes in agriculture were lower than for any comparable population group. In addition, the loss of manpower to industry had imposed the need for a high rate of investment in labor-saving machines, so that short-term credits had increasingly been used for long-term investments. Nearly 1,000 million marks ($240 million) have therefore been earmarked to improve the situation of agriculture in 1956/1957. Except for an increase in the price of milk, agreed earlier, the assistance to agriculture is not to take the form of increased prices. Consumption is to be encouraged by the abolition of the turnover tax in certain cases on produce sold by farmers and expenditure reduced by the conversion of short-term debts to reduce interest payments. The efficiency of production and distribution is to be increased by subsidies for fertilizers and high quality seeds, the consolidation of unprofitable dairies, help in the construction of silos, distribution of milk in schools, premiums for cutting out low-yielding fruit trees, the co-operative use of machinery, the establishment of industry in districts where the farm population is underemployed. Farms are to be consolidated, better working conditions are to be provided by the installation of water supplies and improved housing, the labor force is to be increased by the employment of immigrant seasonal workers, and more professional training and extension services are to be made available.

Both the United Kingdom and Sweden, where farmer's incomes are more or less assured have taken steps to improve the competitive position of their agricultures. In *Sweden* a new system of price-fixing will become effective on 1 September 1956. Agricultural prices will be determined for three years, during which time they may fluctuate between an upper and lower limit around certain average prices, calculated to give income parity to the agricultural population relative to other groups. Domestic production is protected by fixed import duties, equal to the difference between the average prices and world prices at the beginning of the three-year period, so that domestic prices will adapt themselves to international prices, but on a higher level, determined by the import duty, which, however, will generally not exceed 25 percent of the international price. During the three-year period, adjustments may be made to average prices and import duties if the cost-of-living index moves up or down by more than 5 percent or if the new price index of agricultural products, based on prices at 1 September 1956, moves by more than 6 percent.

In the *United Kingdom* the new guaranteed price levels, supported by means of a deficiency payments system and production grants, will give some increase in farm receipts to compensate for increased costs, although it has once again been assumed that greater efficiency will partially offset increased costs. The present policy is to maintain a large arable area with emphasis on saving imports of feeding-stuffs, to increase beef and mutton production, to limit the increase in milk production but produce more from domestic feed resources, and to reduce the costs of pigs and eggs. Guaranteed prices for pigs have been reduced, while the level of price support has been raised for barley and oats but lowered for wheat and rye. Even if the wheat area is reduced, however, production will not necessarily decrease, as the subsidies on nitrogen and phosphatic fertilizers have been raised. The small rise in the guaranteed price of milk will not compensate for increased costs except on the more efficient farms, and it is hoped that less efficient producers may switch to beef production, at a time when it is considered that no reasonably economic outlets exist for higher milk production.

Ireland too has decided to encourage domestic production of feed grains and to reduce expenditure on wheat. For the 1955/56 marketing season the support price for wheat was already reduced by nearly 13 percent. It is aimed to cover only one half to two thirds of the country's needs by domestic wheat production, as against 85 percent in 1954, and to encourage farmers to produce more feed grains as a basis for a larger production and export of livestock and meat.

In *France* also the declared policy is to raise the efficiency of agriculture and to eliminate production for which an economic outlet cannot be found. The expansion of maize and barley production is being encouraged at the expense of wheat and sugar beet. Premiums are being paid at an increased rate for the conversion of vineyards to other crops. For 1956 larger sums than in the preceding year are to be devoted to extension services, electrification, water supplies, etc. The consolidation of farms and the development of backward regions have continued. Preparation of a third Development Program for the period 1957-1960 has started.

Agricultural policy in *Italy* is mainly concerned with expansion of production and the maintenance of an equilibrium in the market. The latter consideration has led to measures for reducing production of rice. Since State stockpiling became heavy and production showed no tendency to decrease, the authorities decided to reduce the price at which they buy the rice and at the same time to limit the area whose production will be taken over at a guaranteed price.

The U.S.S.R. and Eastern Europe

In the *U.S.S.R.* the sixth in its series of five-year plans[3] was begun in 1956. As in the previous plans, heavy industry has top priority, but agriculture's share of planned state investment has increased slightly to 12 percent of the total. This is the first planning period in which state investment in agriculture is to exceed the investment expected from the collective farms themselves. Agricultural production targets established in the previous plans

[3] For a fuller discussion of this plan, see the FAO *Monthly Bulletin of Agricultural Economics and Statistics*, June 1956.

TABLE II-20. U.S.S.R.: AGRICULTURAL PRODUCTION — TARGETS AND REALIZATION

PRODUCT	Period of the Fifth 5-Year Plan Increases from 1950 to 1955		Period of the Sixth 5-Year Plan Increases from 1955 to 1960
	Targets	Realization	Targets
	..... *Percentage Increase*		
Grain	40–50	29	40
Cotton lint	55–65	9	56
Flax fiber	40–50	49	35
Sugar beet	65–70	47	54
Potatoes	40–45	–20	85
Vegetables	–	42	118
Meat	80–90	30	100
Milk	45–50	19	95
Eggs	–	54	154
Wool	100–150	42	82

were generally not achieved, partly because resources were diverted from agriculture in order to fulfill the industrial targets. Although heavy industry still takes precedence over agriculture, it appears that the new industrial targets may be realized with less withdrawal of resources from agriculture.

The planned production of grains in the U.S.S.R. is 180 million tons by 1960, which may be compared with an estimated output of 100 million tons in 1950 and 129 million tons in 1955. The achievement of the target would imply increasing production by about 40 percent in the next five years, rather more than the 30 percent increase that has been reported since 1950. Substantial increases in the production of other crops are planned (Table II-20). It appears that no further large additions to the cultivated area are envisaged except for maize, and that the increases are expected mainly from yields and reduced harvesting losses. The number of tractors and combine harvesters and the production of fertilizers are to be more than doubled by 1960, while more efficient use is to be made of organic manures. There are no formal targets for livestock numbers in the new plan, but large production increases are called for. These are based essentially on a substantial improvement in the present very low levels of productivity per animal, and can be reached only if supplies of feeding-stuffs are greatly increased.

State farms are being increasingly developed in the U.S.S.R. and nearly half of the new land recently added to the cultivated area was

opened up by state farms. The importance of the machinery and tractor stations has also been increased, and although the collective farms are now allowed to plan part of their output themselves, these plans are subject to the approval of the machinery and tractor station to which each collective farm is attached. Collective farmers have recently been encouraged to produce more on their individual plots, but the policy now appears to be to reduce the size of these holdings and the time spent on them. Compulsory delivery quotas have been reduced and prices both for compulsory deliveries and for sales to the state have been raised, in order to provide incentives for increased output and to reduce the attractiveness of sales on the free market.

The countries of *Eastern Europe*, with the exception of Bulgaria, also began new five-year plans in 1956. The increases planned in crop and livestock production are not yet known in detail, but as in the U.S.S.R. they are based mainly on improved yields. In these countries individual holdings still occupy a large part of the cultivated area, and it appears that rapid collectivization by means of rural co-operatives has been resumed. The rate of agricultural investment has recently increased, the number of tractors rising by about 25 percent between 1953 and 1955.

Far East

In the Far East several important new development plans were begun in 1955/56. *India's* first five-year plan was completed with the harvesting of the 1955/56 crop, and a second plan covering the period 1956/57-1960/61 has now gone into operation. Many of the targets for agricultural production under the first plan were reached ahead of schedule, and when the final outcome of the 1955/56 harvest is known, it is likely that all will have been exceeded, except possibly for jute and sugar cane. A measure of the success of the plan as a whole is that the real national income was raised by 17 percent instead of the planned 11 percent, and per caput real incomes increased by some 10 percent.

The new plan aims to increase the real national income by a further 25 percent and per caput real income by 18 percent. The total outlay in the public sector is scheduled to be twice as great as in the first plan. While a primary aim of the first plan was to increase agricultural production, its success has enabled the emphasis to be shifted to basic industry in the new plan. Agriculture is to receive 12 percent of the total investment, as compared with 16 percent earlier, but in absolute terms the investment in agriculture is to be much larger than before. New targets have been established for most crops, including a 15 percent increase for food grains and 25 to 30 percent for cotton, sugar cane, oilseeds and jute. Emphasis is also to be placed on improving the quality of the diet, by increasing livestock and poultry production and by an increase of 32 percent in fish production. The number of regulated farm markets is to be doubled. A large increase in fertilizer production is planned, but with the rapid growth of consumption, imports will still be needed.

Since the publication of the new plan it has been decided to raise the targets for food production because of the increased demand for foodstuffs and difficulties in arranging for the import of surplus foodstuffs from abroad. The revised targets are likely to be established during the summer of 1956.

New development plans have also been begun in a number of other Far Eastern countries. *Ceylon's* second six-year plan, for 1954/55-1959/60, was announced in July 1955. It is in part a continuation of projects begun under the first plan and the basic objectives for agriculture are unchanged. In *Pakistan*, where a National Economic Council at ministerial level, with the Prime Minister as Chairman, was set up in early 1956, a draft of a new five-year plan has just been presented. Expenditure is to be approximately $870 million in the public and private sectors, and it is hoped to increase national income by 20 percent by 1960. About one third of the expenditure in the public sector is to be devoted to various agricultural programs. In *Japan* a new economic plan for 1955-60 was submitted in February 1956, with a target of an annual increase in agricultural, forestry and fisheries production of 3.2 percent. *Indonesia's* draft five-year plan for agriculture was announced in May 1955 and is understood to be in the process of final revision. In *Burma* and *Viet-Nam* new draft plans for agriculture are reported to aim at increasing and diversifying agricultural production and improving paddy yields.

The first five-year plan of mainland *China* was adopted in July 1955. The plan covers

the years 1953-57, the delay in its completion being officially attributed to the lack of data and inexperience in long-range planning. The main aim is rapid industrialization, and only 8 percent of the planned expenditure goes to agriculture. While agricultural production is to be increased by 23 percent, the target for industry is 98 percent and for handicrafts 61 percent. Production of food grains is to be increased by 18 percent, cotton 25 percent, sugar cane nearly doubled and sugar beet more than quadrupled. An increase of only 7 percent is planned in the sown area, and most of the production increase is to be achieved by improved yields, though the supply of chemical fertilizers is likely to prove inadequate for the realization of some of the targets, in spite of the planned trebling of fertilizer production. As a first step toward mechanization, the number of tractor stations and mechanized state farms on the U.S.S.R. model is to be increased. The extension of co-operatives and collectivization has recently been speeded up.

The remaining two years of this agricultural program are now to be embodied in a twelve-year plan for agriculture, as part of a fifteen-year plan for the Chinese economy as a whole. The draft of the new twelve-year plan calls for the doubling of grain yields, even greater increases in cotton yields, and increases in area of 20 million hectares for rice, 10 million hectares for maize and 7 million hectares for potatoes. Emergency stocks of grains are to be set up, the quality of co-operatives improved and the number of state holdings considerably increased.

Latin America

There have been extensive changes in agricultural and allied policies in Latin America during the course of the year. Argentina is in the process of transition from a controlled to a freer economy and a set of measures has been adopted, including currency devaluation, intended to achieve a better balance between agricultural and industrial expansion and encourage agricultural exports. Some other Latin-American countries also modified their foreign exchange rate systems during 1955/56, which will increase incentives for agricultural exports.

In *Argentina* one of the major objectives of the devaluation was to give a new incentive to crop production, which had been depressed under the former regime, and to ease the marketing of the major agricultural export products. With the new exchange rate it became possible to raise producer prices for crops to more attractive levels and to compete in foreign markets without loss to the government. To avoid inflationary pressure and to make sure that the increased profits go into necessary investment, a special lower exchange rate applies temporarily to crop exports and profits derived from this device are being deposited in a National Economic Recovery Fund, to be used partly for agricultural development and partly for subsidies to alleviate the effect on the cost of living of the higher agricultural prices. Producer prices for grains and oilseeds have been raised by from 20 to 117 percent, the largest incentives being given to oilseeds, which were in such short supply in 1955 that imports were necessary. Cattle and hog prices were raised by 14 to 18 percent. Further price increases, mainly for livestock products, were announced at the end of May.

Argentina's foreign trade in agricultural products, which was largely controlled by state enterprises, is to be returned to private hands. Of the major state enterprises, the IAPI (Argentine Trade Promotion Institute) is in liquidation, while the INGE (National Grain Institute) and INC (National Meat Institute) now set official export prices, and receipts up to this level must be surrendered at the official exchange rate. Earnings in excess of these prices can be exchanged in the free market.

The second five-year program of Argentina has been rendered obsolete by these policy changes. Work is therefore being started on a new development plan, and technical assistance has been requested from international organizations.

In most other Latin-American countries the development plans still have some years to run, but in a few instances new plans are being prepared. A report surveying possibilities for the agricultural development of *Colombia*, prepared by the International Bank Mission, was submitted to the government in April 1956, and an FAO mission is now assisting in the formulation of a comprehensive agricultural program. In *Paraguay* a new agricultural program has been prepared and awaits official approval. The new Development Council in *Brazil* is preparing two plans, one for the development of food production, transport and power over four or five years, and the other for the immediate

provision of rural credit and the construction of silos and warehouses. Programs for the development of specific areas, such as the San Francisco River Valley and the Amazon Basin are being considered.

In *Mexico* an interesting feature, because of its novelty in Latin America, was the establishment of a government-sponsored crop insurance scheme for fire, pest and climatic risks, covering up to a maximum of 5 million hectares, principally under cotton, wheat and maize. It is hoped that this measure will encourage private investment in Mexican agriculture and a wider adoption of modern methods of farming.

Near East

In the Near East too, most of the former development plans are still in operation, but a few new plans have been begun during the period under review. In *Iran*, with the resumption of oil activities, the partially implemented investment program for 1949-55 has been replaced by a second seven-year plan, which, in addition to the completion of projects already begun, includes new irrigation and other schemes. The plan is to cost $840 million, but it is possible that it may be modified, on the advice of the International Bank, in order to allow the peak level of investment to come toward the end of the planning period, when oil revenues are expected to be at their highest. *Iraq's* second five-year development plan was begun in 1955. It was modified in April 1956 and planned expenditure will now be I.D.488 million ($1,370 million), or I.D.184 million more than originally announced, because of increases expected in oil revenue. The plan includes major projects of irrigation, drainage and land settlement. *Syria* has launched a five-year investment program, under which 28 percent of the total expenditure is allocated to irrigation and power and another 29 percent to transport and communications. *Afghanistan* has concluded a financial and technical assistance agreement with the U.S.S.R. for development in the fields of agriculture, power, irrigation, etc.

The potentially most important agricultural development in the Near East is, however, outside the framework of a specific development plan. The High Aswan Dam, the total cost of which is estimated at $1,300 million, would, if implemented, increase *Egypt's* cultivable area by as much as one third.

Government intervention in the marketing of Egyptian cotton is being gradually reduced. The Alexandria Cotton Exchange was re-opened in September 1955 and trading in cotton futures resumed. Cotton growers are again free to dispose of their crop to private exporters, and the functions of the Egyptian Cotton Commission are now limited to price support operations. Export duties on cotton have been greatly reduced.

Africa

In some parts of Africa, including the Union of South Africa, where the producer price for maize has again been lowered, efforts are being made to persuade maize growers to divert some of their land to other crops. Another effect of the lower world prices for certain products is that in some British Colonial Territories guaranteed producer prices for some export crops have been reduced, in order to prevent further withdrawals from the reserves of the Statutory Marketing Boards. In some French Overseas Territories, *Caisses de stabilisation des prix* have been established for certain export products.

In the *Union of South Africa* the long-awaited Tomlinson Report on the Development of the Native Reserves was published in 1956. The Commission recommended the expenditure of £104 million over ten years on the development of agriculture and industry in the reserves, in order to make them capable of supporting a much denser population. The government has not been able to accept all of the Commission's major recommendations, but it was announced recently that through the Native Trust Fund money will be made available to accelerate afforestation, soil conservation and irrigation.

Following the announcement in early 1955 of a further grant from Colonial Development and Welfare Funds for the period 1955-60, some British Colonial Territories have begun new development plans for this period or have revised their previous ones. A characteristic of some of the new plans is that they emphasize agricultural and industrial development, whereas the earlier ones generally concentrated on the development of the infrastructure, and in particular, transport.

GENERAL APPRAISAL AND OUTLOOK

The world food and agricultural situation was basically unchanged during 1955/56. The expansion of production continued and once again the increase was rather unevenly distributed. Although, for some commodities, the surplus situation eased a little in 1955/56, the largest stocks, those of grains and cotton, increased further. The volume of world trade in agricultural products rose fairly sharply in 1955 for the first time for some years, but there was still no sign of a continuing upward trend and price declines made the increase in the value of agricultural trade relatively small. Prices have, in fact, generally continued to move against the farmer, and his position in relation to the rest of the population has been further weakened. Lower prices have, however, still been but little reflected at the retail level, and there have been only modest improvements in consumption.

It appears that supplies will again be larger in 1956/57 and that the present lull in economic expansion will continue, with demand maintained but not increasing appreciably. There is little likelihood, therefore, of any significant reductions in surplus stocks during 1956/57, while the price trends noted toward the beginning of 1956 will probably continue. In some cases these trends may be accentuated by more vigorous surplus disposal measures.

Thus the main problems facing the world's agriculture remain broadly the same. The basic dilemma of most governments is how to reconcile their dual responsibilities to maintain the economic position of farmers and at the same time to provide consumers with adequate food supplies at low prices. The deteriorating economic position of the farm population continues to cause anxiety. In spite of a steady decline in the number of people engaged in agriculture, per caput incomes in farming are well below those in other occupations in nearly all countries, and in most continue to fall or at best to stagnate in the face of a steady rise in real incomes in the economy as a whole. In the year under review an increasing tendency was noted to support farm incomes by means of reductions in the prices of farm requisites, sometimes through direct subsidies, thus encouraging greater productivity by the use of fertilizers, etc., while avoiding further rises in retail prices.

While per caput food supplies now appear to have regained the prewar level in all regions, further considerable improvements, especially in the quality of the diet, are still needed in the less developed parts of the world. Apart from the human need to improve diets, increased consumption is also the most effective and beneficial method, side by side with a realistic and selective approach to the expansion of production, of overcoming the present problem of surpluses and avoiding their recurrence in the future. In spite, however, of the added urgency caused by surplus stocks, only a beginning has so far been made toward reducing production and marketing costs in order to bring more and better food within the reach of the poorer consumer. At the same time, while it is generally accepted that surplus stocks should where possible be used to promote economic development and raise standards of living, and a number of schemes have been proposed for this purpose, very little has yet been done in this direction, except for a few cases of famine relief and assistance to needy groups.

Some progress has already been made, however, in adjusting the production pattern more closely to demand. For example, the expansion of livestock production, for which demand is strong, is outstripping crop production in most of the more developed countries. Again, in India and some other underdeveloped countries, more attention is being paid to the nutritional needs of the population in the new agricultural development programs.

Looking further ahead, much will depend on the success of the new United States measures to reduce stocks by means of a curtailment of production. The Soil Bank proposals should begin to take full effect with the 1957/58 crop. It is as yet too early to judge whether the large acreage reductions hoped for will be achieved and how far lower acreages will, as in the past, be offset by higher yields. It may be necessary to operate the Acreage Reserve Program for longer than is at present intended. The measure of its success will be how far it enables the liquidation of the surplus stocks to be carried out without recourse to disposal measures that would be damaging to world markets.

The relative stability of the food and agricultural situation experienced in 1955/56 and expected to continue in the coming season allows a further breathing space for these and other measures to adjust world agricultural production and bring it more in line with changing

demand. It also allows a breathing space — less widely appreciated and hardly utilized so far — to attack the problem of underconsumption. In both these ways the emergence of wasteful surplus situations in the future may be prevented. Perhaps the most encouraging feature of 1955/56 is the evidence it provides, in the shape of the many important new development plans begun during the year, that agricultural expansion in the underfed parts of the world is not being held back because of fears of the consequences of unsold stocks elsewhere.

Chapter III - SOME FACTORS INFLUENCING THE GROWTH OF INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

Since the end of World War II the purchasing power on international markets of agricultural products as a whole for manufactured goods has averaged some 50 percent more than in 1934-38. Correspondingly, the purchasing power of manufactured goods as a whole for agricultural products has fallen by about one third. These changes in price relationships, usually referred to as the "terms of trade," have greatly influenced postwar economic developments. On the one hand they have added to the balance-of-payments difficulties of the agricultural importing countries of Western Europe. On the other, they have eased the problems of some primary exporters in paying for imports of manufactured goods, including capital goods, at a time when these were badly needed for economic development.

The changes in relative prices have been so marked that it is of interest to enquire whether they are likely to continue, and what their influence has been on the development of international trade. Whether, for example, the increased purchasing power of agricultural products was primarily a result of the postwar shortages, though since somewhat artificially prolonged by agricultural price supports or government measures to control international trade; whether there have been any long-term trends in the terms of trade for agricultural products; or whether the changes in relative prices are connected with the slow postwar growth of agricultural trade compared with the rapid expansion of world trade in manufactured goods.

Such questions, which concern agricultural products as a whole, are discussed in the first two sections of this chapter. Later sections deal with the development of the volume and value of international trade in individual agricultural products. These sections may have greater possibilities of practical application. An attempt is made to establish some of the underlying reasons why trade in some agricultural products has stagnated or declined, while trade in other commodities has shown a rapid growth; and to see whether any useful indications may be obtained of the likely future course of demand for the main agricultural products on international markets.

These questions are of significance to all countries engaged in international trade. Industrialized countries are concerned by the relatively high cost of agricultural products in terms of manufactured goods since the end of the war, which necessitates constant efforts to expand their export markets. Underdeveloped countries, though anxious to increase their domestic food supplies, must nevertheless maintain or expand certain food and agricultural exports to earn essential foreign exchange for economic development.

The present study does not attempt to put forward solutions to these problems. It is no more than a preliminary sketch, a first broad analysis on a world scale of the main developments during the first half of the century. It provides, however, a foundation on which it is hoped to build further. More detailed analyses and, where necessary, revisions of the basic statistics will be undertaken in the years ahead. Thus the situation in each region, or in each of the main exporting and importing countries, or for each main commodity, might all form the subject of further analyses. The work is presented in summary form, without

all the basic statistics which have been drawn on,[1] and raises a number of questions and controversial issues in the hope of evoking comments from other workers engaged in this field.

A few brief comments may be added on the methods of analysis. In the first place the global approach, at least for agricultural products, is perhaps less broad and imprecise than it may appear at first sight. Main reliance has been placed on import data, and for most agricultural products by far the greater part of world trade is covered by imports into perhaps a dozen highly industrialized countries. Careful comparisons have been made, however, with comparable export statistics, and the conclusions which emerge from each set of data are found to be in close agreement.

For some agricultural commodities international trade has been greatly affected by boundary changes. The separation of Eastern Germany, for example, has greatly increased the import requirement of Western Germany for cereals. The statistics of international trade in jute have been greatly affected by the partition of India and Pakistan, and in this instance trade between the two countries has been excluded from the estimates for the sake of comparability. For the same reason shipments of rice prior to 1939 from former Japanese territories to Japan have been treated as part of international trade in this commodity. Though important for individual products, however, for international trade in agricultural products as a whole, the boundary changes of the last decades seem to have had less influence than might have been expected.

Although the analysis has been made throughout in economic terms, there is no implication that international trade in agricultural products is subject only to economic influences and is unaffected by social or political factors. For example, one of the main influences on the development of trade, the trend toward greater agricultural self-sufficiency, is to a large extent the outcome of such factors, though influenced also by economic necessities such as difficulties of external payments. Again, the recent shift in international trade toward manufactures and away from agricultural products seems, as is suggested below, to stem in part from changes in social values. If economic factors are mainly stressed in the sections which follow it is largely because other influences are not yet susceptible to quantitative measurement.

[1]The detailed statistical data are too voluminous for publication in the present report. They are, however, being assembled in mimeographed form, together with a description of the statistical methods employed, and may be obtained on application to FAO, Rome.

CHANGES IN THE TERMS OF TRADE FOR AGRICULTURAL PRODUCTS AS A WHOLE

A useful starting point is to consider briefly the broad movement of prices in international markets during the past few decades. Two major wars and two major recessions have made this a period of unusually wide fluctuations and, not unexpectedly, agricultural prices showed greater variations than prices of manufactured goods. Developments since 1913 are shown graphically in Figure III - 1 which charts annual indices of average unit values[2] of all products moving in world trade, together with comparable indices for two sub-groups : agricultural products as a whole and manufactured goods as a whole.[3]

Since World War II the three price indices have kept fairly well in step, the only major divergence being the short-lived gain in agricultural prices during the Korean boom. In 1913 the three indices (base period 1952-53) also lie close together. Throughout the inter-war period, however, average prices of agricultural products are seen to have been much lower in relation to prices in general, and still more so in relation to prices of manufactured goods, than they were either in 1913 or in any year from 1947 onwards. The discrepancy was most marked during the two recessions of

[2]" Unit values " are the weighted average value per ton (or other unit) of the total supply of a product or group of products exported (or imported as the case may be) during the period indicated. In some respects they are therefore more representative than prices, which reflect only the market value of a certain grade or quality (not necessarily the grade in largest supply) at a given point of time.

[3]The indices in Figure III-1 for all products moving in world trade and also for manufactured goods are based on those published by the United Nations and the earlier indices of the League of Nations. The indices for agricultural products are those of FAO, and are the same series as those shown on a quarterly basis for the postwar period in Figure II-2. The indices do not include forest and fisheries products although data are included below on some individual forest and fisheries products.

FIGURE III-1. Indices of Average Unit Values of Agricultural and Other Products in International Trade, 1913-55

(1952-53 = 100 ; semi-logarithmic scale)

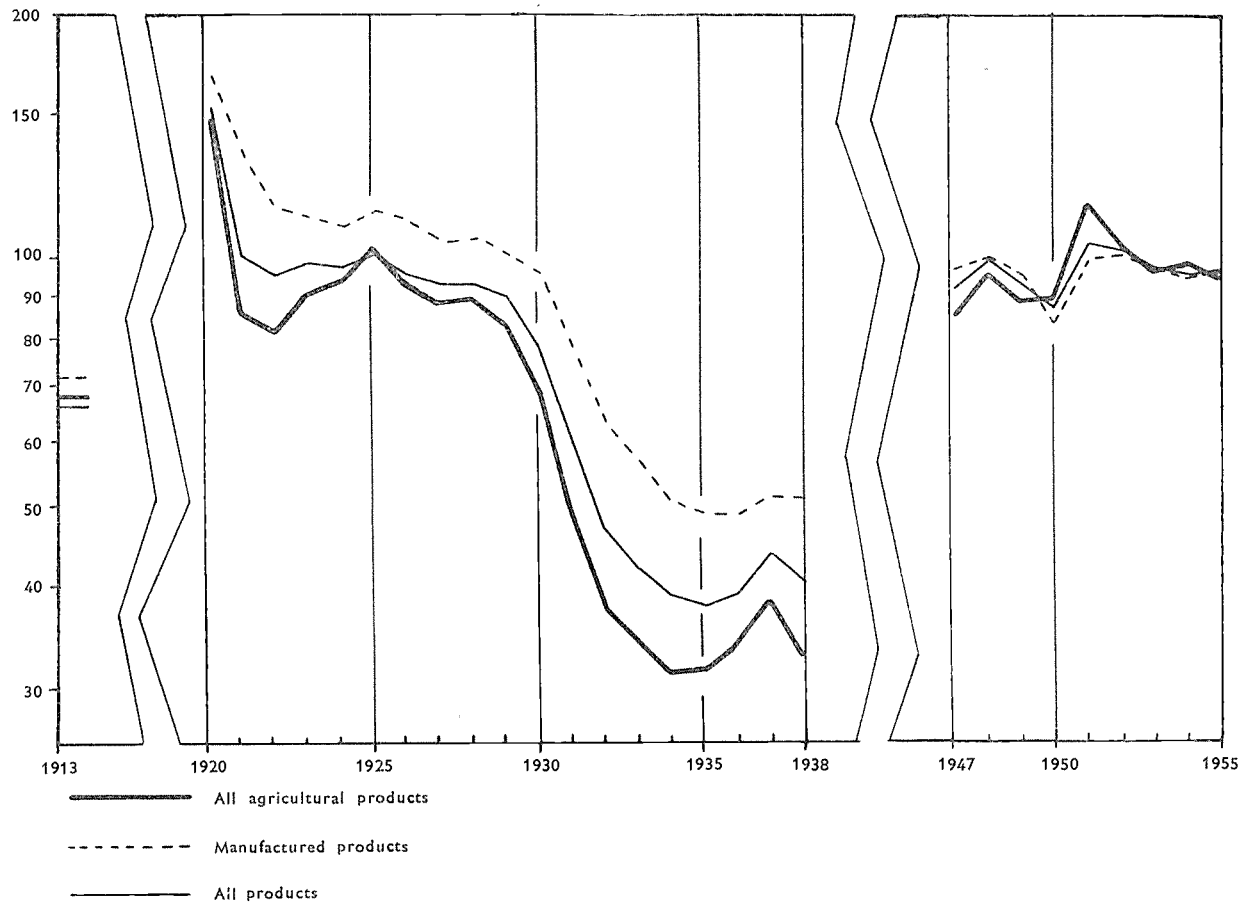
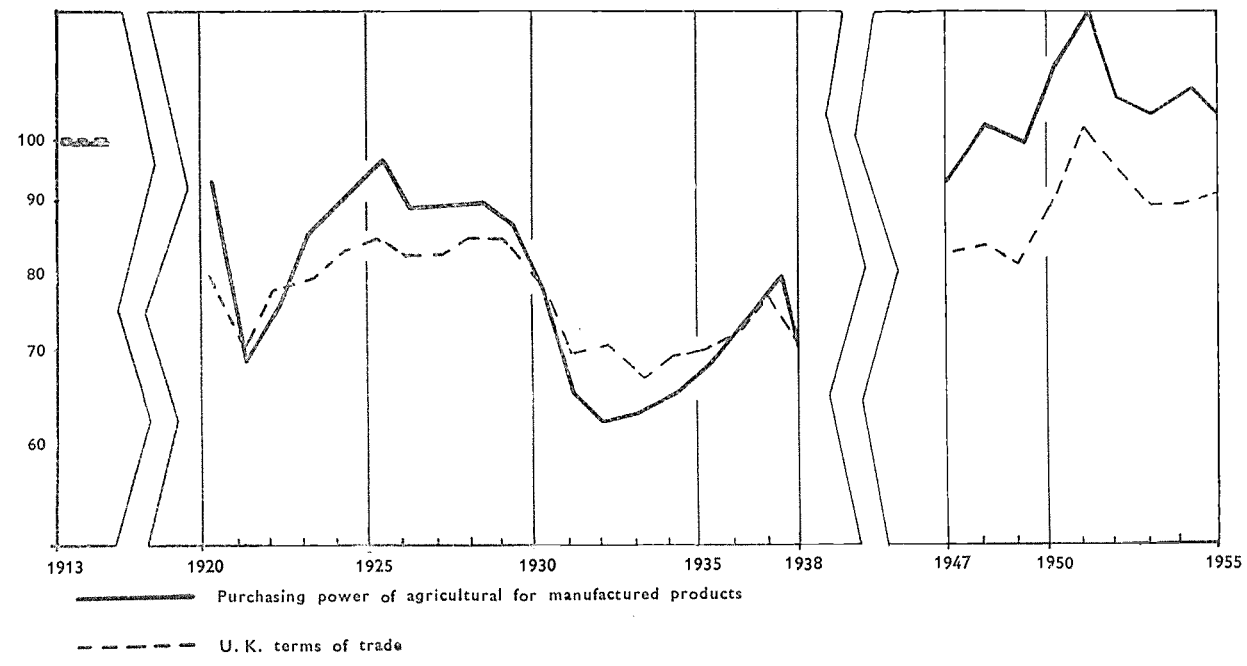


FIGURE III-2. Indices of the Purchasing Power (Terms of Trade) of Agricultural Products for Manufactured Goods in World Markets, 1913-55, in Comparison with the Terms of Trade for the United Kingdom

(1913 = 100 ; semi-logarithmic scale)



1920 and of the 1930's, reflecting again the familiar experience that in times of slump, agriculture is hit mainly by low prices, and manufacturing industry mainly by a reduced volume of output and unemployment.

The data in Figure III-1 are reproduced below (Table III-1) as averages for selected periods

TABLE III-1. AVERAGE UNIT VALUES OF AGRICULTURAL PRODUCTS AND MANUFACTURED GOODS IN INTERNATIONAL TRADE 1913-54 AND TERMS OF TRADE (i.e., Purchasing Power of Agricultural Products for Manufactured Goods)

PERIOD	Average Unit Value of All Products (a)	Average Unit Values of Agricultural Products (b)	Average Unit Values of Manufactured Goods (c)	Terms of Trade of Agricultural Products for Manufactured Goods (b/c)
	..... *Indices 1952-53 = 100*			
1913	66	68	71	95
1920	153	148	168	88
1921-22	98	83	124	67
1923-26	99	95	112	85
1927-30	89	82	102	81
1931-34	47	38	63	60
1935-38	41	34	50	68
1947-49	95	90	97	93
1950-51	96	103	92	112
1952-53	100	100	100	100
1954-55 . . . . . (Provisional)	96	97	97	100

NOTE: The periods for which averages are shown in the above and later tables have been chosen to correspond roughly with different phases in recent economic development. Between the wars, 1920 was a boom year; 1921-22 coincided approximately with the first recession after World War I; 1923-26 and 1927-30 were periods of prosperity in North America, and to some extent elsewhere, though unemployment remained at a high level; 1931-34 were years of depression, while in 1935-38 recovery was only partial and in 1938 industrial activity and prices showed an ominous downturn. Since World War II, 1947-49 were years of rapid recovery; 1950-51 largely covered the Korean "boom and bust"; while the years since 1952 have seen considerable stability of prices and rather steady economic progress.

of up to four years. The ratio between columns (*b*) and (*c*) gives the "terms of trade" for agricultural products in the final column; in effect their purchasing power for manufactured goods.

It is, of course, the real purchasing power of agricultural products, either for manufactured goods or for goods in general, which is of importance both to exporting and importing countries, rather than the money price in dollars or other currency units of fluctuating value. And it is with the "real" value or purchasing power of agricultural products that the remainder of this Chapter is mainly concerned.

The marked gain since World War II in the purchasing power of agricultural products in comparison with the decade before the war is clearly evident in the final column of Table III-1. It will also be noted that although all prices (in terms of dollars or other money units) were appreciably lower in 1913 than in the years since World War II, the purchasing power of agricultural products in these two periods was very nearly the same.

Comparisons with National Statistics

To obtain some confirmation of the order of magnitude of the rather striking shifts in price relations brought out in Table III-1, the above estimates have been compared with certain national statistics. In Figure III-2 annual estimates of the terms of trade (purchasing power) of agricultural products for manufactured goods (corresponding to the final column of Table III-1) are shown in comparison with the terms of trade for the United Kingdom; i.e., average unit values of U.K. imports divided by average unit values of U.K. exports. For convenience of comparison the FAO indices have been shifted to a base 1913=100.

Although the world's largest importer of agricultural products and a leading exporter of manufactured goods, the United Kingdom's trade is not exclusively of this character. Nevertheless, the correspondence between the two curves during the interwar period is close and both show about the same relation to 1913 prices. Since World War II the two curves run parallel, but at rather different levels. The U.K. indices for this last period, however, are explicitly stated not to be comparable with earlier figures.

For the United States a comparison may be made between published indices of unit values of exports of manufactured goods, and estimates of unit values of agricultural exports and agricultural imports derived from published data on the volume and value of such trade. The commodity composition of U.S. agricultural exports and imports are very different, and their unit values and price relations with manufactured goods therefore diverge. Thus unit values of agricultural imports, in which coffee figures largely, have shown a steep rise since World War II. The rise in the terms of trade

for a weighted average of U.S. agricultural exports and imports from 1934-38 to 1952/53 (base period) is, however, very close to the corresponding increase in the rise in the FAO estimate for all agricultural products (Table III-2). So far as they go, therefore, the national statistics of the United Kingdom and the United States tend to confirm the findings summarized in Table III-1.

TABLE III-2. ESTIMATED CHANGE IN TERMS OF TRADE FOR AGRICULTURAL PRODUCTS IN RELATION TO MANUFACTURED GOODS 1934-38 TO 1952-53

PRODUCT	1934-38	1952-53	Percentage Change
U.S.A. Agricultural exports	76	100	+ 32
Agricultural imports	58	100	+ 72
Weighted Average	65	100	+ 54
FAO : Food and feeding stuffs	75	100	+ 33
Beverages and tobacco	55	100	+ 82
Raw materials. . .	58	100	+ 72
Weighted Average	67	100	+ 49

Long-term Trends

The above paragraphs indicate the broad changes in price relationships on world markets for agricultural products as a whole since 1913. But they do not yet enable us to say whether the terms of trade for agricultural products since World War II have been particularly favorable, or whether, on the contrary, those obtaining between the wars were particularly unfavorable. The similarity of price relations since 1947 to those in 1913 may suggest the former alternative, but is not conclusive, as prices in the single year 1913 on the eve of the first world war might have been abnormal.

There has been no opportunity in FAO to carry back the basic data on unit values of agricultural products earlier than 1913. Professor W.A. Lewis,[4] however, has recently published a series of price indices for food, raw materials and manufactured goods moving in international trade over the period 1870-1939, and including also provisional figures for 1950. His figures from 1929 onwards are based on League of Nations statistics, while earlier estimates are derived mainly from U.K. and U.S. data. For manufactured goods his indices are virtually the same as those in Table III-1 and Figure III-1. For foodstuffs he has linked more than one series and the basis changes in 1913 and again in 1929. This, together with some difference in commodity coverage, may explain why his estimates of the fall in prices during the depression of the 'thirties is rather less steep than in the FAO index (Table III-3).

TABLE III-3. LONG-TERM TRENDS IN TERMS OF TRADE (PURCHASING POWER) FOR FOODSTUFFS AND OTHER AGRICULTURAL PRODUCTS IN RELATION TO MANUFACTURED GOODS

PERIOD	Food[1]	Food[2]	Beverages and Tobacco[2]	Agricultural Raw Material[2]	All Agricultural Products[2]
	..... *Indices 1913 = 100*				
1870-74	113	—	—	—	—
1875-79	118	—	—	—	—
1880-84	117	—	—	—	—
1885-89	107	—	—	—	—
1890-94	105	—	—	—	—
1895-99	101	—	—	—	—
1900-04	97	—	—	—	—
1905-09	98	—	—	—	—
1910-13	100	[4]100	[4]100	[4]100	[4]100
1921-22	79	81	67	58	71
1923-26	97	90	92	89	90
1927-30	94	89	96	73	85
1931-34	77	67	77	46	64
1935-38	82	76	75	58	72
1947-49	[3]100	107	102	79	98
1950-51	—	103	139	129	118
1952-53	—	99	136	98	105
1954-55		92	163	95	106

[1]Prof. W.A. Lewis's estimates. - [2]FAO estimates. - [3]1950 only. - [4]1913 only.

His series for foodstuffs prior to 1913, however, is continuous and leaves no doubt on the point at issue. The figures show clearly that 1913 was not a year of abnormal prices. On the contrary it marked the end of a period of considerable stability in price relations extending back to about 1895. Professor Lewis' data and that of FAO taken together thus make it clear that price relations on world markets during the interwar period were much more unfavorable to agricultural products in

[4]W.A. Lewis: "World Production, Prices and Trade 1870-1960." *Manchester School of Economic and Social Studies*, XX. No. 2. May 1952.

relation to manufactured goods than at any time during the present century. Any comparisons which take as a standard of reference the relation of agricultural and manufacturing prices in the years immediately before World War II may therefore be seriously misleading.

Earlier still, price relations seem to have been even more favorable to agricultural products. Indeed during the period 1870-85 their purchasing power for manufactured goods appear from the figures in Table III-3 to have run at about the level fleetingly regained during the period of the Korean boom.

Because of the difficulties of constructing a reasonably comparable series of price indices for more than a fairly short period, particularly for manufactures, not too much significance can be attached to comparisons with periods as remote as 1870. Nevertheless it appears from the data in Table III-3 that in the late nineteenth century there was a considerable decline in the purchasing power of agricultural products on world markets, and that the decline was resumed after a period of stability soon after the end of World War I.

Comparison of Long-term Trends on International and Domestic Markets

This downward trend of agricultural prices on world markets is in contrast to the long-term trend of prices on some domestic markets

FIGURE III-3. Indices of the Purchasing Power of Agricultural Products in International Markets and on Domestic Markets in the United States, the United Kingdom and Sweden

(1913 = 100 ; semi-logarithmic scale)

More than one American writer[5] has noted that over the past century agricultural prices in the United States have risen to a considerably greater extent than prices in general. The same trend has been observed in Sweden and to some extent also in the United Kingdom.[6] The apparent divergence between the long-term trend of price relations on international and domestic markets (Figure III-3) may be of more than historical interest and merits further study.

The probability is that there is not so much a continuing long-term trend as a series of relatively short-term effects. In the international market, for example, there appears to have been a period of relative stability in price relations from 1870-85, a marked decline in the relative value of agricultural products from 1885-95, leading to another period of stability which lasted until 1913. After that year the influence of wars and recessions became dominant.

THE TERMS OF TRADE FOR AGRICULTURAL PRODUCTS AND THE PATTERN OF WORLD TRADE

The next step is to consider how changes in the relative prices of agricultural products and manufactured goods influence the development of international trade. In general the level of world trade appears to be determined primarily by the level of world economic activity. Professor W.A. Lewis, for example, using an index of world manufacturing production as an indicator of world economic activity and demand, has shown that from 1881 to 1929 there was a rather constant relation between this index and the volume of world trade in primary products. The relation is closest if the largely self-sufficient U.S. economy is omitted from the index of manufacturing production, when an increase of 1 percent in world manufacturing production was found on average to be associated with an increase of 0.87 percent in world trade in primary products.[7]

If the United States is included in the index of manufacturing production there is a break in the relationship after World War I, the subsequent level of international trade in primary products being lower than before the war for a given level of economic activity. The United States produces most of its own raw materials, so that industrial expansion there has less effect on the growth of international trade than expansion in less self-sufficient economies, and the break thus reflects the great increase in the relative importance of American industry during and since World War I.

The depression of 1930 upset the relationship between world economic activity and the growth of international trade in primary products, but the latter was resumed from 1934 to 1938, though at a lower level than before for any given level of industrial activity.

A similar long-term relation can be shown from Professor Lewis's data to hold good not only for the volume of international trade in primary products, but also for the volume of international trade as a whole. In this case too, there is a break to a lower level of trade after World War I, reflecting the greater relative importance of the American economy, and a second break, again to a lower level of trade, after the depression of 1930. As a result of these breaks the growth of international trade has tended to lag behind the growth of world industrial production.

The Share of Manufactures and Primary Products in World Trade

Changes in relative prices of agricultural products and manufactured goods might be expected to be related to at least the relative share of these two groups of products in the total, if not to the level of world trade as a whole.

Much of international trade consists of an exchange of manufactured goods against primary products, of which foodstuffs and other agricultural products are the largest component. According to estimates by the secretariat of the General Agreement on Trade and Tariffs (GATT)[8] in both 1952 and 1953 non-industrial-

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[5]See, for example, F. Strauss and L. H. Bean: "Gross Farm Income and Indices of Farm Production and Prices in the United States, 1869-1937," U.S.D.A. *Technical Bulletin* 703, 1940; and S.E. Ronk: "Prices of Farm Products in New York State, 1841-1935," *Cornell University Agricultural Experiment Station Bulletin* No. 643, 1935.

[6]E.M. Ojala. *Agriculture and Economic Progress* Oxford University Press, 1950.

[7]Prof. W.A. Lewis. *op. cit.*

[8] *International Trade 1954.* GATT, Geneva, 1955

ized countries exported about 60 percent by value of world shipments of agricultural products and in their turn imported some 50 percent of world shipments of manufactured goods. Together, these transactions, which consisted largely of the direct exchange of agricultural products for manufactures, accounted for nearly half the total value of world trade. In addition a good part of the 40 percent of world shipments of agricultural products which came from the industrialized countries may be supposed to have been exchanged against manufactured goods from abroad.

There would therefore seem likely to be some relation between the total value of world trade in manufactured goods and of that in agricultural products (or of primary products as a whole). The relationship would not necessarily be close, however, for in addition to direct exchanges of primary products with manufactures, primary products are often exchanged against other primary products, manufactures against other manufactured goods, and both against services.

In fact the relation turns out to be closer than might have been expected. Professor Lewis has noted that from 1881 to 1938 the share of manufactures in total world trade never departed greatly from 37 percent. If FAO indices of the total value of world trade

FIGURE III-4. Relation between Current Value of World Trade in Agricultural Products and Manufactured Goods

(1952-53 = 100)

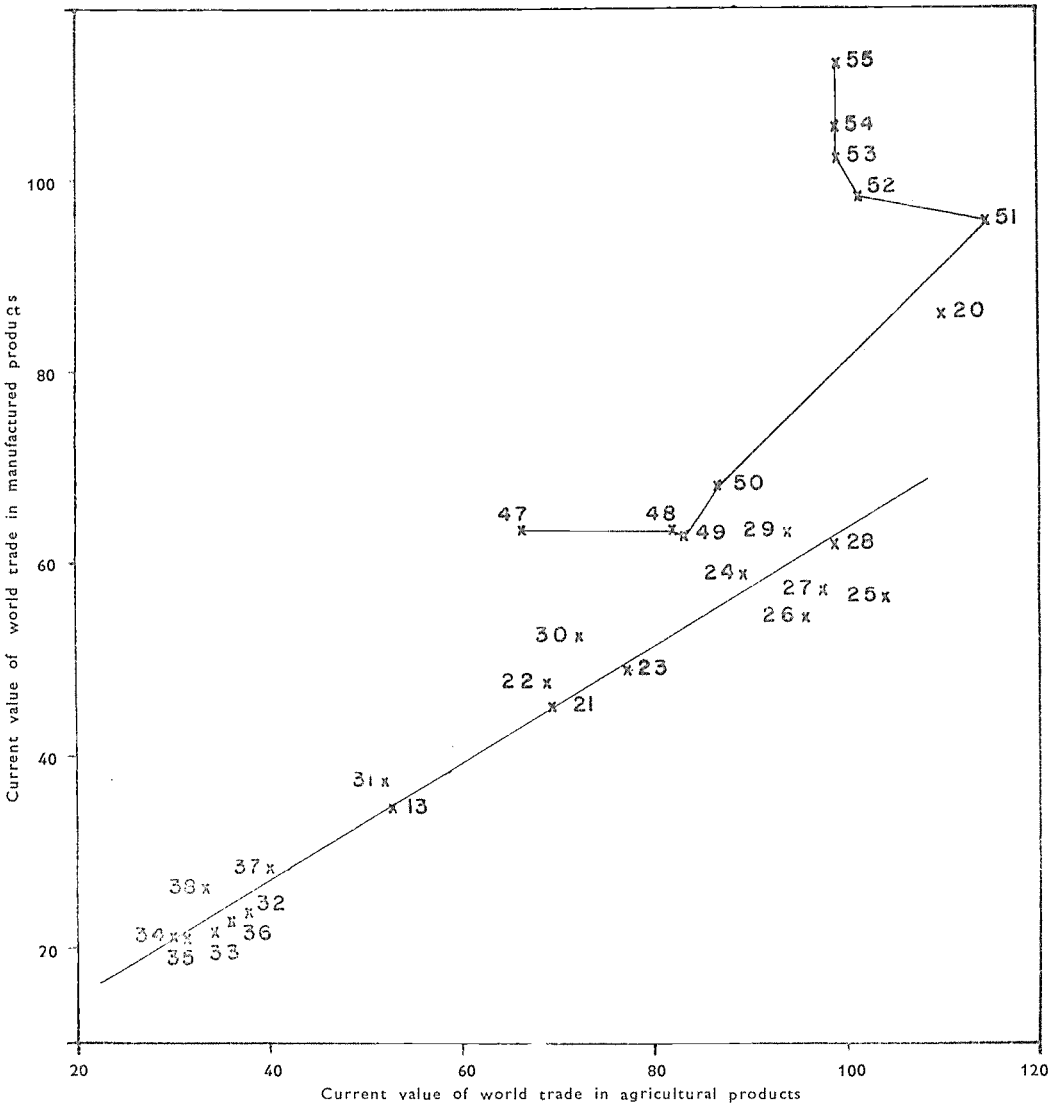
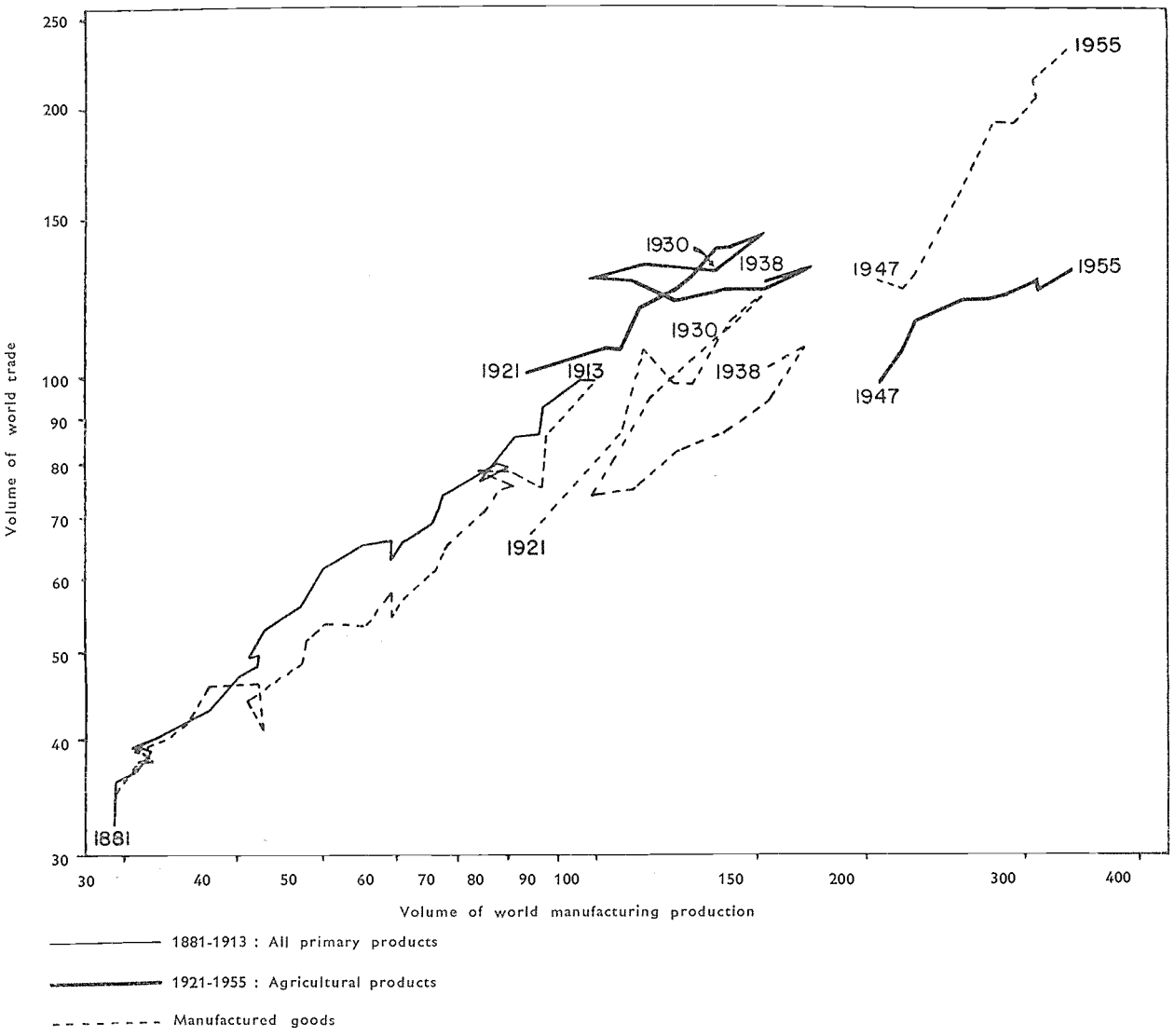


FIGURE III-5. Relative Growth of International Trade in Agricultural Products and Manufactured Goods

(Indices 1913 = 100 ; logarithmic scales)



in agricultural products are plotted against League of Nations/UN indices of the value of world trade in manufactures (Figure III-4) there appears also to have been a rather constant relation between these two sectors of world trade from 1913 to 1938.[9] After World War II, however, the relation is less close, and the value of trade in manufactures is appreciably higher than before in relation to the value of trade in agricultural products.

If there is a fairly constant relation between the value of international trade in agricultural products and in manufactured goods respectively, it follows that major changes in the terms of trade between these two groups of products (of the kind which have been shown to have occurred after World War I, after the depression of 1930, and after World War II) should be associated with parallel changes in their relative volumes of trade. This turns out to have been the case historically. The basic data are set out in Figure III-5 which shows in relation to world manufacturing production (including U.S.A.) :

(*a*) the volume of world trade in manufactured products from 1881 to 1955,

[9]Part of the relationship in Figure III-4, however, reflects changes in the general value of money in international trade during the period.

(*b*) the volume of world trade in primary products from 1881 to 1913,

(*c*) the volume of world trade in agricultural products from 1921 to 1955.

The points on the chart prior to 1913 are based on the League of Nations data utilized by Professor Lewis. Those after 1913 are based on the League of Nations and UN indices, with the exception of (*c*) which are based on FAO estimates of the volume of trade in agricultural products.

It is evident that before 1913 international trade in primary products and manufactures each developed at approximately the same rate (at least in the long term) and bore much the same relation to the level of world industrial activity.

From 1921, until the depression of 1930, the curve for the volume of trade in agricultural products continued more or less unchanged from the curve prior to World War I for primary products as a whole. In other words, during this period the volume of world agricultural trade at any given level of world industrial activity was about what would have been expected from prewar experience.

The volume of world trade in manufactures, on the other hand, is seen to have shifted to an appreciably lower level, in relation to world industrial activity from 1921 to 1930, than that obtaining before World War I. This discrepancy persisted, and was even intensified, when a regular relationship was re-established in about 1934 after the disturbances to the curves at the time of the 1930 depression.

Rough estimates indicate that the percentage decline in the volume of trade in manufactures, in comparison with what would have been expected if the prewar relationship had continued, was about the same in each period as the percentage decline in the purchasing power of agricultural products for manufactured goods. Since the balance was maintained by a decline in the volume of trade in manufactures, it appears that the import demand of the industrialized countries was relatively unaffected by the fall in agricultural prices, but that they obtained their import requirements of agricultural products in exchange for smaller exports of manufactures than before.[10]

The reverse adjustment appears to have occurred after World War II. In this case the recovery in the relative prices of agricultural products was reflected, not so much in a change in the volume of trade in manufactures (this continued to show about the same relation to the level of world economic activity as in the immediate prewar years), as by a decline in the volume of trade of agricultural products relative to the level of world economic activity.

The lower volume of international trade continued even after the emergence of agricultural surpluses, and from 1949 onward cannot be accounted for by the postwar food shortages.

The reasons for this different reaction are not yet clear. They may, however, reflect the much increased importance of manufacturing industry in the world economy, and in particular the resolve of governments to maintain the highest possible level of imports of certain categories of manufactures, notably capital goods, in order to expedite economic recovery and development, even at the cost of some shortage of foodstuffs, etc.

Yet another difference may be noted between the reactions after World War I and World War II. After the second war the shift in the relative volumes of agricultural and manufacturing trade was considerably greater than was necessary to compensate for the shift in price relations. So much is evident from the data in Figure III-4. It thus appears that other factors also played a part. For example, some forms of economic aid may have enabled some countries to raise their imports of manufactures, including capital goods, well above the level which would have been possible from their unaided earnings of foreign currency.

It would be an over-simplification to conclude from these findings that (apart from such special economic aid) the level of earnings (in real terms) from agricultural exports mainly determines the level of trade in manufactures, or alternatively, that the relative volume of trade in manufactures mainly determines the price of agricultural products in foreign trade. No doubt the level of trade in each sector reacts upon the other, while both would be stimulated by a high level of economic activity.

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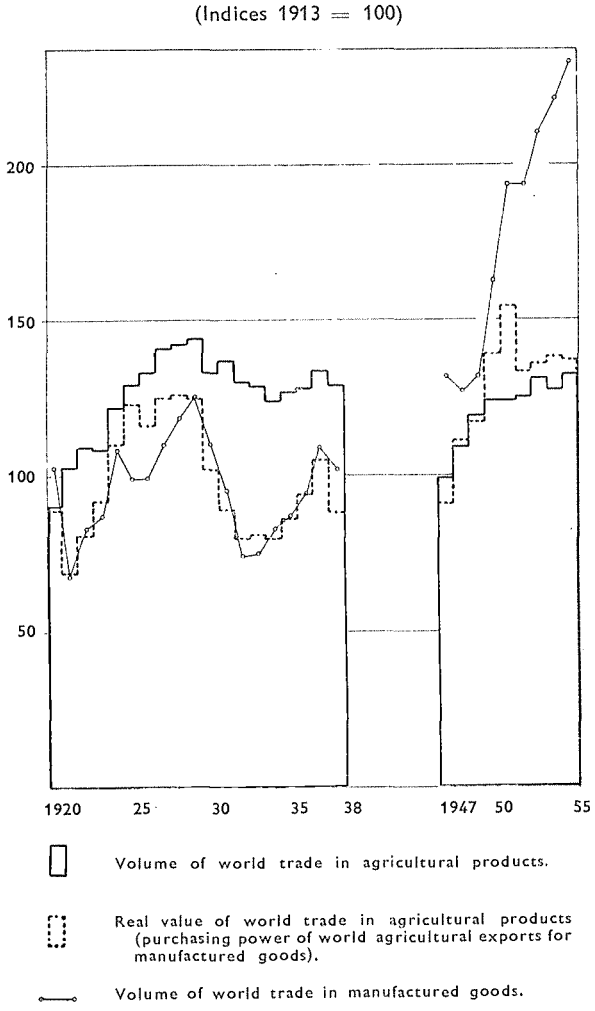
[10]The volume of trade in primary products as a whole (not included to avoid overloading the chart) also showed a downward shift to a position intermediate to those for agricultural products and manufactures. It appears therefore that the volume of trade in primary products of non-agricultural origin declined in the same way as the volume of manufactures.

Nevertheless there are some indications that the level of earnings from agricultural exports has more influence on the level of trade in manufactures than the reverse relation. This is the more generally held view and on the whole seems reasonable. As a rule, agricultural exporting countries are weaker in economic resources than industrialized countries and must adjust their purchases more closely to their year to year earnings.

Thus, the real value of world trade in agricultural products (i.e., their purchasing power for manufactured goods) moved closely in step with the volume of trade in manufactures, especially between the wars (Figure III-6). The reverse relation (real value of world trade in manufactures in comparison with volume of trade in agricultural products) is found to be less close, though somewhat improved by a time lag of about two years.

FIGURE III-6. Volume of World Trade in Manufactured Goods in Comparison with Volume and Real Value of World Trade in Agricultural Products



CHANGES IN THE UNIT VALUE, VOLUME AND TOTAL VALUE OF TRADE FOR INDIVIDUAL COMMODITIES

Changes in Unit Values for Individual Commodities

Unit values and terms of trade for agricultural products as a whole are bound to be somewhat generalized conceptions, and of more practical interest are the trends in prices or purchasing power of particular agricultural commodities. Table III-4 sets out indices of the purchasing power of some important agricultural, forest, and fisheries commodities in international markets since 1913.

It has been found convenient to present the data for individual commodities in a somewhat different form from that used for agricultural products as a whole. In the first place the original unit values estimated in U.S. dollars have been deflated by a general price index rather than a price index of manufactured goods.[11] The figures in Table III-4 thus show the purchasing power of a ton of each commodity for all products entering international trade, rather than for manufactured goods alone. This method was less suitable when considering agricultural products as a whole since they themselves weigh so heavily in a general index of unit values.

Secondly it was thought better to relate the indices to a prewar base period in order to bring out more clearly the trends of prices since World War II. Any recent differences between commodities tend to be obscured if a postwar base period is used. The choice of a suitable prewar base, however, was not easy. The immediate postwar years were ruled out because of the abnormal price relations at that time. The late nineteen-twenties, or even 1913, would have been better but seemed rather remote. Finally an average for the whole period 1920-38 was selected. This base period includes both years of prosperity and of depression, and although not free from objections,

[11] Column (*a*) rather than column (*c*) of Table III-1 above.

TABLE III-4. AVERAGE PURCHASING POWER PER UNIT OF CERTAIN AGRICULTURAL PRODUCTS IN WORLD TRADE: 1913-55

(Average unit value deflated by general price index)

PRODUCT	1913	1920	1921-22	1923-26	1927-30	1931-34	1935-38	1947-49	1950-51	1952-53	1954-55
	Indices: 1920-38 = 100										
Wheat	111	115	111	105	104	79	103	119	98	97	85
Rice (milled)	110	89	99	111	119	85	89	184	149	188	160
Maize	110	101	100	107	111	84	98	140	119	134	113
Barley	115	119	103	101	107	87	98	115	98	105	83
Coarse grains	112	108	102	106	111	84	97	133	113	124	102
ALL ABOVE CEREALS	112	109	108	107	109	81	96	132	108	115	100
Sugar (raw and refined)	98	221	104	112	82	85	88	95	101	93	91
Edible vegetable oils and oilseeds (oil equivalent)	158	112	99	108	112	88	90	112	114	102	102
Linseed and oil (oil equivalent)	103	115	97	109	111	86	93	164	110	102	68
Oilcake	110	87	105	98	110	95	97	144	105	112	132
Apples	77	75	106	85	104	113	102	76	65	65	76
Oranges	61	84	97	81	109	115	100	101	79	74	79
Bananas	77	61	86	82	97	132	106	159	160	148	153
Dried Raisins	80	87	123	91	93	116	92	72	64	62	63
Beef and veal	107	87	95	85	109	112	100	89	106	106	120
Mutton and lamb	154	55	100	98	99	105	109	63	56	63	84
Bacon	100	81	108	94	98	94	115	89	77	81	75
ALL MEAT	111	79	101	90	100	105	109	80	79	83	91
Butter	110	89	111	108	114	89	88	78	67	72	76
Cheese	97	73	98	101	111	101	95	89	73	75	78
Eggs (in the shell)	95	113	115	99	106	99	86	91	71	78	71
ALL LIVESTOCK PRODUCTS	104	85	103	96	105	101	100	86	76	80	85
Salted cod	...	86	105	100	107	101	94	144	122	134	[1]144
Salted herring	...	57	68	87	100	119	120	133	107	116	[1]115
Fish meal	...	75	78	96	112	114	95	126	119	104	[1]126
Coffee	115	77	74	117	128	102	72	89	165	174	202
Tea	81	45	69	100	107	109	114	91	84	78	116
Cocoa	208	108	90	95	131	87	89	159	180	181	257
Wine	118	78	92	68	90	139	113	144	92	87	77
Pepper (black and white)	96	65	49	79	185	108	61	250	666	489	198
Tobacco (unmanufactured)	84	80	97	102	90	98	117	99	97	98	107
Cotton (raw)	100	132	106	125	103	79	82	99	125	106	101
Jute (raw)	126	85	89	122	109	88	91	[2]149	[2]146	[2]116	[2]105
Wool (greasy)	96	78	66	117	113	91	103	88	180	131	137
Rubber (natural)	433	111	72	166	108	46	91	47	90	68	65
Sawn softwood	88	85	94	94	98	103	112	152	154	164	[1]162
Mechanical wood pulp	87	121	119	104	94	96	92	134	129	140	[1]127
Chemical wood pulp	86	116	112	96	99	97	99	133	159	147	[1]131
Newsprint	94	93	123	106	100	105	80	85	91	104	[1]109

NOTE. See footnote to Table III-1 on the periods selected.

[1]1954 only: 1955 data not yet available.

[2]Excluding trade between India and Pakistan for comparability with earlier figures.

seemed on the whole to be the best that could be found.

The figures in Table III-4 present several points of interest. In spite of the rapid short-term fluctuations of agricultural prices, it is noteworthy that in the long run the purchasing power of many commodities has remained remarkably stable. For example, comparing 1913 with 1952/53, the purchasing power on international markets of a ton of sugar, beef, linseed, oilcake, cotton, tea and cereals as a whole has changed by not more than 5 to 6 percent. Equally, however, some of the short-term movements are very marked. Thus the purchasing power of oilcake averaged some 40 percent more in 1947-49 than in 1950-51, while prices of tea and beef have risen considerably since 1952-53. Some of the larger price differences now apparent, e.g., for coffee and wool, may similarly turn out to be the temporary result of short-term variations of demand and supply.

There are, however, a few more definite trends. Relative values of most livestock products (beef is an exception) seem to have declined fairly consistently, and the purchasing power of livestock products as a whole was about one quarter less in 1952-53 than in 1913. More dramatically, the purchasing power of rubber had fallen by 1947-49 to little more than one tenth of its level in 1913. On the other hand, unit values of forest products, including sawn softwood, wood pulp and newsprint show a fairly consistent rising trend.

It is also noteworthy that a limited number of products bore the worst brunt of the fall in agricultural prices during the depression of the nineteen-thirties. In the first four years of the depression (1931-34) the purchasing power of cereals, sugar, cotton and cocoa fell on average by some 15 to 20 percent compared with the average for the whole interwar period, while for rubber the fall was nearly 60 percent. During the latter part of the depression relative values of cereals and rubber improved, but there were marked falls in the purchasing power of some other products, especially of coffee. On the other hand many commodities, including most livestock products (except butter and latterly, eggs), tea, tobacco, and forest products (except newsprint) suffered relatively little loss of purchasing power on world markets during the nineteen-thirties. Certainly their prices fell, but not more than the fall in prices generally, so that they suffered no loss in real value.

Finally the figures in Table III-4 reflect the familiar price developments of recent years since World War II, e.g., the temporary effects of the postwar food shortage, the Korean boom, the recent enhanced values on export markets of rice, coffee, cocoa, wool and softwood, and the relative weakness of the prices of some other commodities notably livestock products and natural rubber.

In considering future export prospects, these price trends, particularly the more recent developments, are of much interest. Ultimately, however, the total import earnings of a commodity are even more important from this point of view than the changes in its price level. A high price during a temporary scarcity is obviously less significant than a long-term expansion in total trade and total earnings due to the steady growth of world demand. The data on the unit values of the main agricultural commodities in Table III-4 should therefore be considered in relation to the comparable figures in Table III-5, which show developments in the volume of world trade in these products. Still more significant is Table III-6 which combines the data in the two foregoing tables, and shows changes in the real purchasing power of total world exports of the particular products : that is to say their real earning power for foreign exchange.

Changes in the Volume of Trade

Looking first at the volume of trade, marked differences are apparent in the long-term trends for different commodities. There is a group, of which rubber is the outstanding example, which show a more or less continuous growth in the volume of trade during the 40 years covered by the data. Other commodities in this group include coffee, cocoa, tea, wool, sugar, oranges, wood pulp and newsprint.

The volume of world trade in cereals as a whole shows no very marked trend up or down throughout the 40-year period. Within the cereal group there are changes ; e.g., since World War II the volume of trade in rice and maize has fallen and that of wheat and barley increased ; but the total volume of world trade in cereals has remained remarkably steady.

In another group of commodities the volume of trade rose to a peak during the interwar

TABLE III-5. TOTAL VOLUME OF WORLD TRADE IN CERTAIN AGRICULTURAL PRODUCTS: 1913-55

PRODUCT	1913	1920	1921-22	1923-26	1927-30	1931-34	1935-38	1947-49	1950-51	1952-53	1954-55
	Indices: 1920-38 = 100										
Wheat	102	99	102	102	115	100	83	109	125	131	117
Rice (milled equivalent)	97	62	86	99	108	109	100	49	64	64	65
Maize	78	66	90	78	104	112	119	63	51	55	56
Barley	205	49	70	103	132	103	90	88	118	194	180
Coarse grains	115	60	84	85	111	111	112	70	68	90	86
ALL ABOVE CEREALS	100	83	94	98	111	104	94	91	94	102	96
Sugar (raw and refined)	67	72	89	103	115	96	98	95	112	122	123
Edible vegetable oils and oilseeds (oil equivalent)	68	66	68	87	108	107	122	83	110	103	118
Linseed and oil (oil equivalent)	86	70	90	96	109	104	104	38	66	39	76
Oilcake	...	67	80	107	117	102	93	43	59	63	80
Apples	52	73	55	101	111	117	100	61	83	90	107
Oranges	63	36	58	78	104	127	128	104	140	167	183
Bananas	54	61	69	90	109	102	123	100	110	123	141
Dried raisins	86	72	62	95	109	101	122	98	101	128	123
Beef and veal	73	104	92	125	108	86	84	73	51	46	55
Mutton and lamb	79	118	103	86	93	109	106	126	103	115	110
Bacon	62	72	74	98	111	125	87	34	59	72	78
ALL MEAT	74	92	88	107	109	103	89	69	66	70	75
Butter	66	26	57	84	107	122	128	79	98	86	87
Cheese	84	76	85	103	116	102	93	95	120	117	121
Eggs (in the shell)	132	24	41	98	142	111	98	55	88	92	104
ALL LIVESTOCK PRODUCTS	84	58	72	101	117	107	100	70	82	81	86
Salted cod	...	90	89	106	120	95	87	65	82	81	[1]83
Salted herring	...	125	104	119	122	80	71	59	46	52	[1]60
Fish meal	...	56	28	41	119	138	149	99	330	442	[1]489
Coffee	83	81	86	92	101	105	114	127	123	134	129
Tea	88	83	82	97	109	105	102	95	103	110	119
Cocoa	47	82	81	91	94	103	126	113	132	124	119
Wine	94	68	68	92	109	116	108	75	98	112	147
Pepper (black and white)	69	60	98	98	92	107	114	61	49	57	102
Tobacco (unmanufactured)	71	98	91	96	112	97	100	89	99	97	105
Cotton (raw)	106	79	84	102	111	101	99	66	85	77	77
Jute (raw)	128	81	72	92	115	95	116	[2]60	[2]92	[2]92	[2]91
Wool (greasy basis)	86	81	104	91	103	103	106	119	110	119	115
Rubber (natural)[3]	15	47	48	70	107	121	141	199	263	249	254
Sawn softwood	103	73	72	113	126	89	94	62	88	81	102
Mechanical wood pulp	80	84	68	100	105	102	112	91	120	115	[1]139
Chemical wood pulp	42	52	49	78	101	112	146	128	159	148	192
Newsprint	23	42	51	82	115	103	139	185	216	228	246

[1]1954 only; 1955 data not yet available.
[2]Excluding trade between India and Pakistan for comparability with earlier figures.
[3]Excluding re-exports.

TABLE III-6. REAL VALUE (PURCHASING POWER) OF TOTAL WORLD TRADE IN CERTAIN AGRICULTURAL PRODUCTS: 1913-55

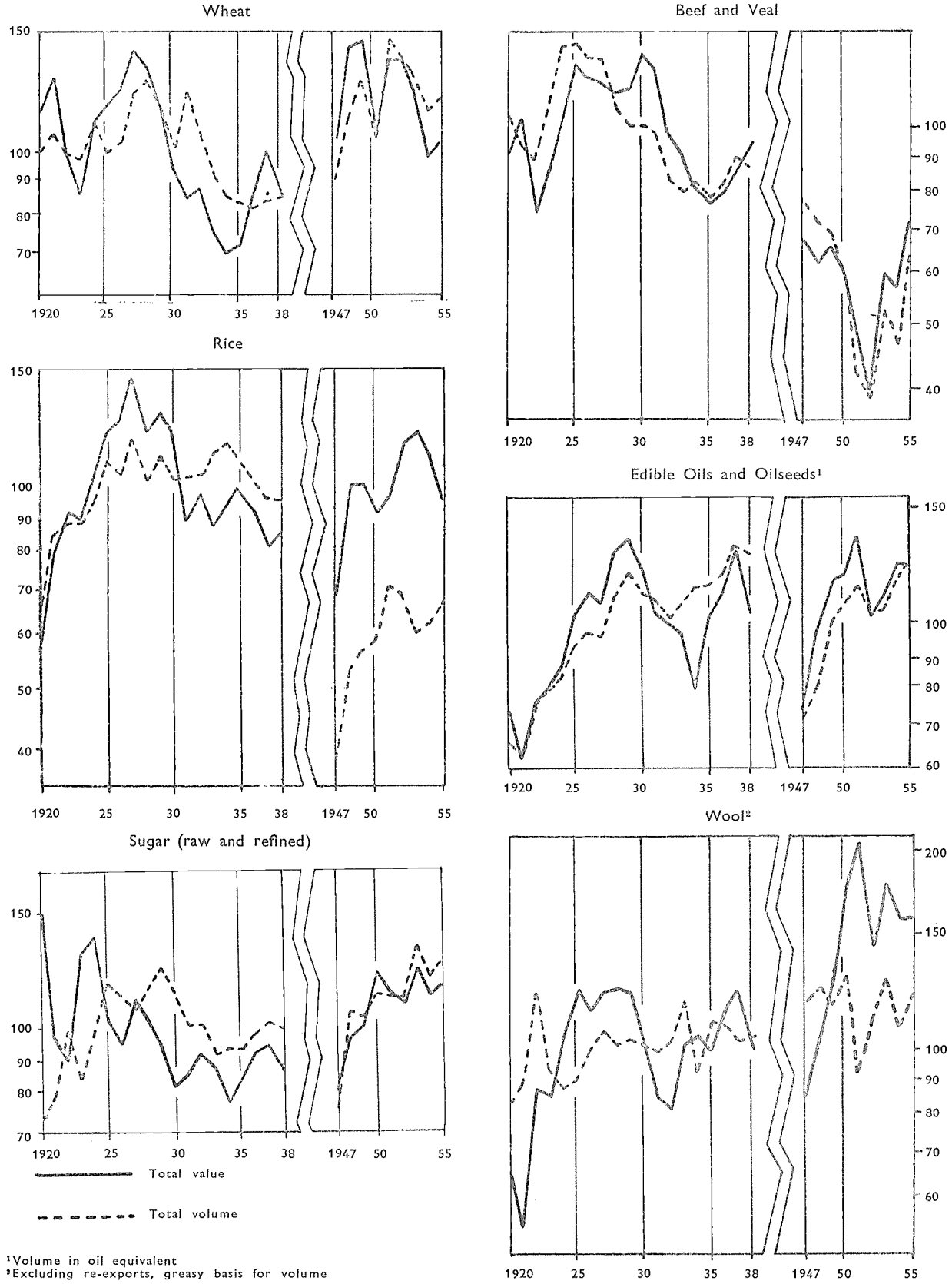
(Total Value of World Trade deflated by general price index)

PRODUCT	1913	1920	1921-22	1923-26	1927-30	1931-34	1935-38	1947-49	1950-51	1952-53	1954-55
	Indices: 1920-38 = 100										
Wheat	113	114	113	107	120	78	85	131	121	128	99
Rice	106	55	86	109	128	92	89	89	94	119	102
Maize	86	67	91	84	116	94	119	89	62	74	64
Barley	236	58	72	105	142	89	88	101	116	203	149
Coarse grains	130	65	86	90	123	93	110	92	78	112	89
ALL ABOVE CEREALS	112	91	102	106	122	84	90	120	101	118	95
Sugar (raw and refined)	68	165	93	116	97	85	89	92	117	117	115
Edible vegetable oils and oil seeds	109	75	68	95	123	94	111	95	126	105	121
Linseed and oil	89	82	88	105	120	89	97	62	74	40	51
Oilcake	...	58	84	104	129	96	90	61	61	71	105
Apples	40	55	57	86	115	132	100	44	53	58	80
Oranges	38	30	55	62	112	142	125	102	107	120	141
Bananas	41	37	59	71	105	133	128	156	173	179	212
Dried raisins	70	63	78	87	102	118	114	70	66	80	78
Beef and veal	79	91	88	108	118	98	85	65	54	50	67
Mutton and lamb	123	65	103	85	93	114	116	79	58	72	92
Bacon	63	59	81	93	111	116	101	31	46	59	59
ALL MEAT	83	73	89	97	110	108	98	55	52	58	71
Butter	74	23	64	92	123	109	114	63	67	63	67
Cheese	81	55	82	103	128	103	87	85	86	87	93
Eggs (in the shell)	126	28	47	99	151	111	84	50	62	72	74
ALL LIVESTOCK PRODUCTS	87	49	74	96	122	108	99	60	62	66	73
Salted cod	...	77	93	105	127	96	81	92	98	107	[1]119
Salted herring	...	74	73	107	127	99	88	81	50	62	[1]71
Fish meal	...	41	21	40	127	151	137	122	355	446	[1]599
Coffee	96	63	64	109	130	107	82	113	205	234	260
Tea	70	36	56	96	115	113	114	85	85	84	135
Cocoa	100	89	74	88	124	91	114	179	241	226	308
Wine	109	52	61	61	96	158	118	104	89	95	111
Pepper (black and white)	67	40	49	77	173	118	73	143	333	281	205
Tobacco (unmanufactured	60	78	89	98	100	95	117	88	95	95	112
Cotton (raw)	106	105	89	127	115	80	82	66	106	83	79
Jute (raw)	161	68	64	113	126	82	105	[2]91	[2]133	[2]102	[2]95
Wool	83	64	70	107	116	92	109	105	191	161	157
Rubber (natural)[3]	67	55	36	129	117	61	136	97	251	180	174
Sawn softwood	90	62	67	106	123	92	105	94	136	134	[1]159
Mechanical wood pulp	71	103	81	105	100	100	104	123	160	163	[1]171
Chemical wood pulp	37	61	54	75	102	109	146	171	260	217	[1]244
Newsprint	23	40	63	90	119	111	114	162	204	245	[1]268

[1]1954 only; 1955 data not yet available.
[2]Excluding trade between India and Pakistan for comparability with earlier figures.
[3]Excluding re-exports.

FIGURE III-7. Indices of the Volume and Total Value (in Real Terms) of World Trade in Certain Agricultural Products, 1920-55

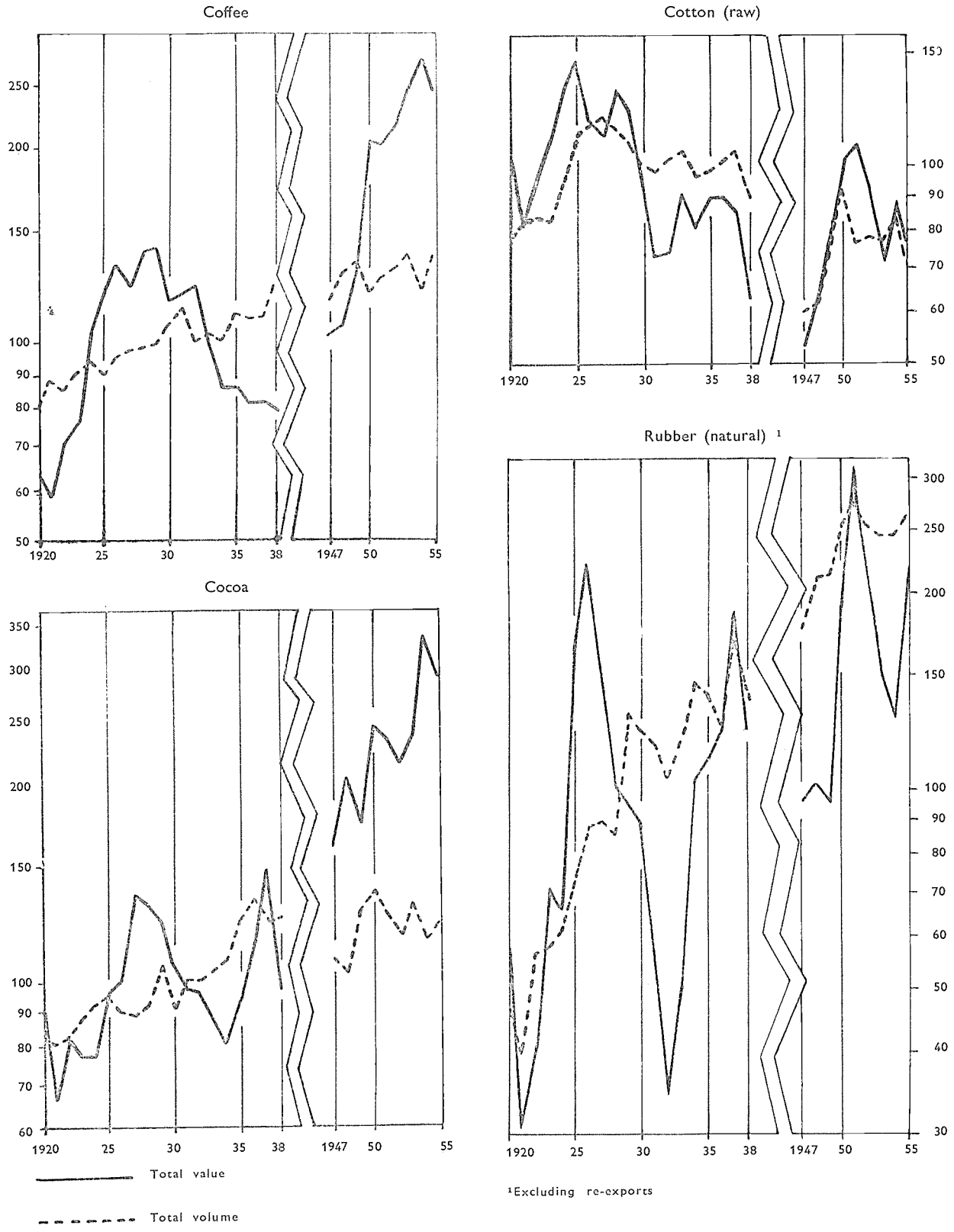
(Average 1920-38 = 100 ; semi-logarithmic scale)



[1]Volume in oil equivalent
[2]Excluding re-exports, greasy basis for volume

FIGURE III-7. (continued) Indices of the Volume and Total Value (in Real Terms) of World Trade in Certain Agricultural Products, 1920-55

(Average 1920-38 = 100 ; semi-logarithmic scale)



1Excluding re-exports

years which has barely been regained, as in the case of cheese, mutton and lamb, wine, dried raisins and possibly tobacco. Finally for a considerable number of products, including beef, eggs, bacon, butter, oilcake, apples, and cotton the volume of world trade since World War II has remained well below the peak reached during the interwar years.

Changes in the Total Purchasing Power of Agricultural Exports

Changes in the volume of trade give a valuable, but incomplete picture of the trend of world import demand. Thus if we take the group of commodities for which the volume of trade has shown a fairly continuous increase, there are some, e.g., coffee, cocoa, wool, and wood pulp, for which unit values currently stand well above their average level. The real "export earnings" of these products on world markets (or the real cost of world imports, according to the point of view) has therefore increased much more sharply than would be apparent from consideration of the volume of trade done. Pepper is a striking example. Although the volume of world trade in pepper was somewhat lower in 1952-53 than in 1913, because of increased import demand the unit value per ton (in real terms) had increased by about five times and the total value of all trade more than four times.

On the other hand, an increased volume of trade has been partly offset in other cases by a fall in real price levels. This is true of sugar, mutton and, until recently, of tea. The "export earnings" of these commodities has in fact been lower since World War II than the average between the wars, in spite of the greater volume of trade. The most striking case of all is that of rubber. Between 1913 and 1949 the volume of world trade in natural rubber (net of re-exports) increased by more than 14 times, but the real value of these exports increased by less than 50 percent, for in the meantime the average price per ton compared with other products had fallen to one tenth of its 1913 level. This is obviously an extreme example, for rubber was still only at the beginning of its industrial utilization in 1913.

Similarly, when the volume of world trade has contracted, the decline has sometimes been offset by increased real prices, as for rice, for which the volume of trade in 1954 was 38 percent below the interwar average while the real value of trade was 9 percent higher. Conversely a low volume of trade is sometimes intensified by a low level of real prices, as for apples, where the volume of world trade in, e.g., 1952 was 12 percent below the interwar average and the real value of trade 40 percent below, because of a decline of 30 percent in unit value. Examples of the development since 1913 of both the volume and total value of world trade in certain representative commodities are shown in Figure III-7.

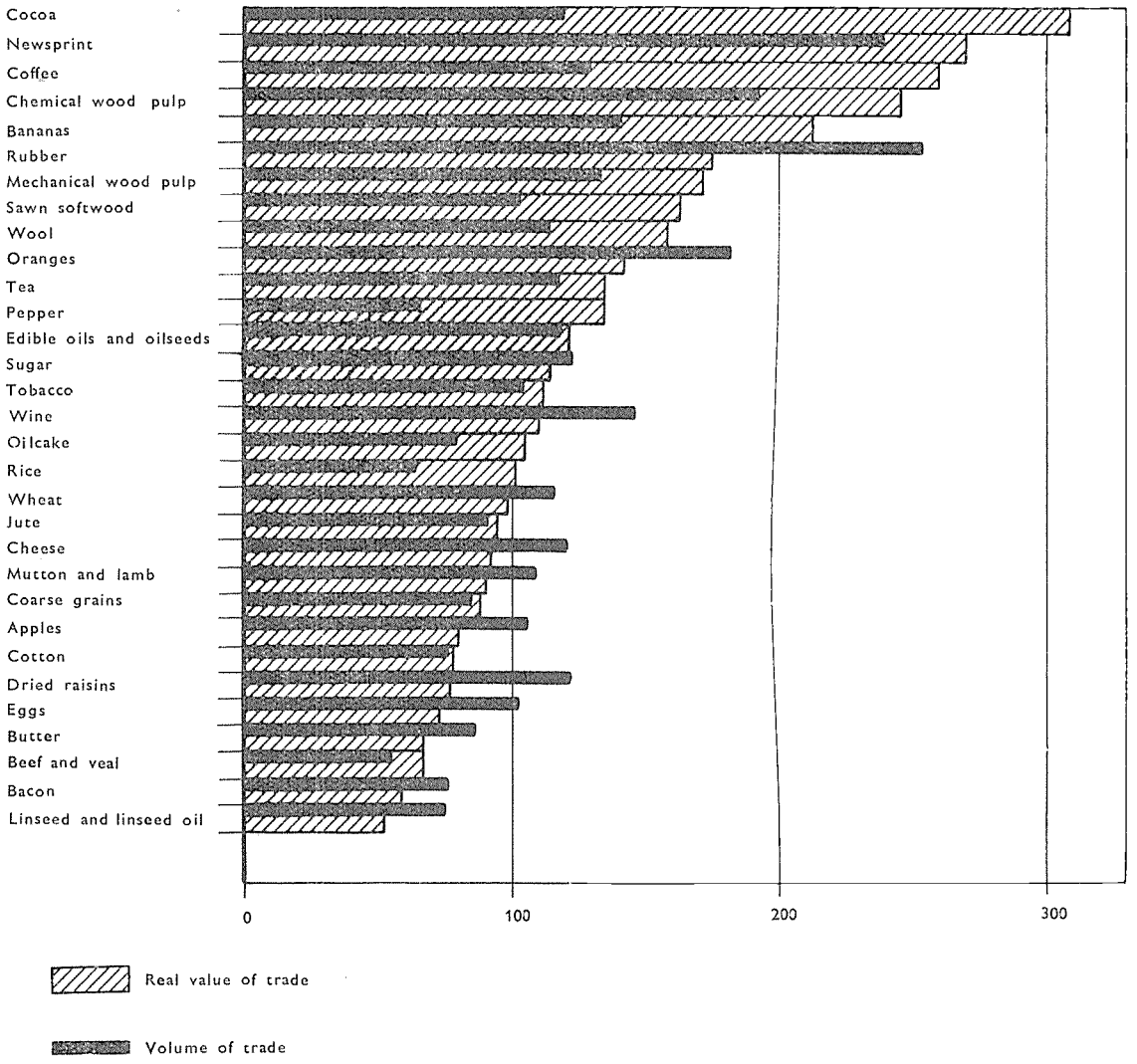
The relation between the curves of volume and real value will of course be largely governed by the price elasticity of demand on international markets of the particular commodity. Caution is needed, however, in drawing any conclusions on price elasticity from the data presented. It should be borne in mind that while for some products, e.g., cocoa or rubber, they embrace practically the whole world market, for others, e.g., rice, coarse grains, eggs, apples, only a small percentage of the world output enters export markets. International trade is therefore to some extent of a marginal character, even though some individual countries depend heavily on imports, both the volume of trade and the level of prices being largely influenced by the main bulk of supplies traded on domestic markets in the countries where they are produced.

FACTORS INFLUENCING THE INTERNATIONAL DEMAND FOR AGRICULTURAL PRODUCTS

In order to bring out more clearly recent trends in international trade, the data in the final column of Table III-6 are grouped below in order of magnitude. In effect they show the total (real) value of world trade in each commodity during the period 1954-55 as a percentage of the average during the interwar period (Table III-7). The same data are shown in Figure III-8 which includes also the volume of trade.

A certain pattern appears to emerge from this grouping. Most of the commodities in the first column of Table III-7 are seen to be commodities which are largely for export, and which in general cannot be produced economically in the main industrialized countries. Conversely

FIGURE III-8. Real Value and Volume of International Trade in Certain Agricultural Products, 1954/55 as a Percentage of 1920-38 Average



most products figuring in the final column can be fairly readily produced in the main industrialized countries; and only a small part of world production of these products enters into international trade. Commodities in the center columns usually fall between these two extremes. The recent expansion of world trade in barley appears at first to be an exception to this general rule, but it is counterbalanced by the decline of trade in maize, and the total value of world trade in coarse grains as a whole has not changed greatly from the interwar average. The most notable exception to the general trend is perhaps to be found in the rather modest expansion of world trade in tea.

For comparison with Table III-7, the percentage of total world production entering international trade during the period 1948-50 is shown in Table III-8 for all products for which reasonably good figures are available. The correspondence in the grouping of commodities in the two tables is seen to be fairly close. A closer agreement might result from a table showing imports of the commodity as a percentage of total consumption in Western Europe, North America and Japan.

These facts seem to provide a simple explanation of some recent trends in world trade. It seems evident that the growth of world demand as a result of rising populations, industrial production, and per caput incomes is reflected in the marked expansion since World War II in international trade for commodities such as coffee, which can neither be grown economi-

TABLE III-7. ANNUAL REAL VALUE OF WORLD TRADE IN CERTAIN AGRICULTURAL AND FOREST PRODUCTS IN 1954-55 AS A PERCENTAGE OF THE AVERAGE IN 1920-38

Over 150 percent	111-150 percent	91-110 percent	80-90 percent	Under 80 percent
Cocoa 308	Barley 149	Oilcakes . . . 105	Coarse grains . 89	Cotton 79
Newsprint . . [1]268	Oranges . . . 141	Rice 102	Apples 80	Dried raisins . 78
Coffee 260	Tea 135	Wheat 99		Eggs 74
Chemical wood-pulp . . . [1]248	Edible oils and oilseeds . . . 121	Jute[2] 95		All livestock products . . . 73
Bananas . . . 212	Sugar 115	All cereals . . 95		All meat . . . 71
Pepper 205	Tobacco . . . 112	Cheese 93		Butter 67
Rubber 174	Wine 111	Mutton and lamb 92		Beef and veal . 67
Mechanical wood pulp . . [1]171				Maize 64
Sawn softwood [1]159				Bacon 59
Wool 157				Linseed and linseed oil . . . 51

[1]1954 only; data for 1955 not yet available.
[2]Excluding trade between India and Pakistan.

cally in the main industrialized countries, where consumption is largest, nor replaced by natural or synthetic substitutes. If some degree of replacement is possible, as for rubber or butter, or oilcake (replaced by other protein feeding stuffs, or by herbage), the expansion of trade is more limited. Commodities such as cereals or livestock products, which can be produced more or less economically in the main consuming countries, show no such expansion of trade in response to increased demand. Evidently the increased demand must have been met primarily by increased production in the main consuming countries themselves.

To a large extent this would be a normal economic development. In recent years, however, it is likely to have been intensified both by national policies of self-sufficiency aimed directly at correcting an imbalance of foreign payments, and by price support policies, designed primarily to stabilize farm incomes, but which may in addition have tended to stimulate domestic agricultural production.

In Table III-9 the main agricultural commodities have been roughly grouped according to the difficulty of their production or replacement in the principal industrial countries, and indices of the total value of world trade

TABLE III-8. APPROXIMATE PERCENTAGE OF WORLD PRODUCTION[1] OF CERTAIN AGRICULTURAL COMMODITIES ENTERING INTERNATIONAL TRADE 1948-50

Over 50 Percent	25 to 30 Percent	10 to 25 Percent	Under 10 percent
Rubber 98	Jute. 44	Bananas 23	Barley 7
Cocoa 90	Sugar 44	Wheat 20	Maize 4
Coffee 90	Cotton. 43	Tobacco 21	Rice. 6
Wool 80	Edible vegetable oils and oilseeds. . . . . [2]31	Oranges 13	All cereals[3]. . . 10
Tea 78		Mutton and lamb 11	Apples. 4
Dried raisins . . 52			Beef. 3
			Eggs. 1

[1]Excluding production in the U.S.S.R., Eastern Europe and China.
[2]Olive oil, palm oil, palm kernels, soybeans, groundnuts and copra, all in oil equivalent.
[3]Wheat, rice, barley and maize.

TABLE III-9. AVERAGE ANNUAL VALUE (IN REAL TERMS) OF WORLD TRADE IN CERTAIN AGRICULTURAL PRODUCTS, GROUPED ACCORDING TO HOW READILY THEY MAY BE PRODUCED IN THE MAIN INDUSTRIAL REGIONS * OR REPLACED BY SUBSTITUTES

PERIOD	All Agricultural Products	Agricultural Products readily produced in the industrialized countries[1]	Agricultural products readily grown in some but not all the main industrialized countries		Agricultural products not readily grown in the main industrialized countries		Manufactured Goods
			(a) which can be partly replaced by natural or synthetic substitutes[2]	(b) which cannot be replaced to any extent by substitutes[3]	(a) which can be partly replaced by natural or synthetic substitutes[4]	(b) which cannot be replaced to any extent by substitutes[5]	
	Indices 1920-38 = 100						
1913	92	94	...	84	85	85	93
1920	83	92	100	71	62	56	98
1921-22	81	90	89	74	59	62	82
1923-26	106	103	125	92	114	100	96
1927-30	117	116	117	114	117	124	115
1931-34	93	95	82	100	82	109	94
1935-38	98	94	83	114	117	97	105
1947-49	92	94	65	92	103	115	115
1950-51	119	92	101	111	209	175	147
1952-53	115	99	82	102	163	189	174
1954-55	117	92	81	118	158	225	196

*Taken as North America, Western Europe and Japan.
[1]Cereals, sugar, livestock products, linseed, apples.
[2]Cotton, oilcake.
[3]Edible oilseeds, oranges, dried raisins, tobacco, wine.
[4]Rubber, wool, jute.
[5]Coffee, cocoa, tea, bananas, pepper.

(in real terms) calculated for each group. The figures when generalized in this way are seen to be in line with the above suggestion. It is also evident, however, that the divergences between the rate of growth of world trade for the different categories of agricultural products has become much more marked since World War II.

World trade in each group or commodities is seen to have developed at more or less the same rate from 1913 to 1930, though there are disturbances due to the uneven impact of World War I. The differences begin to become apparent during the depression of the nineteen-thirties with the trend toward national self-sufficiency. But the main effect is seen only from 1947 onwards.

The Relative Growth of Trade in Agricultural Products and Manufactured Goods

Attention has been drawn in earlier FAO reports to the relative stagnation of world trade in agricultural products as a whole since World War II, compared with the rapid expansion of trade in manufactured goods. The volume of agricultural trade has barely regained the depressed level of the nineteen-thirties, and if its total value has increased, it is only because of the improvement in the terms of trade for agricultural products discussed earlier. In contrast, the volume of trade in manufactured goods has roughly doubled since the prewar period and there has been a comparable increase in its total value.

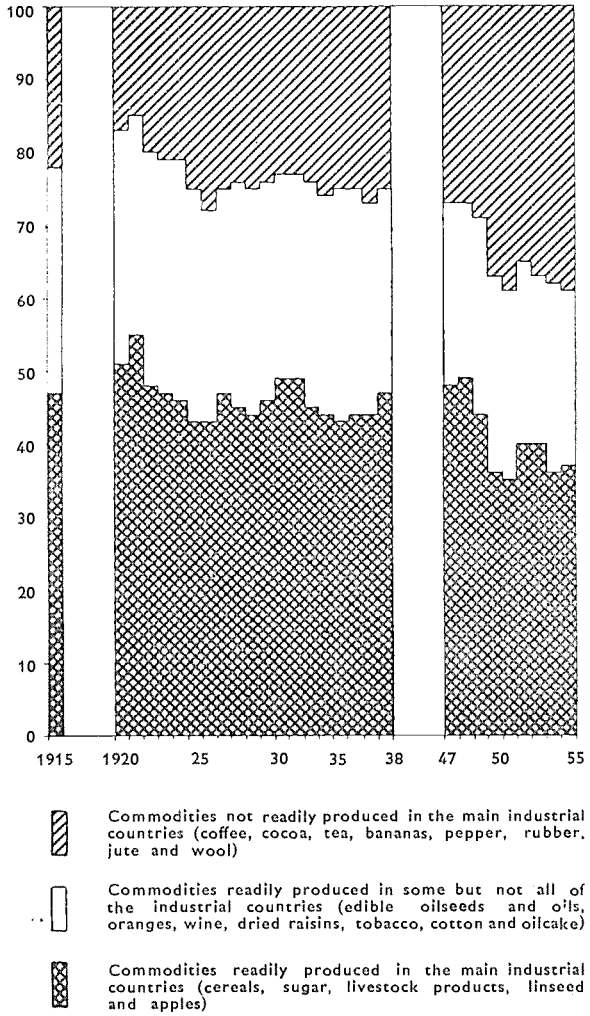
From the indices in Table III-9, however, it is clear that while the expansion of trade in manufactured goods has far out-distanced the growth of trade in agricultural products generally, this is almost entirely due to the slow growth, or even the decline of trade in commodities which can be easily produced in the main industrialized countries, or replaced by domestically produced substitutes. The expansion of trade in commodities such as cocoa and bananas, which these countries cannot produce for themselves, has more or less matched the expansion of world trade in

manufactured goods. Both appear to be directly related to the growth of world demand.

Changes in the Composition of International Trade in Agricultural Products

The divergent rates of growth of international trade in agricultural products have inevitably led to changes in the average composition of world trade. In 1913 the products, mainly tropical, which cannot be economically produced in the main industrialized countries (groups 4 and 5 in Table III-9), accounted for 22 percent of the total value of world trade in the whole range of commodities included in this analysis (Table III-6). By 1929 their share had risen to 25 percent, by 1937 to 27 percent, while in the years 1952-53 it averaged 36 percent (Figure III-9).

FIGURE III-9. Changes in the Composition of World Trade in Agricultural Products



Conversely the share of the commodities in group 1 of Table III-9, those which can be economically produced in the main industrialized countries, has declined from 47 percent in 1913 to 40 percent in 1952-53, though it is noteworthy how the share of these commodities, mainly staple foodstuffs, recovered temporarily during the periods of shortage which followed the two world wars.

The change in the average composition of world trade in agricultural products reflects also the growing importance of the United States. Apart from wool and forest products,[12] that country imports hardly at all the temperate and semitropical products which still account for the largest sector of world agricultural trade. For many of these products indeed the United States is an exporter. The greatly increased American demand has thus had its main effect in the international market for tropical products, though this effect has sometimes been greatly modified by developments in the American economy itself, such as the expansion of domestic oilseed production or the production of synthetic rubber. The relatively more rapid expansion of the United States economy and demand in comparison with the growth in the world as a whole, has thus reinforced the trend toward greater agricultural self-sufficiency.

The Decline in the Percentage of Agricultural Production Entering International Trade

Another result of the trends discussed above is that the percentage of the world's agricultural production entering international trade has shown a gradual decline. Statistics of world production in particular do not extend over a long enough period to show the long-term trend for more than a few commodities (Table III-10), but for most of these the downward drift is unmistakable. The general trend, however, has been temporarily interrupted, e.g., by war damage and crop failures, as for wheat after World War II, and also at times when serious overproduction has led to the piling up of unsaleable and unexportable surpluses as of coffee during the late nineteen-thirties.

[12]Forest products are not included in Table III-9 and Figure III-9.

TABLE III-10. PERCENTAGE OF WORLD[1] PRODUCTION OF CERTAIN AGRICULTURAL COMMODITIES ENTERING INTERNATIONAL TRADE, 1909-13 TO 1951-55

COMMODITY	1909-13	1924-28	1925-33	1934-38	1948-50	1951-55
	Percentage					
Cotton	78	66	65	57	43	38
Sugar[2]	47	58	55	51	44	39
Tobacco	42	29	26	25	21	22
Coffee	...	81	67	68	90	80
Cocoa	...	...	97	95	90	94
Wheat	20	24	20	16	20	19
Rice	14	16	16	15	6	6
Coarse grains	6	7	7	7	4	5

[1]Excluding U.S.S.R. and China. — [2] Including trade between U.S.A. and its territories.

RELATIONS BETWEEN CHANGES IN THE LEVEL OF ECONOMIC ACTIVITY AND THE LEVEL OF INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

The wide differences which have occurred in recent years in the rate of growth of international trade in the various agricultural products thus seem to be the result of two contrary influences : on the one hand the expansionist effect of the growing world economy, and on the other the growing trend toward national self-sufficiency and other factors tending to restrict the growth of international trade in a large number of agricultural commodities.

It is of interest to consider whether any relationships can be established between the growth of world economic activity and demand and the level of world trade, particularly for those commodities in which international trade is expanding, and to see if any indications can be obtained in this way of the likely future rate of growth of international markets. If so, it should also become possible to apply in world trade the methods of price analysis and price forecasting already widely used in domestic markets, notably in the United States.

In these last sections of the chapter no more than a preliminary examination can be attempted. But if the results of this first reconnaissance seem promising, the broad outline can be filled in by more detailed studies, commodity by commodity, or region by region.

The method adopted below is extremely simple. As in Figure III-5, the UN index of manufacturing production, linked with a similar index of the League of Nations, has been used as an indicator of world economic activity and world demand. These indices do not cover manufacturing production in the U.S.S.R. and other Communist countries, but since these countries' imports of agricultural products from the rest of the world are still relatively small, the omission probably improves the value of the index as an indicator of the international demand for agricultural products.

For the same reason, it has been found better to use indices which also exclude industrial production in the United States, as an indicator of the demand for those commodities not normally imported into that country.

Indices of the volume of international trade in each commodity and also indices of the total real value of such trade, i.e., after adjustment to eliminate the influence of fluctuations in general price levels, have been plotted, year by year, against the indices of world economic activity.[13]

In most instances, indices of total manufacturing production and total international trade have been used in preference to per caput data. Although the latter might have enabled some conclusions to be drawn on how the levels of international trade and industrial production were related after eliminating that part of the relationship resulting from the increase of population, this was not the purpose of this part of the enquiry. It was rather to see whether the level of international trade in each product showed any regular relationship to the growth of the world economy as a whole, including any part due to the increase of population.

[13]The UN/League of Nations indices of the average unit value of all products moving in international trade (as shown in Figure III-1) have been used for this adjustment.

Nevertheless, for a number of commodities where comparisons were made using per caput data the same general conclusions emerged.

As a rule, the clearest relationships were obtained between the indicator of demand and the real value of international trade, though in some instances a closer relation was found with the volume of trade. This appears to depend mainly on the price elasticity of the particular products, but partly also on the elasticity of the supply available for export. The production of some commodities, notably annual crops, can be varied fairly rapidly in accordance with changes in demand, while for other commodities, including tree crops and some livestock products, the time lag in production is considerable, so that the current supply tends to reflect the demand some years earlier. Again, for some commodities the quantity exported can be adjusted to short-term fluctuations in demand by storage, by changes in domestic prices and consumption in the exporting countries, or where production is not essentially seasonal, as for rubber, tea or beef, by adjusting the level of harvesting or marketing. For other commodities no such adjustment of supplies is possible, because of their perishability, of a lack of resources or of facilities for storage on the part of the exporters, or because of the small size of the domestic market in exporting countries. In such cases there is a correspondingly greater fluctuation of world prices for the same degree of price elasticity.

Yet another factor is the end use of the particular commodity. For example, since rubber tires account for only a small part of the total cost of automobiles and since jute packing material is normally inexpensive compared with the value of the goods it protects, the consumption of these raw materials appears in the short run to be relatively unaffected by price changes. The volume rather than the value of trade thus tends to show the closer relationship with the level of industrial activity.

Commodities Showing a Marked Expansion of Trade

Cocoa. Cocoa, as the commodity showing the greatest postwar expansion in the real value of international trade, may be taken as a first example. There was a rather steady rise in the volume of trade in cocoa throughout the interwar period (Figure III-7), and this rising trend is apparent also in Figure III-10A, where indices of the volume of world trade are plotted against indices of world manufacturing production. The break in the curve between 1930 and 1932 reflects the sharp decline in manufacturing production during the depression, while the volume of world trade in cocoa continued to rise.

After World War II there was little further increase in the volume of world trade in cocoa, but the growth of world demand was reflected in a sharp rise in prices. In consequence the real value of world trade continued to bear about the same relation to the index of world manufacturing activity as before the war (Figure III-10B). The points from 1920 to 1955 group themselves fairly closely about the same regression line, and the fit is still closer if moving two-year averages are used instead of data for single calendar years, in order to minimize the effect of inventory changes. Deviations from the regression line can be shown to be due mainly to changes in per caput supplies, and by such means an average world price has been calculated year by year which agrees rather closely with the actual level.

Coffee. Similar comparisons of the volume and real value of world trade in coffee with the index of world manufacturing production are shown in Figure III-11A and 11B. The data in this instance are shown on a per caput basis, but charts based on total rather than per caput figures show closely similar relationships.

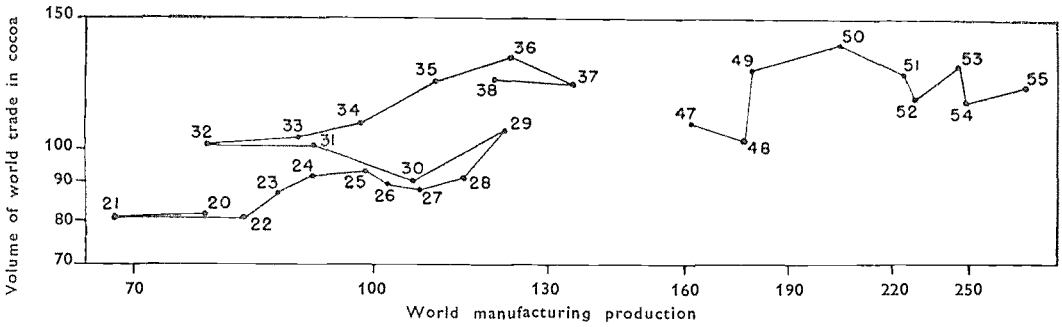
The growth in the volume of trade in coffee between the wars was slower than for cocoa, and on a per caput basis rose by only 13 percent from 1920-22 to 1935-38, compared with 30 percent for cocoa. Since World War II the per caput volume of trade has shown no expansion. The chart relating the per caput volume of world trade with per caput world manufacturing production thus shows little trend up or down.

As with cocoa, however, the growth of world demand since World War II has been reflected in a marked increase in the real price and hence the total value of trade. A fairly regular relation is apparent between indices of the per caput real value of trade and per caput world manufacturing production from 1920 to 1930, and, again, (though at a lower level) after World War II. From 1931 to 1933 the value

FIGURE III-10. World Trade in Cocoa in Relation to Level of World Manufacturing Production Taken as an Indicator of Demand

1920-38 = 100 ; logarithmic scale

A. Volume of world trade in cocoa



B. Real value of world trade in cocoa

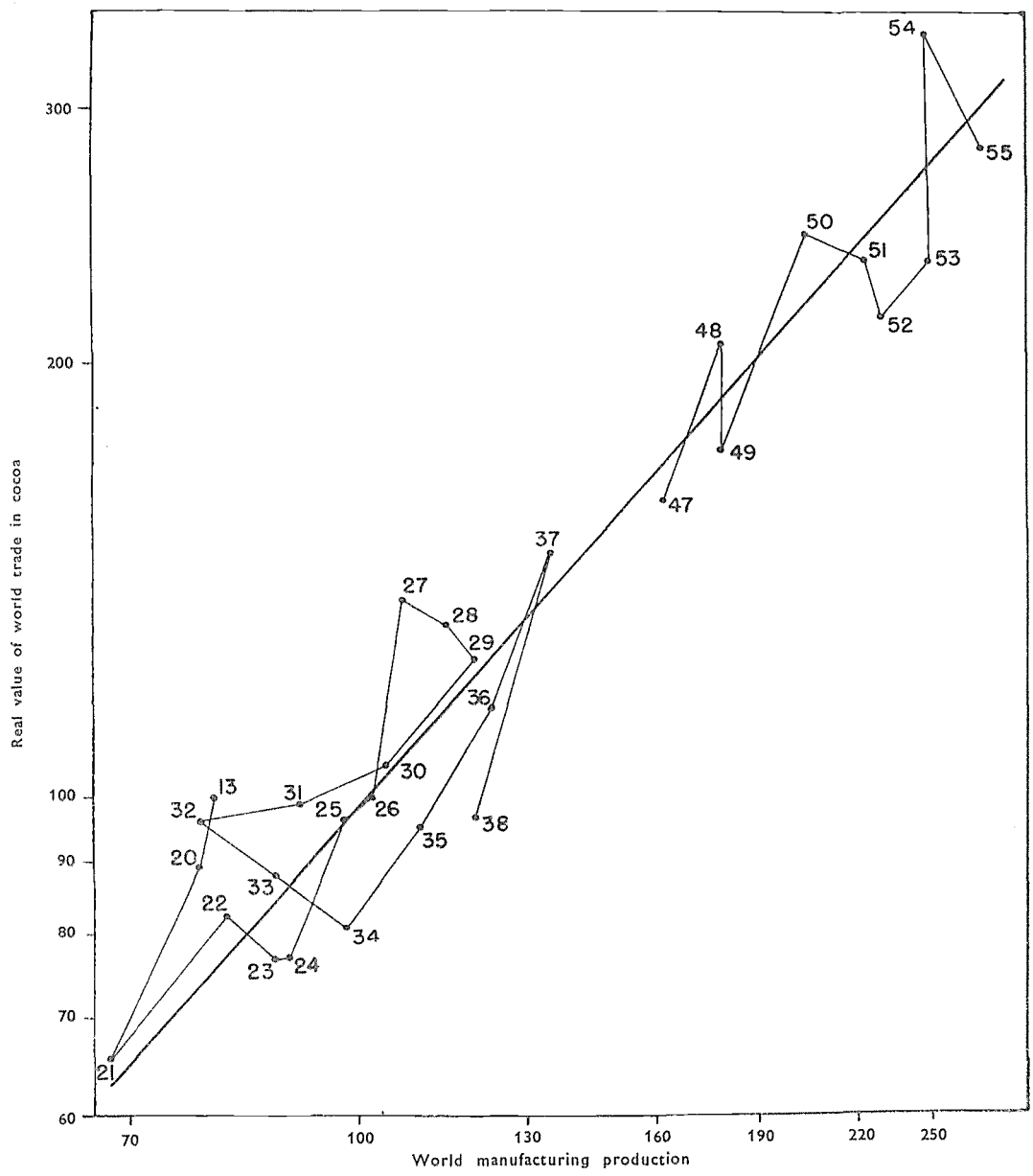
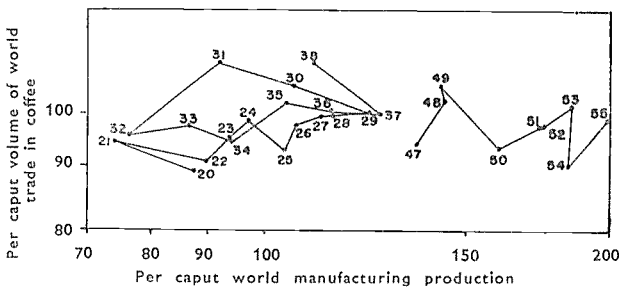


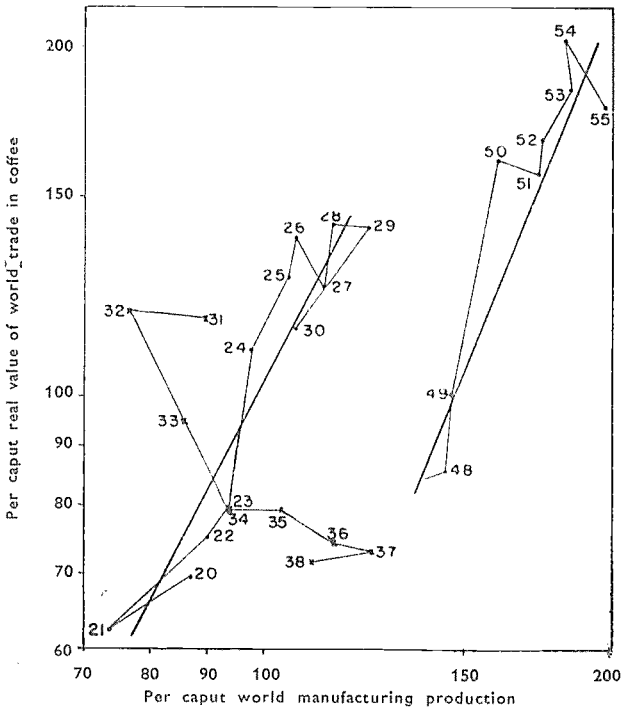
FIGURE III-11. Per Caput World Trade in Coffee in Relation to Per Caput World Manufacturing Production

(1920-38 = 100 ; logarithmic scale)

A. Per caput volume of world trade in coffee



B. Per caput real value of world trade in coffee



of trade was higher than would have been expected from the relationship during the nineteen-twenties ; that is to say, during the early years of the depression, the fall in the real value of international shipments of coffee was less steep than the fall in industrial activity. This is a phenomenon which occurs to a greater or lesser degree in nearly all commodities, and is probably largely in the nature of a time lag. The magnitude and duration of the depression was probably not at first foreseen, and merchants continued to ship and consumers to buy, sometimes perhaps from savings, at about their accustomed levels. Only after a time was the full adjustment made to more straitened circumstances.

The gradual recovery of economic activity after 1932 was not, however, reflected in any recovery in the real value of per caput international trade in coffee. From 1933 until the outbreak of World War II coffee was in heavy surplus and its landed cost so low that it formed a very small part of the final cost to the consumer. In 1938, for example, the landed cost of coffee in the United States has been estimated at about 40 percent of the retail price, compared with 77 percent in 1951. During the late 'thirties, changes in international prices thus had little influence on the retail price and consequently on the demand.

In view of the preponderant importance of the United States as an importer of coffee, separate charts relating the real value of trade with the level of manufacturing production have been made for the United States and for the rest of the world. The relationships which emerge in both cases closely resemble that in Figure III-11B, and the same forces thus appear to have operated in both areas.

The factors influencing the development of world trade in coffee seem more complex than for cocoa, and evidently require much deeper analysis than is possible here. International trade in both commodities, however, shows the same strong positive reaction to growth of world economic activity, and, at least until 1955, there is no evidence of any change in this respect.

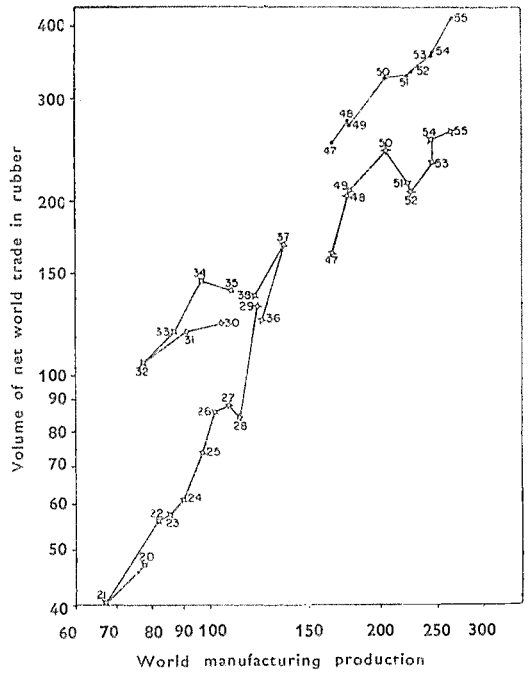
Rubber. For rubber the development of international trade is further complicated by the increasing substitution of synthetic for natural rubber. Charts relating the total volume and value of world trade (net of re-exports) with world manufacturing production are shown in Figure III-12A and 12B. In this instance the volume of world trade is found to show a rather close relation to the level of world economic activity and the relation becomes still closer if the consumption of synthetic rubber is included for the years after World War II.

The real value of world trade also shows a certain, though less close, relation to the index of world manufacturing production prior to World War II, though the three points for 1925-27 are well above the regression lines for both the volume and value of trade. They

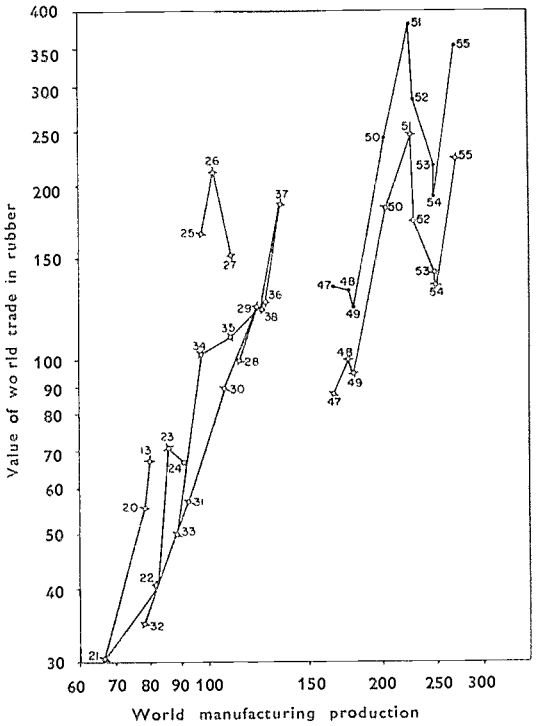
FIGURE III-12. International Trade in Rubber and Consumption (Including Synthetic Rubber) in Relation to Level of Manufacturing Production

(1920-38 = 100 ; logarithmic scale)

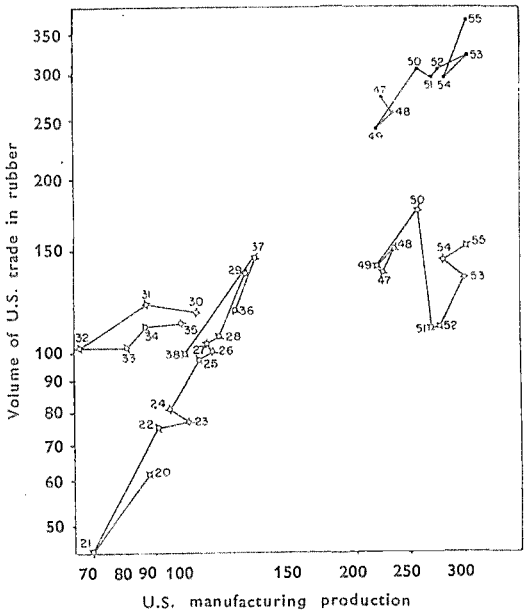
A. Volume of net world trade in natural rubber and volume of consumption (including synthetic rubber)



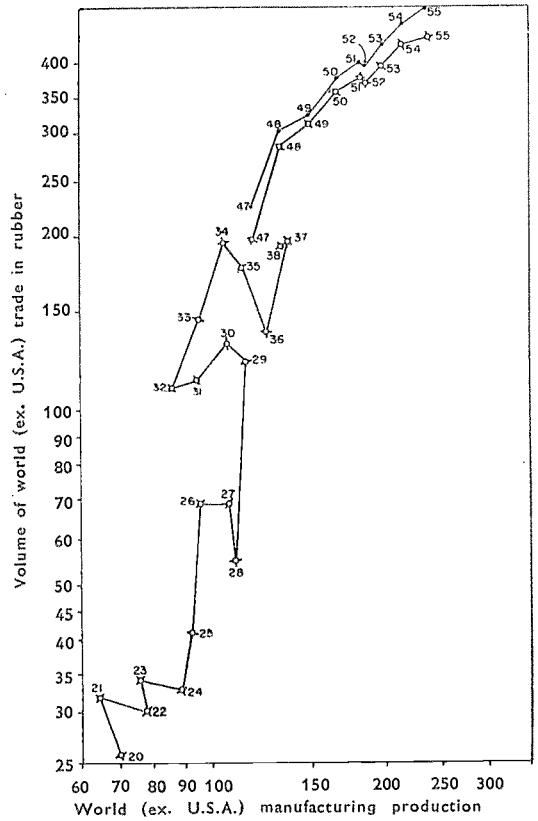
B. Real value of world trade in rubber



C. Volume of U.S. trade in rubber and volume of consumption (including synthetic rubber)



D. Volume of trade in rubber in the rest of the world and volume of consumption (including synthetic rubber)



⟷ Natural rubber only.

⟷ Natural and synthetic rubber.

correspond to the period of the Stevenson rubber restriction scheme. After World War II the real value of international trade in rubber fell to a much lower level than before, relative to world economic activity, though with some recovery at the time of the Korean boom. This decline reflected mainly a fall in the real price of rubber. It cannot be fully accounted for by the growing consumption of synthetic rubber, at least if this is valued at the same price as natural rubber.

Separate charts have been drawn for the United States and for the rest of the world (Figure III-12C and 12D), comparing the volume of imports with the level of industrial activity. The much greater share of synthetic rubber in United States consumption is clearly evident. It may be noted also that in the rest of the world there has been no marked break in the relation between net imports of rubber (especially if the consumption of synthetic rubber is added) and the level of manufacturing activities. The data for the United States, which have been adjusted for stockpiling, give some indication, however, of a lower level of rubber consumption in relation to the level of manufacturing activities from 1951 to 1954, though the earlier relation was restored in 1955 when there was a record production of automobiles. If the indications of a relative decline in rubber consumption are borne out, for example, because of economies in the use of rubber and perhaps also a decline in the share of automobiles in total United States manufacturing production, the implications would be of considerable importance in evaluating future prospects for rubber. This appears to be another field where a more detailed analysis may prove fruitful.

Forest Products. Forest products comprise another group of commodities for which international trade is expanding rapidly (Figure III-13). For example, both the volume (Figure 13A) and value of world trade in *sawn softwood* showed a marked rising trend, rather closely related to the growth of world industrial activity, during the first part of the interwar period. The volume of trade shifted, however, to a lower relative level after 1934 and again after World War II. Moreover, the response to an increase in economic activity was apparently less than before, primarily because requirements have been increasingly met by higher domestic production in many of the traditional sawnwood importing countries, but also because of the increasing use of substitute materials, e.g., steel in building. Because of an increase of some 50 percent in average real prices of sawn softwood (Table III-4), the decline after World War II in the real value of world trade, relative to the level of industrial activity, has been considerably less than the relative fall in volume.

Figure III-13B shows the volume of international trade in mechanical and chemical *woodpulp*, taken together, in relation to the level of world manufacturing production. Here, too, a fairly regular relation is apparent. Since World War II there has been, as for sawn softwood, a marked decline in the volume of trade, relative to world economic activity, but this has been largely compensated by increases in real prices of some 30 to 50 percent compared with the interwar years (Table III-4). The relative value of trade has therefore continued much as before the war, except for the period of exceptionally high prices during the Korean boom.

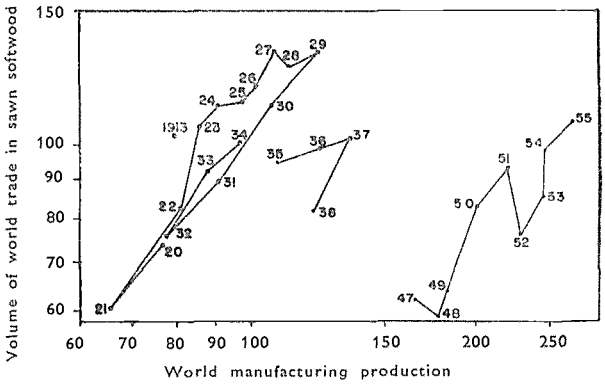
The relative decline in the volume of trade since World War II may be explained by the increased concentration on integrated pulp and paper plants producing newsprint and paper for export, rather than wood pulp. In consequence, the proportion of wood pulp moving in international trade declined from about 29 percent of world production in the years following World War I to 17 percent in 1948-50. Even so, the volume of international trade in wood pulp is now some three times greater than in 1950, chiefly because of the growth of trade in chemical wood pulp.

International trade in *newsprint* (Figure III-13C and 13D) has thus increased even more rapidly than trade in wood pulp. The bulk of the expansion in world newsprint capacity has been concentrated in Canada and Northern Europe, where raw materials are available, and the greater part of the increased world demand has been met through international trade. The growth in the volume of Canadian exports of newsprint to the United States, which increased nearly eight times from 1920-21 to 1955, has been particularly great. Unlike those of sawn softwood and wood pulp, real prices of newsprint on world markets have not changed greatly since the interwar period, that is to say, they have risen at about the same rate as prices generally. Both the volume and real value of world trade in newsprint thus show

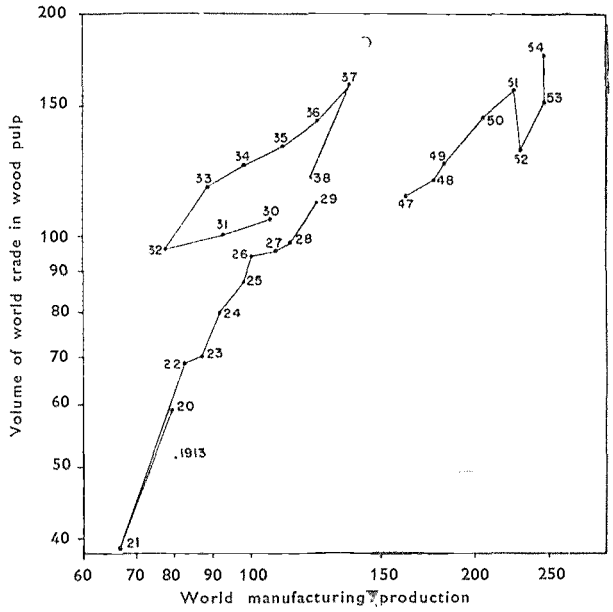
FIGURE III-13. World Trade in Certain Forest Products in Relation to Level of World Manufacturing Production

(1920-38 = 100 ; logarithmic scale)

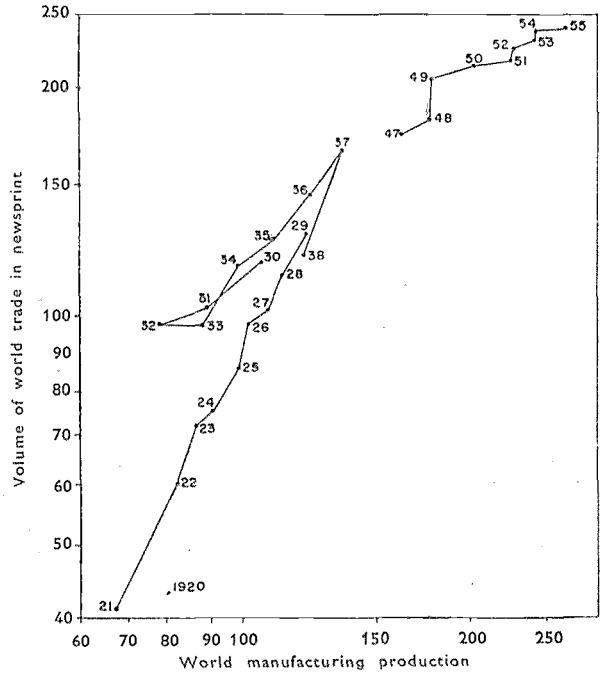
A. Volume of world trade in sawn softwood



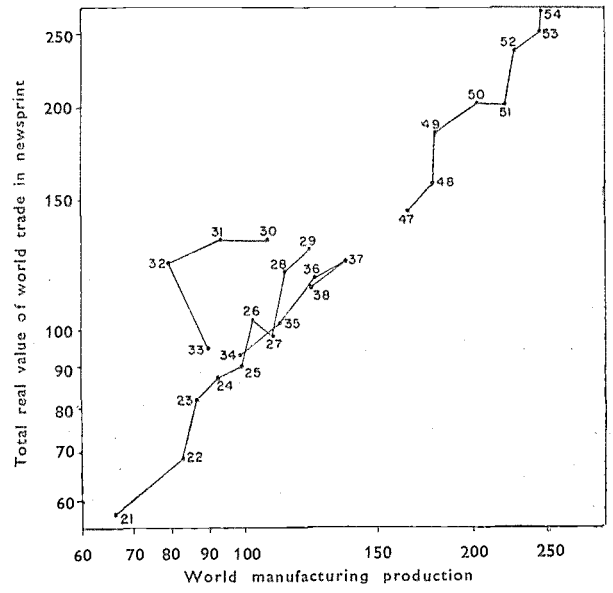
B. Volume of world trade in wood pulp (chemical and mechanical)



C. Volume of world trade in newsprint



D. Real value of world trade in newsprint



a rather close relationship with the level of world industrial activity, which has not changed greatly since the interwar period.

Other Commodities. Except for bananas, wool and fish meal, this exhausts the list of commodities in the first column of Table III-7, i.e., those for which the real value of world trade had shown an expansion of more than 50 percent by 1943-44 compared with the average of the interwar years. It would be impossible in the space available to discuss all commodities as fully as those considered above, and it will be more convenient to include bananas, etc., under their appropriate commodity groups.

Some of the remaining commodities have shown a modest expansion of international trade in recent years, while for others the level of trade has not greatly changed or has even declined. It might be expected therefore that the level of international trade in these commodities would show little or no relation, or at the most only a limited response to the development of world industrial activity.

In fact, this turns out to be seldom the case. The long-term relationship must indeed be downward for commodities where international trade has expanded more slowly than world manufacturing production. But the decline usually seems to take place in a series of steps. For a number of years the level of international trade shows a positive response to an increase in world industrial activity, of the kind already noted. But then comes a break to a lower level of trade of the kind which occurred after World War II in the volume of trade in, for example, sawn softwood. After each successive break it often, but not always, happens that the gradient of the regression line is less steep, i.e., the level of trade shows less response to the growth of world economic activity.

Livestock Products. Meat, milk products and eggs, for example, are commodities for which consumption is well known to increase with income, and where it might have been expected that the rise in per caput incomes with industrialization would have led to a marked expansion of trade. It has already been shown in Tables III-4 and III-6 that this has not in fact occurred. The volume of international trade in most livestock products has tended to decline in comparison with the prewar years, and real price levels of a number of livestock products have also tended to decline, so that the fall in the real value has been even greater than the fall in the volume of trade. Livestock production is well suited to many advanced agricultures, and, coupled with the import of animal feedingstuffs, specialization in livestock has enabled farmers in Western Europe, the main importing region, to reach a level of income from small farms which they could scarcely have attained by crop production alone. Livestock production has therefore been encouraged, and the increased demand for meat and dairy products been met primarily by greater domestic production in industrialized countries.

International trade in livestock products has not always, however, shown its recent lack of response to increased economic activity. Figure III-14A, for example, shows the relationship between world manufacturing production and the real value of world trade in cheese. It resembles similar charts which have been prepared for butter, eggs, beef and veal, mutton and lamb and bacon, and may be taken as representative of the situation for all these foods. From about 1921 to 1932 the real value of international trade in cheese showed a fairly close relation to the level of world trade manufacturing production (excluding the U.S.A., normally a net exporter of cheese). Subsequently, however, the relative level of international trade has fallen considerably, though it will be noted that a new relation appears to have been temporarily re-established from 1934-38. Since World War II little relationship is apparent, and as long as present tendencies continue, it seems doubtful if any major expansion can be expected in the level of world trade in cheese and most other livestock products.

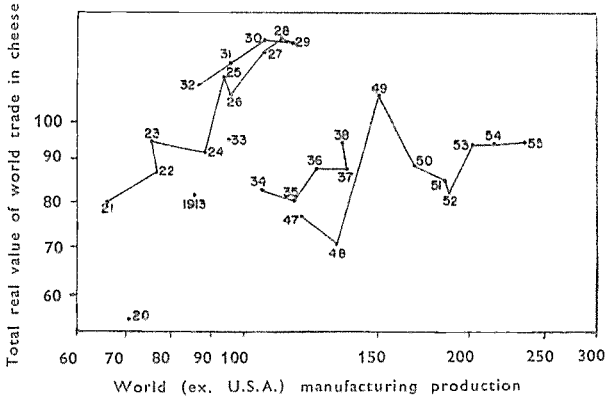
Sugar. Sugar consumption, too, is known to rise with increased income, and at an even earlier stage than the consumption of livestock products. Again, however, the growth of trade has lagged behind the growth of demand and consumption. Sugar indeed has been typically a commodity in which many countries, developed and underdeveloped, have made efforts to reach a greater degree of self-sufficiency.

The very sharp fluctuations in sugar prices in the nineteen-twenties distorted any relationship between world economic activity and the real value of trade, and even since then there is little indication of any close relationship. There appears, however, to have been some relation between the level of world manufactur-

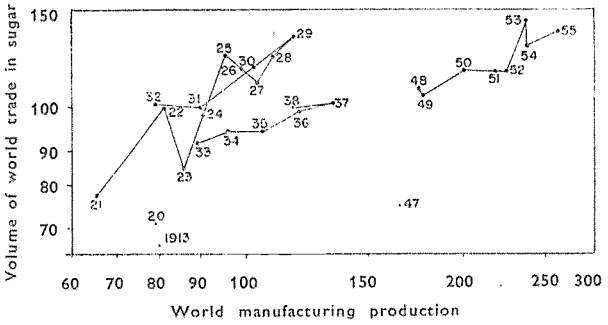
FIGURE III-14. World Trade in Cheese, Sugar and Certain Fruits in Relation to Level of World Manufacturing Production

(1920-38 = 100 ; logarithmic scale)

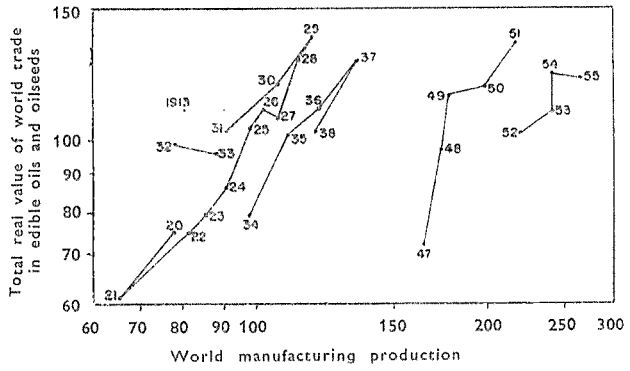
A. Real value of world trade in cheese



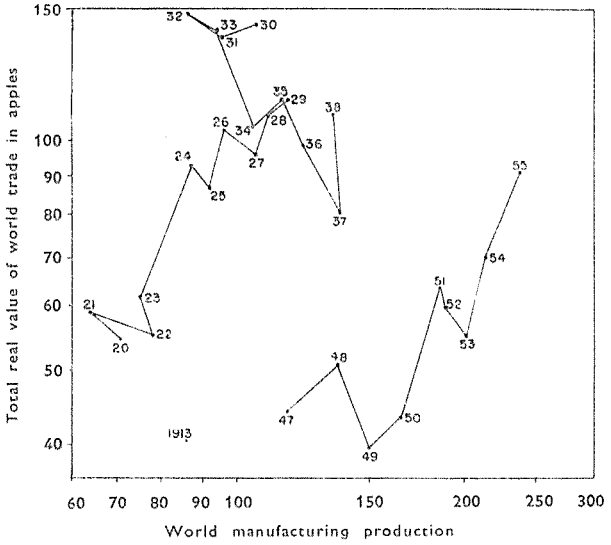
B. Volume of world trade in sugar



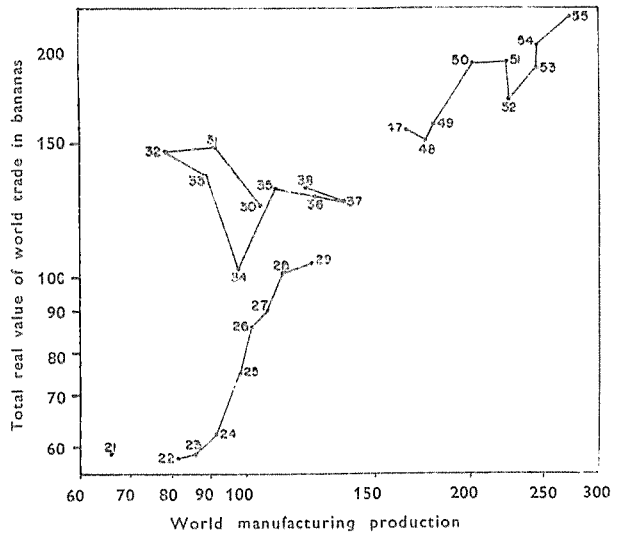
C. Real value of world trade in edible oils and oilseeds



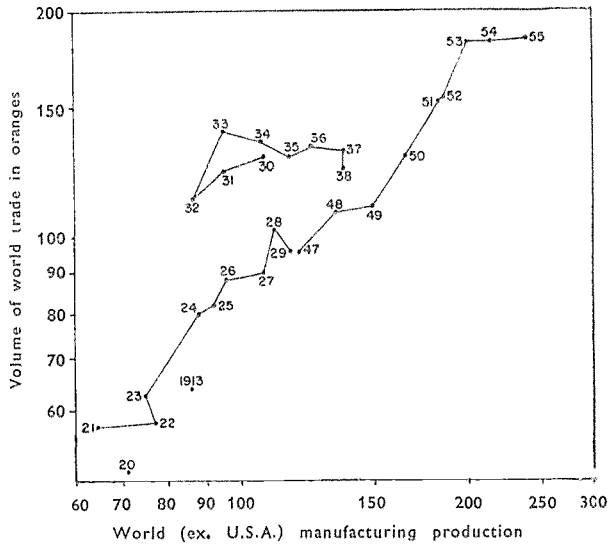
D. Real value of world trade in apples



E. Real value of world trade in bananas



F. Volume of world trade in oranges



ing production and the volume of international trade during the decade from 1921 (Figure III-14B). Since 1933 both the total and per caput volume of international trade have shown a much more limited, though fairly regular, response to the growth of economic activity. More detailed analysis would be needed to show how far the slower growth of trade in sugar (as also of livestock products) since the nineteen-thirties has been due to the slow growth of consumption and how far to increased domestic production in importing countries. There are as yet, however, no indications of any marked change in recent trends.

Vegetable Oils and Oilseeds. The main edible vegetable oils and oilseeds[14] have been grouped in view of the large element of interchangeability within this group, and the aggregate real value of international trade in these products is charted in relation to world manufacturing production in Figure III-14C.

The pattern which emerges is of a fairly regular relationship with the level of world manufacturing production from 1920 to 1930 or 1931 ; a delayed reaction to the decline in economic activity during the depression, and a re-establishment of a new relationship from 1934 to 1938. After World War II there was a further downward shift in the level of world trade in relation to world economic activity, though no great change in the slope of the regression line until 1952. Since that year, the relative level of trade has been lower than before, and there are indications of a new relation with a smaller response to the growth of industrial activity. It is likely that more detailed analysis could establish how far these successive declines have resulted from such factors as the greatly increased domestic production of soya and groundnut oil in the United States and the great expansion of detergents at the expense of soap.

Of the nonedible oils, data are available only for linseed and linseed oil. There was a constant relation between the real value of world trade and the level of world manufacturing production from 1920 to 1929. Since then, however, the relative level of international trade has declined in a series of steps to only a fraction of its former value.

[14]Coconut, groundnut, soybean, palm kernel, palm oil and olive oil together with the corresponding oilseeds.

Fruit and Fruit Products. There have been marked differences in the development of international trade within this group of commodities. For example, the real value of international trade in *bananas* has shown an expansion, comparable to those for coffee and cocoa, (except during the nineteen-thirties) and closely related to the level of world economic activity. As with the two latter commodities, the volume of trade has grown rather slowly since World War II, and the increased world demand has shown itself mainly in a level of real prices some 50 to 60 percent above the interwar average (Figure III-14E).

The real value of international trade in *oranges* has grown more slowly and shows a less constant relation to the level of world economic activity, even excluding the United States as an exporter of oranges. Curiously enough, however, there appears to be a rather constant relation between the volume of trade and the indicator of demand from 1921 to 1955, except for the period of the depression and the Spanish Civil War (Figure III-14F). The real price of oranges since World War II has been some 20 to 25 percent below the average of the interwar period, and the real value of world trade has therefore lagged behind the growth in the volume of trade.

Apples, dried raisins and wine were also included in the analysis. For apples, recent developments in international trade have somewhat resembled those for cheese and other livestock products. The period during which the real value of trade increased in line with the growth of world industrial production came to an end with the depression of 1930. International trade in apples did not at once decline, but from 1936 onwards, and especially since World War II, the volume, and still more, the real value of international trade, have been much lower than before in relation to the level of world economic activity.

The development of international trade in *dried raisins* has been generally similar to that of apples. The volume of international trade has been fairly well maintained since World War II, but the fall in real prices has been somewhat greater than for apples, so that there has been little expansion in total value. This is true also of international trade in *wine*, where a postwar increase in the volume of international trade has been largely offset by the fall in real prices. Over-all figures of world

trade in wine, however, show no clear correlation with the growth of economic activity.

Cereals. International trade in *wheat* has been conditioned in the past few decades far more by the aftermath of war and policies of self-sufficiency than by normal economic considerations. Moreover, price levels have been greatly influenced by international commodity agreements and national levels of price support. The volume of world trade thus shows practically no relation to the level of industrial activity, and there has been no very continuous relation with the real value of world trade since the period from 1923 to 1927. The post-war food shortages brought about a marked increase in the level of world trade, but latterly the downward trend has again become evident (Figure III-15A and 15B).

Both the volume and real value of international trade in *coarse grains* (maize and barley only) showed a fairly close relation with world economic activity from 1923 to 1928 inclusive, and a new relationship appeared to be re-established after the depression from 1934 until the outbreak of war, though at a lower level than before. Since World War II, world trade in coarse grains has been much smaller than before in relation to the level of industrial activity (Figure III-15C). Many importing countries have made efforts to limit their requirements of coarse grains from abroad by increased domestic production, by improvements to pasturage and better methods of conserving grass, and by more efficient feeding practices. The inclusion of other feeding grains for which data are not yet available, e.g., millets and sorghums, would, however, somewhat raise the level of trade in this period.

Although the principal rice-importing countries are not industrialized, world trade in *rice* showed until 1927 a rather close relationship with world industrial activity, and it appears that economic conditions in the industrialized countries largely influenced those in the Far East (Figure III-15D). After 1927, however, there has been little relation between the volume of trade and the level of world economic activity, while the value of international trade has fallen away in a series of steps to a lower level of trade. Since World War II the volume of international trade in rice has been much lower than before, and neither the volume or the real value of trade show any clear relation to the level of world economic activity.

Other "Aromatic" Products. In addition to cocoa and coffee, discussed earlier, tea, pepper and tobacco were included in the analysis. Neither the volume or the real value of international trade in *tea* has shown any indication of real expansion from the depression of the nineteen-thirties until 1953. In 1954 and 1955 both real prices and the total value of international trade increased sharply, probably largely as a result of some shift in demand because of the high prices of coffee. It is too soon to judge whether this change is likely to be permanent (Figure III-15E).

The real value of world trade in *pepper* (black and white only) until recently was closely related to the level of world industrial activity, though in 1936 there was a sharp break to a lower level of trade relative to the level of world economic activity. The relationship then established persisted until 1953 in spite of a marked decline in the volume of world trade, and from 1950 to 1952 real prices were five to six times the interwar average. In 1954 and 1955, however, the volume of trade increased and at the same time there was a more than proportionate fall in prices, so that the real value of international trade showed a marked decline.

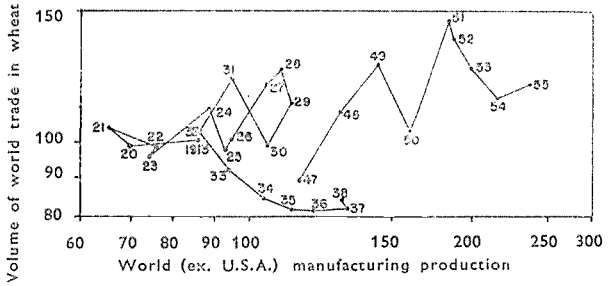
The real value of international trade in *tobacco* has also shown a rather close relation to the level of world industrial production (excluding the U.S.A.), but with only a modest response to changes in economic activity. There appears to have been a shift to a lower relative level of trade after 1925, but the new relationship lasted throughout the depression until 1938. After World War II, trade again shifted to a lower relative level with an even smaller response to increased economic activity. Volume and real value of trade have as a rule kept fairly close together, but to date there are no indications of any marked expansion (Figure III-15F).

Fisheries Products. Data suitable for the present analysis are available for only three commodities: fish meal, salted cod and salted herring. International trade in *fish meal* has shown a remarkably rapid expansion, because of the growth of livestock production based on imported feeding stuffs, and in 1954 its volume and real value were some five and six times respectively the average level during the interwar period. For *salted cod* and *salted herring* the picture is much less favorable. Before

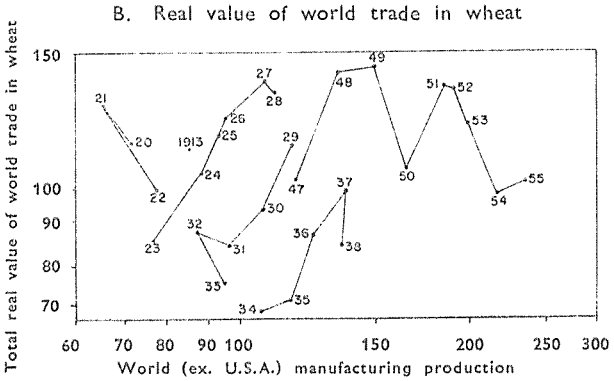
FIGURE III-15. World Trade in Certain Cereals, Tea and Tobacco in Relation to Level of World Manufacturing Production

(1920-38 = 100 ; logarithmic scale)

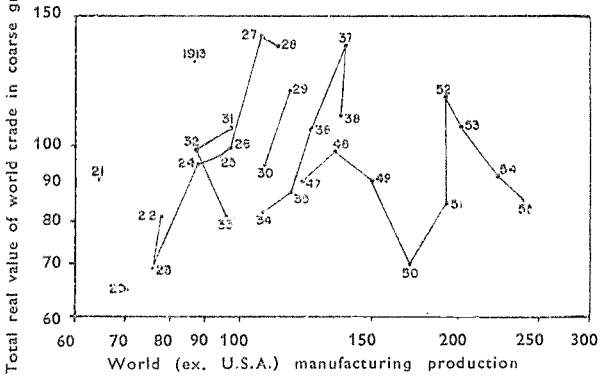
A. Volume of world trade in wheat



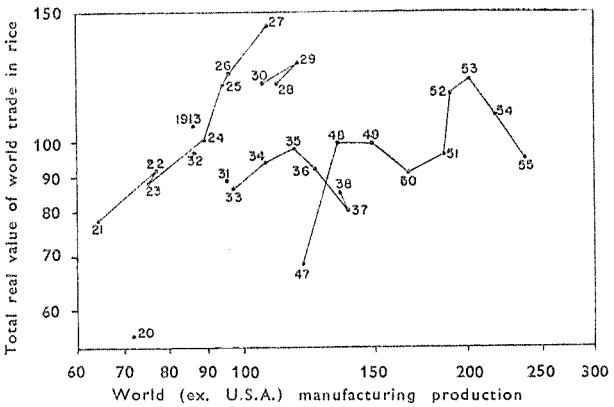
B. Real value of world trade in wheat



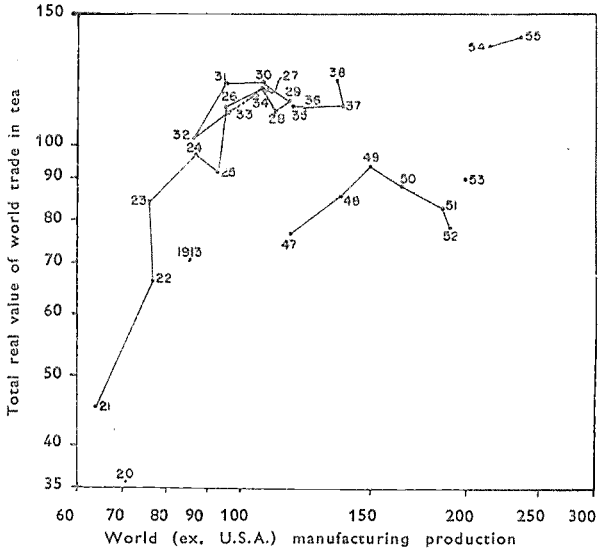
C. Real value of world trade in coarse grains



D. Real value of world trade in rice



E. Real value of world trade in tea



F. Real value of world trade in tobacco

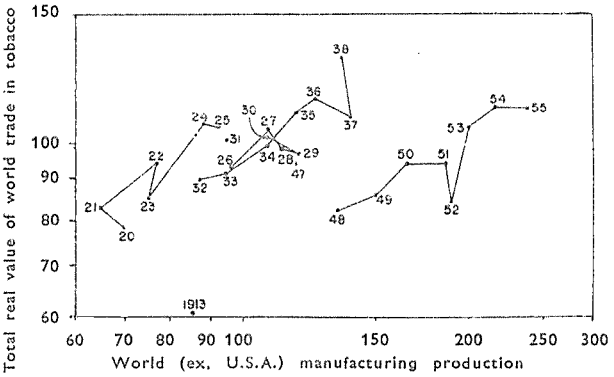
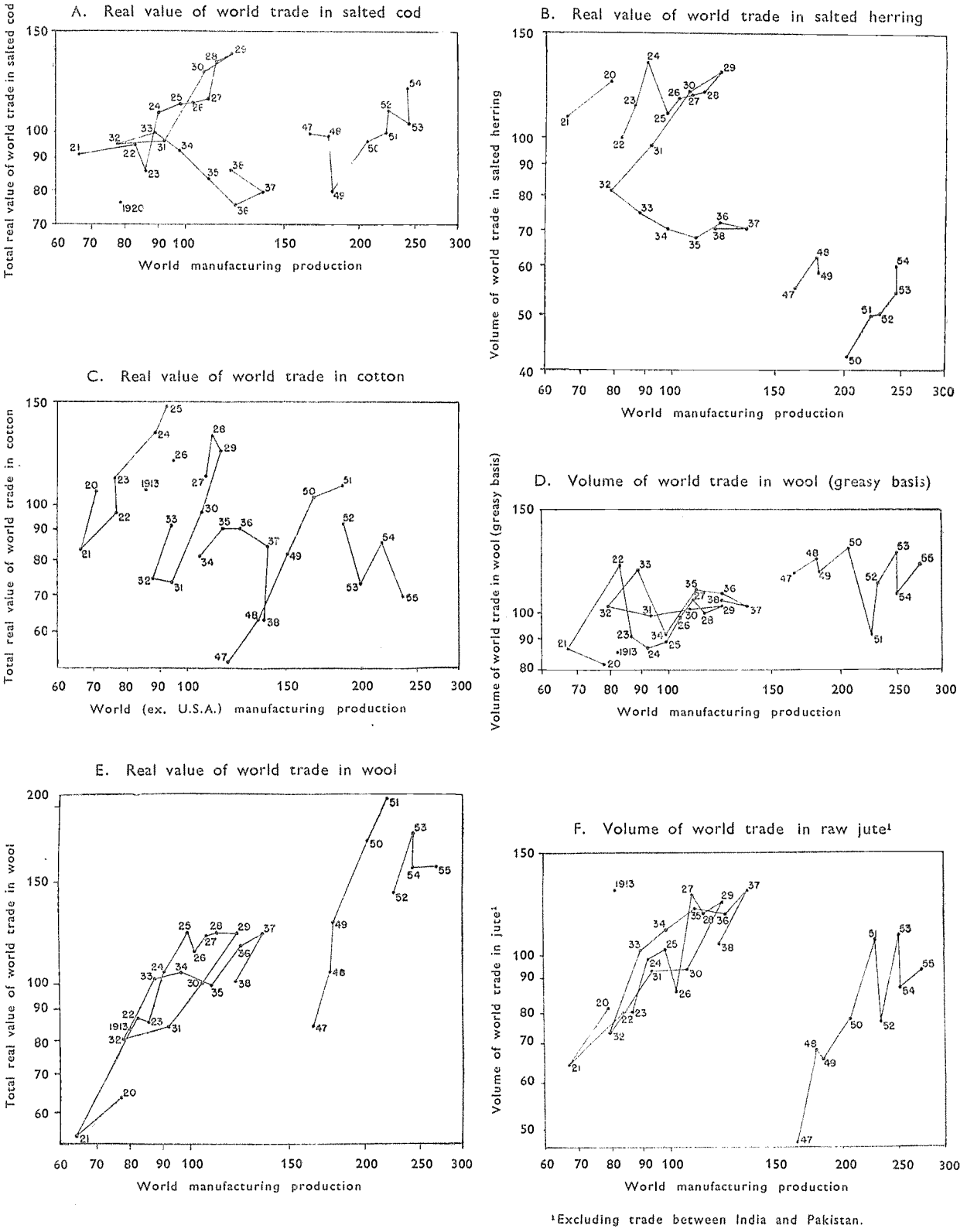


FIGURE III-16. World Trade in Certain Fisheries Products and Industrial Fibers in Relation to Level of World Manufacturing Production

(1920-38 = 100 ; logarithmic scale)



[1]Excluding trade between India and Pakistan.

the depression of the nineteen-thirties international trade in both commodities showed some tendency to expand with world economic activity, but from then until 1949-50 there was a more or less continuous fall in the absolute volume and real value of international trade. The salted cod trade was diminished chiefly by the greater self-sufficiency of the Iberian countries, while salted herring suffered particularly from the interruption of trade between Western and Eastern Europe. Since 1951 there are some indications of a partial recovery of international trade, especially for salted cod (Figure III-16A and 16B).

Industrial fibers. The volume of international trade in *cotton* has tended to decline since the mid-nineteen-twenties and shows little relation to the level of world industrial activity. A similar decline has occurred in the real value of international trade, and is a good example of the tendency of such falls to occur in a series of steps (Figure III-16C). Thus, a straight line relation is apparent between the real value of international trade in cotton and industrial activity from 1920 to 1925 inclusive, a similar relation was established at a lower level of trade from 1927 to 1933, and a third at a still lower level from 1947 to 1951. Between these periods and since 1951 the real value of international trade has either fallen or at least remained static in spite of an increase in world economic activity.

Closer analysis could probably evaluate the relative importance, in bringing about the decline in trade, of such factors as increased cotton production outside the main exporting countries, the establishment of textile industries in underdeveloped countries, and the increased use of rayon and other synthetic fibers. It might also give some indications of why the decline took place not continuously, but in a series of three steps. The first shift, for example, occurred after three years of unusually high average prices, and the third after the sharp increase in prices during the Korean boom. Cotton prices and general economic activity, however, were both beginning to recover from the depression when the second shift took place in 1933, and in this instance the decline came first in the volume of trade and only later in the price level.

The volume of trade in *wool* has grown slowly and, as with cocoa, there has been a marked price response to the relative shortage of supplies in relation to world economic activity and demand since World War II. Average real prices from 1952 to 1954 were nearly 40 percent above the interwar average and, of course, much higher still during the Korean boom. The volume of trade shows very little relationship to changes in world economic activity and in most years since World War II has been only 10 to 20 percent greater than between the wars. The real value of world trade in recent years has been some 60 percent higher, and until the Korean boom was fairly closely related to the level of world manufacturing production. Nevertheless, there are some indications that the factors which have limited world trade in cotton are beginning also to operate in wool, and since World War II the real value of international trade has been lower than before in relation to the level of world economic activity (Figure III-16D and 16E).

Between the wars, both the volume and value of international trade in *raw jute* were rather closely related to the level of world industrial activity, except in the years 1925 to 1929 when the value of trade was appreciably higher than the usual relationship (Figure III-16F).

Since World War II the level of international trade (excluding for comparability trade between India and Pakistan) has been lower than before in relation to world industrial activity. The volume of trade has shown less response to increases in world industrial activity, while the real value of trade has shown a continuous decline since the period of high prices during the Korean boom. Much of the decline of world trade in raw jute is probably due to such factors as the increased use of paper sacks and the growing move toward the bulk storage and transport of grain.

GENERAL CONCLUSIONS AND LINES OF FURTHER WORK

The commodity analyses in the previous section bring out in a striking way the extent to which the depression of the nineteen-thirties marked a turning point in the development of international trade in agricultural products. From 1913 until 1930 world trade in nearly all the agricultural products discussed showed a rather steady expansion in harmony with the general growth of world economic activity, continuing the comparable growth for some

decades prior to World War I (Figure III-5). After 1930, however, there was little or no further expansion of agricultural trade, except in a limited number of tropical products and industrial raw materials which cannot be readily produced in the industrial countries which provide their main markets.

Thus, from 1913 to 1927-30 the volume of world manufacturing production increased by 40 percent (29 percent excluding the U.S.A.), while the volume of world trade in agricultural commodities also increased by 40 percent,[15] though because of the relative fall in prices of agricultural products the increase in real value was only 17 percent.

From 1927-30 to 1954-55 the growth of world manufacturing production was much faster, rising by 130 percent, or by 106 percent if the United States is excluded. But by 1954-55 the real value of world trade in agricultural products had only just regained the 1927-30 level, while the volume of agricultural trade was nearly 10 percent less.

It is revealing to compare the development of international trade commodity by commodity in these two periods. From 1913 to 1927-30 only four of the commodities included in the analysis failed to show an increase in the real value of trade, and many of the largest gains were made by commodities whose consumption tends to increase with a rise in income, e.g., fresh fruit, meat and dairy products. From 1927-30 to 1954-55, on the other hand, rather more than half the commodities included in the analysis showed a decline in the real value of trade, and the fall was particularly marked for livestock products and some fruit (Table III-11).

There are as yet no indications of any change in the factors, already discussed, which appear to determine recent trends in the development of international trade in agricultural products. Apart from any major policy change, e.g., of surplus disposal, it thus seems unlikely that in the immediate future there will be any major expansion in international trade in the commodities which can be readily produced in the main industrial countries or which are being increasingly replaced by synthetic substitutes. On the other hand, international trade in agricultural products, for which an increased demand in the main industrialized countries must be met by larger imports, seems likely to continue to expand in line with the growth of world economic activity.

If increased domestic production in the main importing countries is a major reason for the failure of international trade in many agricultural products to expand, it might be expected that the level of world production of such commodities, rather than the level of world trade in them, would be related to the growth of world industry and world demand, except of course to the extent that the world market is diminished by the development of synthetic substitutes. The same should be true of any smaller but reasonably self-contained economy.

A preliminary comparison suggests that there is in fact a moderately close relation between per caput world production of cotton and of sugar and per caput world manufacturing production. The relative level of per caput production of both commodities, was lower after World War II than before, and in the case of cotton the apparent response to the growth of industrial activity was smaller. There has been so far no opportunity to examine this aspect further, but it suggests another possible line of work, which could be followed up on either a global or a regional basis, and which might, inter alia, perhaps throw some light on, e.g., the emergence of agricultural surpluses.

The whole approach in the proceding section is, however, as was said before, essentially a first reconnaissance of new ground. As such it has been necessary to adopt a rather broad approach and to leave many loose ends untied. Enough emerges, however, to indicate some of the main factors influencing the development of international trade in agricultural products, and to give a firmer basis than before for judging future export prospects for the main agricultural products.

Clearly the analyses for each commodity could be considerably refined and worked out in much greater detail ; for example, by breaking down the international market into its component sectors, as has been done above for rubber and coffee, by including a similar analysis of the trend of export supplies, or by attempting to evaluate (e.g., by means of multiple correlation analysis) the relative importance of the various factors tending to raise or to restrict the level of international trade in the particular product.

[15] All estimates in this paragraph of the level of international trade in agricultural products exclude forest and fisheries products.

TABLE III-11. CHANGES IN THE REAL VALUE OF WORLD TRADE IN AGRICULTURAL AND FORESTRY PRODUCTS FROM 1913 TO 1927-30, AND FROM 1927-30 TO 1954-55.

Real Value of World Trade Compared with Preceding Period	From 1913 to 1927-30		From 1927-30 to 1954-55	
Over 200 percent	Oranges Chemical wood pulp Bananas	Apples Pepper	Cocoa Newsprint Bananas	Chemical wood pulp
151 to 200 percent	Bacon Tobacco Tea	Rubber Butter Cheese	Coffee Rubber	Mechanical wood pulp
131 to 150 percent	Beef and veal Sugar Wool Coffee	Dried raisins Mechanical wood pulp Sawn softwood Linseed and linseed oil	Wool	Sawn softwood
111 to 130 percent	Cocoa Eggs Edible oilseeds and oils	Rice Newsprint	Oranges Pepper Tea	Sugar Tobacco Wine
91 to 111 percent	Cotton Coarse grains [1]	Wheat	Mutton and lamb Edible oilseeds and oils	
71 to 90 percent	Wine Mutton and lamb	Raw jute	Wheat Rice Raw jute	Oilcake[2] Dried raisins Coarse grains
70 percent or less			Apples Beef and veal Butter Linseed and linseed oil	Cotton Bacon Eggs

[1] Maize and barley only.
[2] Data not available for previous period.

Another line of work might be to take a particular country or wider region, e.g., Western Europe, and to analyze by similar methods the growth of its market for agricultural products, the extent to which the increased demand for each main product had been met by domestic production or by international trade, and the factors influencing this result.

It also seems possible, with the data now available, to apply in international markets the methods of price analysis and price forecasting already well established for national markets. For it is clear, coffee in the nineteen-thirties being an example, that an expanding world market is no safeguard against a collapse of prices if supplies temporarily outrun the current level of demand. There has not yet been an opportunity to develop this side of the work, which for most commodities would involve complex problems of substitution, though a simple experiment has been made in the case of cocoa. The influence of changes in the supply level was eliminated by grouping years in which per caput exports of cocoa were approximately the same, and for each group of years of equal supply there was found to be a rather close relationship between the average unit value (price) and world industrial

activity, taken as an indicator of world demand. By measuring deviations from the regression lines it was found possible to calculate "expected" price levels year by year which showed rather close agreement with actual price levels, except in the early years of the depression of the nineteen-thirties. In particular the calculated prices reflected almost exactly the sharp rise in values after World War II. This analysis could undoubtedly be considerably improved by more refined methods, especially if data were available on the level of stocks.

One difficulty in utilizing the analysis for price forecasting is the frequency with which more or less abrupt shifts seem to occur in the general level of international trade in relation to world economic activity. Many examples have been noted in the charts in the previous section of a sharp break in one year, or in the course of two or three years, to a new level of trade in relation to industrial production. This is often associated with different, and usually smaller response to changes in the level of industrial activity. Such shifts appear to represent a sudden change in the "magnitude" of the market, and it is of interest that similar sharp breaks have been found to occur in the domestic United States market where they appeared to reflect changes in consumer taste.[16]

In a few cases the shift is in an upward direction. Most of these occurred at the beginning of the depression of the nineteen-thirties, when they may have reflected a time lag in adjusting consumption and trade to a lower level of economic activity and income.

Much more frequently, however, the shift is to a lower level of trade. And while the reasons for the decline are usually fairly plain, the reasons why it should so often take place, not continuously, but in a series of steps are not clear. In some instances these abrupt downward shifts in the apparent level of demand appear to follow a period of unusually high prices, but by no means all can be explained in this way. They obviously introduce an additional element of uncertainty, and until more is known of their genesis the data cannot be fully utilized for forecasting the probable future course of international trade or of prices on world markets. A cautious approach is thus necessary. Nevertheless, the preliminary analyses in the preceding section appear to open possibilities of a more systematic study of international trade in agricultural products. This it is hoped to develop further as opportunity occurs.

[16]See, for example : H. Staehle. "Relative Prices and Postwar Markets for Animal Food Products." *Quarterly Journal of Economics*, Feb. 1945.

Chapter IV - WORLD FISHERIES: GENERAL TRENDS AND OUTLOOK WITH EXAMPLES FROM SELECTED COUNTRIES

CHARACTERISTICS OF WORLD FISH PRODUCTION AND TRADE

General

Any historical review of world fisheries and any forecast of development in the foreseeable future must take into account the predominating influence of two main factors on by far the greater part of the world's production of fish.

One of these factors is the essentially hunting character of the process of taking fish. Most of the commercially important fish stocks are wild — their movements are unrestrained by man's intervention and they occur mainly in oceanic areas over which no rights of individual ownership can be exercised exclusively. This characteristic of the fishing industry makes it extremely difficult to forecast production trends and the possible outcome of any particular fishing season.

The second factor is the extreme perishability of fish as a commodity which has largely determined the utilization of catches and their distribution in time and space.

The effect of these two factors is cumulative, since the perishability of the product magnifies the problems of seasonal or sporadic fluctuations in the catch, and the difficulty of forecasting production levels enhances the difficulties related to sudden peaks or depressions in the supply of the perishable raw fish.

The main developments, therefore, have taken place where the influence of these factors was minimized, to some extent at least, either because of natural advantages or through technical facilities.

Main Centers of Production

The estimated world catch of fish, crustaceans, mollusks and other aquatic fauna and flora, except whales, has increased from 20 million tons in 1947 (compared with 22 million tons in 1938) to a level ranging between 27 million and 29 million tons in the years 1952-55.

A very small number of countries accounts for a high proportion of the world's total catch. The six biggest producers (China, Japan, Norway, United Kingdom, United States and U.S.S.R.) accounted annually during the 1950's for a total of 14,000,000 tons, i.e., 50 percent of the world total. Seven fairly large producers (Canada including Newfoundland, France, India, Indonesia, Germany, Spain, the Union of South Africa including South West Africa) accounted for approximately 4,500,000 metric tons, which represented 16 percent of the world total. The catch of the remaining 17 of the 30 countries producing annually more than 100,000 tons, aggregated annually 4,000,000 tons, or 14 percent of the world total. These figures indicate that the fish output of the 30 largest producers (i.e., those catching annually more than 100,000 tons) amounted to 22.5 million tons or 80 percent of the world's grand total ; all the other countries produced as an annual aggregate 5,500,000 metric tons, i.e., 20 percent of the world total.

Certain species of characteristic shoaling habits, which permit them to be taken in large

numbers, form a great part of these countries' catches. One quarter of the world grand total, or between 6 million and 7 million tons, is represented by herrings, sardines, anchovies, menhadens, pilchards, etc., while the cods, hakes, haddocks, etc., account for approximately 4,000,000 tons, i.e., about one sixth of the total.

An analysis of the catch of the biggest producers indicates that their large-scale production is based, to an appreciable degree, on the afore-mentioned two groups of species which predominate in the world picture. In many of these main fishing countries, activities are based almost entirely on these two groups.

Norway's large production, from 1.5 to 2.0 million tons annually, is based chiefly on two species (herring and cod) occurring in abundance close to its shores. Similarly, the United Kingdom produces about 1 million tons a year, with herring and cod predominating. Even in such varied fisheries as those of the U.S.A., yielding about 2.5 million tons annually, comparatively few species predominate, i.e., menhaden, tuna, herring, haddock, redfish, salmon and shrimp; menhaden, for example, accounts for 40 percent of the United States' total catch. In the Canadian catch which is also over 900,000 tons annually, Atlantic cod and Pacific salmon and herring are prominent. The fisheries of the Union of South Africa (including South West Africa), accounting for some 600,000 tons, are based largely on pilchards, maasbankers and Cape hake; similar species figure prominently in the catches of Angola. The marine fisheries of Morocco are dependent virtually on sardines alone. A number of other important producing countries might be mentioned, e.g., Denmark, France, Germany, Iceland, the Netherlands, Portugal and Spain, where production is similarly based on a few predominant species (cod, herring, sardines, rosefish, etc.) in well-defined areas which can be fished in large quantities. By contrast, marine fish production in great areas of South and East Asia, tropical Africa and Latin America, is scattered and based on large numbers of different species.

It is also relevant to refer here to the importance of inland fresh-water fisheries which account for some 10 percent of total supplies, since these, by comparison with some marine fisheries, can be harvested comparatively easily.

It may be noted that the greatest marine fishery yields occur mainly in the waters more or less adjacent to the land masses of the Northern Hemisphere. The potentiality of the fish in the Southern Hemisphere on the grounds of the continental banks and areas with great upwelling should not be ignored, e.g., the rapid development of the fisheries between the Cape of Good Hope and the mouth of the Congo River, and off the Chilean and Peruvian coasts.

Consumption

Fish products provide only a small proportion (possibly less than 10 percent) of the world's total consumption of animal protein, but there are enormous variations between the levels of fish consumption in different areas. Many of these differences are, in part, due to the variations in prices of fish relative to other foods. These differences are only in part a reflection of the relative importance of fish in the national diets. In many cases they simply represent differences in the average consumption of animal protein in general.

Even a low level of fish consumption represents the main part of animal protein intake in Indonesia, the Philippines, part of India, Thailand and other countries, while even a relatively high level represents only a small part of the animal protein intake in the United Kingdom, Germany, Norway, Denmark, etc. Japan and Iceland are exceptional cases where the the main part of a substantial animal protein intake is supplied from fish.

Perishability has always been an overriding consideration, and present levels of consumption mainly reflect habits conditioned by the availability, regularity and form of fish supplies over a very long period. Consumption varies greatly within even very small areas, for example as between coastal and inland districts, between cultural, religious and social groups, as well as between income classes, and is also characterized by preferences, e.g., for different species of marine and freshwater fish, crustaceans and mollusks as well as for different ways of icing, freezing, drying, salting, curing, marinating and canning and packing fishery products.

Utilization

Different forms of fish products have been developed in order to overcome problems of distribution and storage, and each of these now serves a more or less distinct and specialized

demand. However, about 40 percent of total fish supplies still reaches the consumer in a fresh untreated state, indicating that a large proportion of fish distribution is still on a localized scale all over the world.

Curing was one of the earliest processes used and now comprises many variations from crude drying in the sun to the smoking of high grade products in modern kilns. Over 25 percent of the world supplies are consumed in this way, mainly in Asia, South and East Europe, Africa and Latin America. In its simplest form it often represents the most economic method of preservation.

One of the most extensive sectors of the fish trade in the Indo-Pacific region has been based on dried and salted products and on the production of fermented fish products, e.g., fish sauces and pastes.

Fish canning has now become a highly developed technique which, while absorbing only 7 percent of total supplies, is of major importance for certain species, especially, for example, in North America for salmon and tuna, and in Europe, Japan and the U.S.S.R., for tuna, herring, sardine and crab.

Deep freezing is the most modern of the processing techniques applied to fish; it has spread rapidly in North America and more slowly, but significantly, in Europe since the war, so that some 4 percent of the world catch is now frozen.

The year 1951 saw the introduction into the United States of fishsticks, of which the production quickly expanded from a few hundred tons to 30,000 tons in 1955. The output of this kind of product has risen rapidly in other countries, and although production in the United States seems to have leveled off lately, it may still continue to expand elsewhere.

A very significant development since the war has been the steadily increasing production of fish meal and oil, originally as a means of absorbing offal and local surpluses, but later as the principal usage of certain fisheries, e.g., Norwegian Winter herring (960,000 tons in 1954), U.S. menhaden (some 790,000 tons in 1954) and South African and South West African pilchard and maasbanker (about 450,000 tons annually). Approximately one fifth of the world's catch is now processed into fish meal.

While species such as menhaden are used exclusively for fish meal, and salmon and tuna in North America for canning, species such as herring, pilchards, cod and hake are processed in different ways, i.e., they are either canned or wet-salted, dried-salted, dried only, used for fish meal, etc. It may be noted that the patterns of utilization of these species differ from country to country, and within the same country from season to season, according to the market demand for the different types of end product.

Trade

Notwithstanding postwar developments in fish processing, the marketable life of most fish products used for human consumption is still quite short, and a very localized domestic trade for immediate consumption accounts for a large part of total supplies. However, the developments in processing, coupled with the developments in transport, have gradually extended the distribution of fish products, so that one quarter of the world catch now enters international trade in one or another form of processed commodity. Most of this trade is still intra-regional, but some commodities are now being exchanged increasingly between regions. The live weight equivalent of fishery commodities entering international trade amounts to some 5.6 million tons annually. Table IV-1, based

TABLE IV-1. COMPOSITION OF INTERNATIONAL TRADE IN FISHERY PRODUCTS: AVERAGE 1950-53

PRODUCT	Net product weight	Estimated live-weight equivalent
	.... *Metric tons*	
All commodity groups. . . .	2 754 000	5 600 000
Fish, fresh, chilled or frozen	617 000	950 000
Fish, dried, salted or smoked	620 000	1 900 000
Crustaceans, and mollusks, fresh, frozen, dried-salted, etc.	141 000	300 000
Fish in airtight containers . .	287 000	900 000
Crustaceans and mollusks in airtight containers.	17 000	100 000
Fish, crustacean and mollusk preparations	9 000	50 000
Aquatic animal oils and fats, crude or refined.	544 000	...
Aquatic animal oils, fats, waxes, etc., processed . .	82 000	...
Fish meals, fertilizers, etc. .	360 000	1 400 000
Miscellaneous edible aquatic animal products.	9 000	...

on trade during the years 1950-53, shows how this trade is composed by different types of fishery products.

Technical Development

The great differences of technical development between the most advanced and the most backward fishery industries are so striking as to divert attention from the very significant differences which exist in this respect among the more efficient fishery undertakings themselves. It is generally true that, even in many of the most developed economies, adoption of technical innovation and investment in the fishery industries has lagged behind that in other industries, including agriculture. For example, the introduction of steam and diesel propulsion and freezing was on the whole surprisingly late, in spite of their obvious great advantages.

This may be explained, at least partly, by the great riskiness of investment in the fishery industries which in turn derives largely from the general characteristics of fisheries mentioned in the introductory section of this chapter, viz., the lack of control over the resource and the extreme perishability of the product. Other contributory factors cannot be discussed in this brief outline. According to the prevalence of one or other of these factors, innovations of different kinds, and investment in different degree, are appropriate to various fisheries.

Some of the important fisheries in the world are conducted in coastal waters by numerous small units, and even by manual techniques. In those short-range operations, technical progress has consisted mostly in the improvement of small boat design, construction and propulsion ; the introduction of improved fishing gears and the application of power in working these gears, like the purse-seine ; the use of more durable synthetic materials like nylon yarn, the wide application of searching aids, especially echo-sounding and Asdic equipment. By contrast, the cod fisheries of the Arctic and North Atlantic, the tuna fisheries of the Pacific, and Antarctic whaling, involve operations ranging over thousands of miles from home ports. Here technical progress has been more conspicuous, with the construction of larger, faster, and better equipped trawlers, tuna clippers, mother ships and factory ships, embodying the latest improvements in modern merchant shipping and navigation, such as echo-sounders, radar, diesel propulsion, refrigeration and higher standards of crew accommodation.

In support of these fleets, extensive shore facilities have been developed, comprising deep-water docks, power-operated landing equipment, slipways, engineering workshops, ice factories, and a multitude of ancillary industries. It follows that the long-range operations are based on a comparatively limited number of ports where essential shore facilities can be provided economically, whereas short-range operations may be, and in many areas are, conducted from a large number of small harbors, havens, or even from the open beaches themselves.

Similarly there are marked differences of technical progress in fish distribution. Where catches are mainly distributed over a fairly lengthy fishery season in fresh condition, developments have mainly consisted in the improvement of road and rail transport, e.g., by the use of insulated or refrigerated cars and trucks, more protective and hygienic containers, short-term cold storage facilities, ice factories, etc. The changes have not been very marked or widespread and have been based more on methods than on equipment, the most notable probably being the increased use of road transport in Europe.

Where catches, in particular when landed over a short season, have to be processed, the whole technology, however, has been the subject of continuous research and improvement, especially in deep-freezing, canning and reduction. These processes lend themselves readily to large-scale factory organization. In North America, Western Europe, Southern Africa and Japan, canneries, deep-freezing plants and reduction plants have been progressively improved in accordance with the most modern industrial practices. In the case of deep-frozen products, especially in North America, this has been accompanied by the introduction of special refrigerated rail and road transport, a network of low temperature cold storages and refrigerated retail display cabinets and lockers.

GOVERNMENT POLICIES IN RELATION TO THE FISHERY INDUSTRIES

To be seen in perspective, national fishery programs and policies must be reviewed against the background of the general economic poli-

cies of which they form part. Like many other industries, fisheries have been strongly influenced by the transition from laissez-faire, and the tentative interventions of prewar policies in many countries, to the high degree of active government intervention in national economies which characterizes postwar policies almost everywhere.

Fishery Policies before World War II

With a few exceptions, the fishing industries are relatively insignificant sectors of their respective national economies. In a time of economic depression, such as occurred before World War II, these industries therefore found themselves in a particularly disadvantageous position. While the general decline in food prices had its full effect on the market for fish products, governments were under much greater pressure to assist agriculture than to help fish producers, and such assistance as was given mainly benefited the strongest sectors of the fish industry, especially where these were engaged in international trade or were particularly important in the domestic food economy. It is true that during the interwar period, credit institutions were developed in a few countries and some attempts were made to stabilize or protect the trade by means of quotas and tariffs, but in general little attention was given to the economic and social problems which were particularly acute among numerous scattered and small-scale producers. Outside the large-scale undertakings, such as those based on cod and salmon, which to some extent were able to invest in cost-reducing techniques and equipment to meet the decline in prices, the effects of the depression fell fully on producers' incomes. Low returns further impeded the flow of capital to the industry, and in many undertakings equipment and methods had become outmoded or obsolescent by the beginning of World War II. The widespread poverty of fishermen was further intensified by the reduced productivity of fishing grounds in a number of areas, including particularly the North Sea, on which many undertakings in Northwest Europe depended.

This aspect of the problem directs attention to the large body of legislation introduced in many countries over a very long period, which was designed to protect fishery resources. Much of it was, and still is, applied to inland and territorial waters, but there was also some attempt to reach agreement internationally as to the regulation of high seas fisheries. The latter was one of the outstanding matters which engaged the serious attention of governments, and for centuries the conflicting claims of different national fishing fleets have been energetically contended by the governments concerned. In relation to the mass of legislation and the volume of governmental effort in these matters of conservation and fishing rights, there was at first surprisingly little systematic research on the biological evidence for the need for conservation measures and of their effect, and virtually no attention was given to their economic repercussions on dependent fishery industries. Other legislation enacted before the war was mainly regulatory or fiscal in character and was concerned with such matters as safety of navigation, licences, dues, standards and certain elementary statistics.

Government Policies since World War II

The abrupt changes in the economic environment during the war period had sharp repercussions on the fishing fleets which, while suffering disastrous destruction and the disruptive effects of requisition and blockade in the areas of military operations, became critically important as a source of food supplies in the siege economies of the belligerents. Almost everywhere the fishery industries, in common with other food industries, were subject to extensive government controls, which applied to almost every aspect of fish production and trade. Apart from the fact that the sudden removal of these controls after the war would have been likely to lead to equally sudden and painful readjustments in the fisheries, they provided a ready means for the pursuit of economic policies which, in many countries, placed new emphasis on the promotion of food industries in the interests of greater self-sufficiency, improved nutrition as regards both quantity and quality, and certain social objectives. Moreover, the application of controls during wartime caused many governments to acquire a much wider knowledge and understanding of fisheries than had existed before. There was thus more recognition of the problems of the industry and a small but growing number of officials better qualified by training and experience to deal with them. At the

same time, while fisheries figured more prominently in postwar national economic programs, the objectives of the latter varied considerably and, in reviewing the economic development of fisheries, it is convenient to group countries in accordance with these objectives which depended not only on the social and economic structures of the countries concerned, but to a large extent on the effects of the war itself.

One large group of countries, mainly in Europe and the Far East, had suffered considerable physical war damage, and their productive apparatus had also lost capacity through being run down. The principal aim of postwar economic policy in these countries was a rapid restoration of production and subsequently of standards of living. In trying to achieve these objectives, countries in this group almost without exception were confronted with serious problems of inflation and of maintaining their balance of payments. The fact that quite a few of the countries had embarked on ambitious programs of social improvement added to their problems.

A second group of countries, mainly outside the immediate scene of war operations, entered the postwar period with a greatly expanded productive apparatus, which had been developed to meet wartime needs.

The third group of countries occupies an intermediate position, having been affected by the war mainly through changes in the pattern and the terms of international trade. Such countries often suffered simultaneously from shortages of some goods and surpluses of others, mostly accompanied by balance-of-payments difficulties. Their economic policies tended in the direction of reducing dependence on imports and sometimes simultaneously consolidating export gains and further expanding their export trade. Such a grouping is, of course, only a simplifying device, and within the groups there are important differences of policy, according to the economic importance of the fisheries and the extent to which they depend on or could supply domestic and export markets. Where there are so many variations of policy and of measures applied to industries of such relatively minor economic importance as fisheries, it may be more instructive to review fishery developments in a number of selected countries under different but characteristic economic and social influences.

TYPICAL CASES OF FISHERY DEVELOPMENT UNDER DIFFERENT ECONOMIC INFLUENCES

Japan

Fish production in Japan has now been restored to its highest prewar level which reached a peak of about 4.5 million tons annually during the period 1931-38, representing a threefold increase over the preceding 20 years. Three factors operated to promote such a rapid rate of increase.

Firstly, the waters surrounding the islands supported prolific fish stocks. Secondly, fish provided the main source of animal protein for a population which increased from 55 millions in 1920 to over 70 millions in 1940. Finally, agricultural production was inadequate for the dense population, a large part of the land area being too mountainous for permanent cultivation. The pressure of population and food needs bore directly and heavily on the numerous small-scale operations in coastal waters, production from which increased from about 1 million tons in 1910 to about 4 million tons in 1933, or nearly 70 percent of prewar fish supplies in metropolitan Japan. At the same time the rapid industrialization of the Japanese economy had provided the essential technical means and economic incentives for the world-wide extension of the operations which occurred between the wars. Long distance fishing embraced not only the whole of the Western Pacific, but spread also to the Indian Ocean and the waters off South and Central America. Vessels and equipment increased in number and efficiency; factory ships were introduced for the catching and processing of salmon and crab; land bases were acquired in a number of countries; processing establishments were set up, and " colonial " fisheries were developed — notably in Korea — as a source of food or foreign exchange. A vigorous government export drive supported these ventures, exploring and exploiting all possible openings in the foreign markets.

The structure of the Japanese economy itself at that time had an important bearing on the proliferation of these ventures which, of course, required heavy capital investment and, in many other countries, would have appeared excessively speculative. This structure favored the amalgamation of the smaller undertakings and

the formation of large monopolies which could spread their risks and could operate with minimum competition on the fishing grounds or in domestic markets. Thus the industrialization and expansion of the fisheries was accomplished mainly by four large companies and their subsidiaries. For example, before the war one company controlled 87 percent of all trawling, 98 percent of crab processing in floating canneries, 40 percent of deep-sea, and 76 percent of the coastal whaling, 50 percent of the ice output, 60 percent of the refrigeration capacity, and 20 percent of all marine fish exports, while its subsidiaries operated in Argentina, Formosa (Taiwan), Borneo, Philippines, Manchuria and Korea. In this connection the Government, in pursuit of its policy of fostering the development of the pelagic fisheries, provided strong encouragement by heavily subsidizing the large companies; by granting and protecting fishing rights in home waters; by obtaining concessions abroad in the form of fishing rights and land bases and also, as has been said, by its vigorous export policy.

As a result of the war, the overseas concessions and land bases were lost, including the particularly important salmon industry in the Kuril Islands and Kamchatka. Production dropped by half to about 2 million tons in 1945. Fishing operations were strictly controlled by the Supreme Commander for the Allied Powers in Japan (SCAP) and immediately after the war were confined to the coastal waters. Under the direction of SCAP a far-reaching postwar fishery program was developed with the twofold objective of rehabilitating the fishery industries and of reforming their structure, so as to bring their activities under more democratic control. To this end the National Fisheries Agency was set up in 1948; it has been the main instrument for the rapid restoration and development which has occurred since. Although there was strong resistance to the extension of fishing operations on the prewar scale, the critical food situation in Japan and declining yields from the intensively exploited coastal stocks, brought about some relaxation in restrictions and, in particular, enabled Japan to participate in Antarctic whaling and mothership tuna fishing in the Pacific. Although severely curtailed in their scope, the fishery industries became even more important than before the war, both in the domestic food economy and as a source of foreign exchange. A considerable program of financial aid, education and research, was launched with the advice and assistance of foreign specialists. The intervention of the Government has been of paramount importance, not only in the re-organization and technical improvement of the industry itself, but also in securing abroad the conditions under which the export trade could be revived. The Government has also taken a lively interest in the exploitation of new resources and in international discussions bearing on the investigation and management of resources.

The postwar record has been impressive and, by 1952, fish production had been increased to over 130 percent above its 1945 level. This was due largely to the very rapid resumption of coastal fishing on its former scale, to the exploitation of new grounds, and to the high degree of technical efficiency attained in the operations. Over 90 percent of this production, excluding whales, is absorbed on the home market, where prices were controlled until 1950, after which the urban demand slackened somewhat, with some shifts of preference which, in turn, led to more diversification of fish products. Fish consumption is much lower in the rural markets, which have therefore become the potential domestic outlets for further increases in production. At the same time the character of the export trade changed considerably, reflecting world-wide changes in the pattern of international trade. About 10 percent of total fish production is exported, as compared with 20 percent in 1938. Exports of tuna to the United States and Canada have reached a level never attained before, but the trade in salmon, herring and shellfish is considerably reduced. In the 1930's almost one half of Japanese fish exports went to Europe and about one quarter to the United States. Now over 55 percent is exported to the United States and only some 7 percent to Europe. Despite the reduced trade with China, the trade with Asia as a whole has increased, and accounts now for 35 percent of fish exports, as compared with about 25 percent in the 1930's. Here, too, the Government has intervened actively in the matter of both formal and informal agreements as to prices and the regulation of shipments.

Meanwhile the Government continues to follow a policy of powerful support to, and extensive regulation of, the fishery industries. The outstanding importance of the coastal stocks has widespread social and economic implications for the large fishing population, throwing em-

phasis on the rational management of these resources, on the structural reformation of the industry to secure an adequate share of the earnings for the primary producers and, at the same time, on the exploitation of all other accessible marine resources, taking full advantage of the considerable technical capacity of the Japanese economy. For some time, therefore, the policy will continue to require considerable activity in education, extension, and research, as well as world-wide international negotiations in matters of trade and fishing areas, and long-term investments from public funds.

Norway and Iceland

Although there are many differences between the economies of these two countries, they have in common — apart from their balance-of-payments problems — the fact that they are the two countries where the fisheries are of most importance in the respective national economies. Both are endowed with rich natural resources in the form of dense stocks adjacent to their shores — mostly of cod and herring. Both countries place considerable dependence on these resources and, in both cases, fishing is a traditional, firmly established occupation of considerable social and political importance in the community. In each case the level of domestic fish consumption is high, (Iceland: 50 kilograms per caput; Norway: 53 kilograms per caput) although, of course, the smaller population of Iceland provides a very limited market. In Iceland, however, fish exports account for 90 percent of total export earnings, while in Norway they represent almost 25 percent.

For these obvious reasons, therefore, the fishery industries in both countries demand serious consideration in economic planning. In the interwar period fish production in Iceland was more than trebled, from about 80 thousand tons in 1920 to about 260 thousand tons in 1939, and production increased steadily through the war, reaching a peak of over 450 thousand tons in 1944 — in response, of course, to the urgent demands of countries engaged in the war, especially the United Kingdom. In Norway before the war, production increased from about 650 thousand tons in 1919 to over a million tons in 1939. However, in Norway, the industry suffered much destruction, dislocation and restriction during the occupation, and production fell to about 650 thousand tons in 1944.

Iceland emerged from the war with a greatly increased fishing capacity and substantial sterling credits, which provided one ready means of rebuilding and modernizing the fishing fleets and processing plants after the stresses of continuous wartime fishing. There was a ready market for their catches, mainly in the United Kingdom, but it was evident that the regular disposal of such a greatly expanded production would become a serious problem when the fishing capacity of importing countries was restored, especially where balance-of-payments problems arose. Accordingly, immediately after the war, there was considerable investment in increased reduction and freezing capacity with an eye to promoting alternative export outlets. In fact, since 1944, production has fallen somewhat to about 360 thousand tons annually, and it is indicative of Iceland's special difficulties that herring meal and oil production capacity has been doubled since 1945, while the herring catches have repeatedly failed during the same period (1944: 220 thousand tons; 1953: 70 thousand tons).

The suspension of direct landings in the United Kingdom accelerated the movement to diversify fish products in an attempt to promote alternative markets. The sharp fall in the export of fresh, iced fish mainly to the United Kingdom and Germany, has been accompanied by an increase in exports of frozen fish to the U.S.S.R. and the U.S.A. However, the general picture of Iceland's fish export trade since the war shows a number of shifts and changes in response to instabilities in export markets and the main endeavor has been to employ full productive fishing capacity on the basis of a more flexible system of utilization.

In Norway, fish production was already at its prewar level by 1947 and by 1951 had increased to over 1,000,000 tons.

Cod and herring represent the bulk, but whereas the increase immediately after the occupation represented the restoration of prewar catches of cod and herring, the increases since consist almost entirely of herring, catches of which have reached around 1 million tons annually. This gives prominence to the production of fish meals and oil which absorbs most of the herring catch, and which has grown in response to the steady postwar demand for fish meals throughout Europe and in the U.S.A.

This development has brought a measure of stability to the Norwegian herring fisheries which has greatly encouraged the modernization and expansion of the industry to its present high level of efficiency. Meanwhile favorable postwar markets for Norwegian fresh, frozen and dried products have encouraged increased investment in the white fish industry, although recently high price levels in Norway have created some difficulties.

In both countries the governments have had a decisive influence, and it is also characteristic that development plans have been executed in closest consultation with the industry. The frequently expressed anxiety of the fishermen in regard to the protection of fish resources was reflected in the intensification of government fishery research, and in endeavors to negotiate wider areas within which the two countries' nationals could enjoy exclusive fishery rights. The latter raised the difficult and complex problem of reconciling the undoubted dependence of the Norwegian and Icelandic fishermen on their coastal fisheries with the importance attached by the long-distance trawling fisheries of other European countries, to fishing grounds immediately outside the territorial waters of these two countries.

This led to protracted negotiations and disputes concerning the limits of the territorial waters and the fishing within those limits. In the case of Norway, the International Court of Justice was invoked in order to reach a settlement; in that of Iceland, the dispute proved very intractable and has not yet been finally settled.

In the matter of research, both countries have figured prominently in the sustained postwar efforts to achieve better co-ordination of research activities, mainly under the aegis of the International Council for the Exploration of the Sea (ICES) and the International Commission for North Atlantic Fisheries (ICNAF). Norway has been particularly successful in herring investigations which have enabled the fishermen to locate the all-important Winter herring shoals with more certainty and promptitude and have undoubtedly contributed much to the spectacular increase in the production of this species since the war (1947: about 600,000 tons; 1955/56: over 1 million tons).

The reconstruction and modernization of the fishing fleets was accomplished under the close supervision of the governments and with extensive financial aid. In Norway the construction of new craft had continued to some extent during the war, but supplies of gear were cut to almost 25 percent of prewar supplies. Wartime losses and deterioration of craft had been made good by 1949, after which the fleet continued to expand in both number and capacity, with some slight shift toward the use of larger vessels, including trawlers. The wartime centralized import of raw material for the manufacture of fishing gear continued after the war and culminated in the formation of a public corporation for this purpose in 1954. The equipment of the fleet has been rapidly and progressively modernized with the introduction of echo-sounding, radio and other aids to the locating and reporting of fish.

These developments have been extensively financed by mortgage loans from the National Fishery Bank which in some cases cover up to 95 percent of the costs of construction. Credit facilities have also covered the purchase of new gear and equipment.

In Iceland reconstruction was based much more on large ocean-going trawlers which between 1945 and 1948 doubled in number and trebled in tonnage, while the smaller motorized fleet fell slightly in number, but increased in capacity. Grants and loans from the National and Fisheries Banks provided much of the finance required, while the Currency Retention Scheme has also assisted the motorboat owners. Recently government help has been direct and now provides substantial subsidies to trawler operators and crews.

The seasonal concentration of landings, especially in the case of Norwegian Winter herring, created special problems of utilization and disposal, including the provision of adequate facilities for the treatment of large catches over a short period, the seasonal employment of labor and regularity of earnings. In both cases this situation gave rise to the formation of powerful government-sponsored professional associations having extensive powers in the matter of prices and trade agreements. In Norway the fishermen's sales associations have played a decisive part in the negotiation and stabilization of prices at agreed levels which are maintained through the operation of price-equalization funds. Some exporters' associations have effected the centralized control of export trading, and semi-official boards of experts have been made responsible for the negotiation of contracts for the export of certain fish products. Similarly, in Iceland the

Herring Board has exercized strict control over the utilization and marketing of herring.

The investment required in shore installations for the freezing, curing, canning and reduction of heavy seasonal catches has been largely financed by the government and in both countries capacity has increased in accordance with well-defined government plans. At the same time, a steady flow of advice has been supplied from technological research institutions and, characteristically, in Norway the canning and meal industries finance their own research. In Iceland, technological research is financed from a small duty on fish exports.

Meanwhile, the stability of these fisheries continues to depend heavily on export markets. The governments have done much to promote the latter and keep in close touch with present and potential market requirements abroad. On this basis the governments and industries in both countries are making continual efforts to adjust and diversify their products to meet all foreseeable changes of demand. However, any major and substantial recession in the export markets for fish meals and frozen and cured products would have very serious consequences, while some difficulties have arisen due to costs of production and insufficient flexibility in price formation. In this situation the promotion of markets in Eastern Europe in recent years is of particular interest.

United Kingdom and Germany

In contrast to Norway and Iceland, these two countries are primarily fish-consuming and importing countries which have, at the same time, developed large-scale highly industrialized fisheries of their own. They have a number of features in common. Both have highly intensified and industrialized economies in the development of which the growth of population caused increasing dependence on imported food. The development of the domestic fishing industries was another aspect of this process. Both border on the North Sea which before World War I was one of the richest fishing areas in the world, and which still supports large stocks of herring. Both had, pre-eminently, the sea-faring experience and technical means to prosecute deep-sea fishing and, as the North Sea fisheries became less profitable, to extend their operations to the North Atlantic and Arctic Oceans. Both are heavy importers and, before World War II, were the largest fish importers in the world.

Both were heavily engaged in two world wars in each of which the fishing fleets and ancillary industries suffered much destruction and restriction. Both, therefore, emerged from the last war with the problem of reconstructing and rehabilitating large-scale, heavily capitalized fishery undertakings during a particularly difficult period of restriction on materials, labor and capital. Finally, in both countries the main current problems are those of reducing high costs of production and of maintaining or increasing demand in domestic markets.

The growth of the two countries' fishing industries, however, occurred during different periods and to some extent followed different patterns. United Kingdom trawlers pioneered the intensive exploitation of the North Sea which, until after World War I, supplied the bulk of the white fish catches. At the same time a thriving herring industry was based on prolific seasonal occurrences of herring which found a ready market in Germany and Eastern Europe before World War I. Although the United Kingdom is insular and has a long coastline, the early predominance of the East Coast trawl and herring fisheries promoted the growth of one or two East Coast ports which became and remained the key centers of the industry even after the rise of long-distance fishing in which their geographic position was no longer advantageous.

By 1913 United Kingdom production had reached 1,200,000 tons annually and in fact this level has not been exceeded since, annual production both before and since World War II running at about 1,000,000 tons. However, this superficial comparison of annual production figures conceals the almost revolutionary changes which occurred in this period. In 1913, as now, cod and herring predominated, but whereas the 1913 catch included over 600,000 tons of herring and 400,000 tons of cod and similar species, the 1955 catch included some 165,000 tons of herring and 640,000 of cod and similar species. The decline of the herring industry after 1914 was sharp and reflected shrinking markets in continental Europe. Reduced earnings led to reduced investment in new equipment, and the fleets steadily deteriorated through the interwar period, with serious economic and social repercussions on those fishing communities, especially in Scotland, which had no alternative occupation locally. This trend, while

it points to the weak domestic demand for the low-priced herring, emphasizes perhaps even more the problem of rapid utilization and preservation of heavy seasonal supplies. Deep-freezing and reduction processes had not then been developed in the United Kingdom, the hard salty cures favored in export markets were unpalatable at home, and the market for fresh and mild-cured herring was necessarily limited in time. At the same time there was a strong domestic demand for cheap white fish, especially in the fried fish trade supplying cheap ready-cooked meals in industrial and urban areas. The low incomes of the interwar depression sustained the demand for fish, and particularly fried fish, as an alternative to the more expensive meat products.

Parallel to this economic trend went a change in the nature of the fishery resources. Between the wars the yields from the North Sea gradually declined under the heavily increased pressure of fishing. At the same time the declining yields comprised the most popular, higher priced prime varieties like plaice, soles, turbot, etc., for which demand also decreased under the pressure of lower incomes. The demand for cheap protein food, coupled with decreasing yields from the North Sea, brought about the extension of operations to the rich stocks of cod off the shores of Iceland, Norway, Bear Island and the Murman Coast. From the early 1930's the distant cod fisheries of the North Atlantic and Arctic began to dominate the United Kingdom fishery industries, attracting heavier investments in larger, faster trawlers and the formation of larger trawler-owning companies and larger merchanting enterprises to handle heavier catches. This also increased the predominance of the main ports, especially of the two Humber ports which now handle about 75 percent of the total domestic white fish landings. A salient factor in the whole evolution of the United Kingdom white fish industries has been the relative regularity of landings, with seasonal fluctuations much less marked than in the case of herring, and the existence of a network of railways along which fish supplies from a small number of major ports could be rapidly distributed to all parts of the country, simply protected by ice, which itself could be cheaply produced in large quantities at the main ports. Moreover, the concentration of landings and facilities at a few main ports permitted many economies of scale in ancillary undertakings. By 1939 the United Kingdom fishing industry consisted essentially of a modern distant-water trawling fleet supplying mainly cod in bulk, a large obsolescent near-water trawling fleet, and an equally obsolescent herring drift-net fleet, of which the two latter were in serious straits, one because of reduced catches and the other because of weak export markets.

Production was severely curtailed during the war — the best units of the fleet and many crews were requisitioned, and operations were confined to small areas under close protection. Production fell by 75 percent to about 250,000 tons in 1941, and the country relied heavily on imports from Iceland and Canada. The postwar recovery was greatly assisted by the wartime recuperation of North Sea stocks ; production had already risen to 500,000 tons in 1945, and by 1947 had recovered its prewar level. This level has been more or less maintained since, with increasing emphasis on the production of distant-water cod, as the North Sea yields fell back to prewar levels, and more near-water trawlers were scrapped, with only limited replacements. Immediate postwar trawler building was mainly confined to distant-water trawlers. The main trend has been for the trade to stabilize at about the 1947 level and the main effort in the white fish industry has gone into the disposal of short-term surpluses by voluntary regulation of distant-water catches, by intensified advertising on the home market, by the extended use of deep-freezing, and the development of export markets for certain specialized products. The mainstay of trade has continued to be the home market for fresh white fish. Postwar herring catches have fluctuated between 200,000 and 250,000 tons annually and the uncertain behavior of the vital East Anglian herring stocks is causing much anxiety in the industry. The main efforts here have been to revive the export trade, to rationalize and reduce the costs of catching and to promote all-the-year-round fishing. Here the problems of shortage and surplus have been serious and the use of deep-freezing and reduction facilities is increasing in an attempt to introduce more stability.

The development of the German fishery industries occurred somewhat later and followed a different pattern. Like the United Kingdom, Germany depends mainly on the North Sea and North Atlantic and Arctic, but the geographical background is quite different and has had an important bearing on the character of

the industry. Germany's coastline, short in relation to her land area, has centered the fishing operations and the whole fish distribution system on one or two major ports. The practice of distributing fresh fish in ice is therefore more restricted than in the United Kingdom and, in fact, there is a strong demand for cured fish, and especially for herring. German fish exports, although increasing since the last war, have never been of major significance, and there is therefore a pattern of steadily increasing production over the last few decades, undisturbed by the fluctuations in export markets which so markedly affected the volume of production in the United Kingdom. Before World War I, Germany's fish production was 160,000 to 180,000 tons annually, compared with over 1 million tons in the United Kingdom. After World War I, production remained more or less around 200,000 tons until the late 1920's, after which it increased steadily to over 700,000 tons in 1938. Production during World War II fell to less than 140,000 tons in 1940 and as low as 80,000 tons in 1945. Bearing in mind the shattered condition of much of the country's industries, communications and port installations, recovery since the last war has been swift, and by 1953, in Western Germany alone, production had once again topped 700,000 tons.

Apart from the two war periods, there has been a process of steadily increasing production during a period when production in the United Kingdom had already reached its present level. The process in German fisheries (Western Germany in 1955) is very clearly reflected in the catches of three important species groups, thus :

Year	Cod and similar species	Herrings	Redfish
	..... *Metric tons*		
1910. . .	56 000	60 000	3 000
1938. . .	250 000	216 000	80 000
1955. . .	190 000	340 000	146 000

The pattern of development is, therefore, less complex than in the United Kingdom fisheries and reflects a deliberate policy of bulk production of low-priced varieties for which there was and is a strong demand in the prewar and postwar German economy, with much less of the discrimination and fluctuation which has characterized the United Kingdom market. Although these figures reflect the exploitation of the distant-water fisheries which coincided with the main prewar phase of German fishery development, it is significant that, in marked contrast to the United Kingdom, Germany has used much of her trawling capacity for the production of herring and also that redfish is of considerable commercial importance. In the postwar phase Germany, in spite of her other difficulties, had one advantage in the rehabilitation of her fisheries in that her merchant shipping fleets had been dispersed and there was thus available a considerable body of highly skilled manpower to build, maintain and operate the fishing fleets.

Government policies in relation to these developments have certain features in common in the postwar period, with some difference as to the extent of direct intervention, while in the prewar period they were quite different in character and purpose. Between the wars, fishery policy in the United Kingdom was mainly regulatory and supervisory in character and related to the protection of inland and coastal resources, safety at sea, conditions of employment of fishing crews, conduct of fishing vessels at sea, arbitration in disputes, etc., and certain marine research investigations. However, this was consistent with general economic policy and, in the light of the development which they foreshadowed, the limited financial aid afforded to inshore fishermen after World War I, and the investigations into economic conditions in the white fish and herring industries, were of special importance. Recognition of the special problems of the fisheries led to the setting up of the Herring Industry Board in 1935 and of the White Fish Commission in 1938, although the latter had no time to function before war supervened. The limited powers conferred on these agencies represented nevertheless a notable shift from earlier laissez-faire policies, and the issue of an Order under the Sea Fishing Industry Act 1933, to restrict landings from certain distant waters during hot weather months, was a further example of this trend.

The serious economic difficulties which threatened were averted by the outbreak of World War II when the entire system of production and distribution, while greatly restricted, came under strict control. Many of the controls,

and particularly price controls, were maintained during the postwar food stortage. At the same time, financial aid in the form of grants and loans was provided for the building and modernization of inshore craft; in practice this aid accelerated the development of the growing seine-net fishing fleet in the North Sea. Trawler building was mainly confined to distant-water vessels and was financed from private sources, although the government helped by the allocation of priorities in the usage of controlled materials and facilities. The Herring Industry Board was revived with extended powers and larger financial resources, and promoted a comprehensive and continuing program for the rationalization of operations and the promotion of wider market outlets on the basis of trade agreements abroad and increased facilities for utilization at home. It provided considerable financial help for the replacement of obsolete vessels, and also instituted a system of minimum prices which has continued since.

White fish prices were decontrolled in 1950, but marketing problems and rising costs of production had already become evident, and were intensified in the following months. The problems were complicated by the highly sectionalized character of the industry and the large number of undertakings. In 1951 the White Fish Authority was set up with powers and resources to reorganize, regulate and develop the white fish industry and has been in operation since. In 1950 direct subsidies were introduced, providing flat-rate payments on each stone of inshore vessels' catches, and deficiency payments to guarantee minimum daily earnings to near- and middle-water vessels. This has continued ever since, with periodical adjustments, of which the most important was the extension of the flat-rate payments to near- and middle-water vessels in addition to the deficiency payments. The authority's program has included the administration of the government's arrangements for modernizing the near- and middle-water and inshore fleets, of which many units were obsolete to the point of scrapping, by grants and loans toward the cost of new vessels and engines. It has also engaged in market promotion, vocational training and has financed experimental ventures. Concurrently the government has intensified research in processing technology and in marine fishery biology. It has been especially active in the promotion of the Permanent Commission for the North Sea Overfishing Convention, whose signatory countries have agreed to apply certain conservation measures in the North Sea, middle and distant waters. It is hoped that the restoration of stocks in commercial quantities in the North Sea and more certain knowledge of the movement of cod on the distant grounds will contribute materially to the reduction of fishing costs.

In Germany the fisheries were subject to much more direct governmental intervention before World War II. Faced with the familiar problems of declining yields, uneconomic returns and an aging fleet, the government in 1936 decided on the systematic replacement of fishing vessels which could no longer pay their way. A four-year plan was introduced for the modernization of the fleet and the introduction of new vessels, cheaper to run. Concurrently with this "scrap and build" program the government investigated market conditions, forecast supply and demand and established fixed prices for the principal commercial species.

At the end of World War II, the government was faced not only with the rebuilding of shore installations and the reconstruction of the fleets which had suffered a loss of 75 percent, but also problems arising from the partition of Germany with its consequent effects on markets. Much of the reconstruction was accomplished with public funds. The large landing centers in Bremerhaven, Cuxhaven and Hamburg were rebuilt on modern lines and considerable financial help was provided to finance new vessel construction, with much of the emphasis on large trawlers, of which about 100 have been built since the War. The whole marketing system came under strict supervision and prices have been stabilized by the introduction of price equalization arrangements. Meanwhile, in response to the strong demand for cheap fish supplies, especially processed herring, Germany has continued to import fairly heavily, with imports running at about 75 percent of the prewar level.

In Germany, therefore, the trend continues to be one of expansion, although two main problems are now causing anxiety, namely, the rising costs of production and the distribution of fish in the more distant inland markets.

In the United Kingdom, with the possible exception of herring, the trend is rather toward stabilization and rationalization of the trade consistent with fishing capacity. Both

government and industry are seriously concerned also with rising costs and how these can be reconciled with the low prices prevailing during periods of heavy supply and with a liberal import policy. So far the main sector, the distant-water trawling industry, has managed without financial help and, if ways and means can be found to absorb or avoid temporary surpluses, will probably be able to continue operations on a commercial basis. The inshore and near-water producers, however, continue to receive substantial help toward construction and operation. Eventually the replacement of the obsolete by more economic units, possibly with some reduction of total capacity, may lead to higher sustained earning, but in the meantime, it is proving increasingly difficult to retain an adequate force of manpower under conditions of full employment.

United States and Canada

While there are important differences between the fisheries of these two countries, the United States and Canada have in common their hard currency economies and their geographical position which spared them from the physical impact of military operations and from the destruction and damage inflicted by two world wars. The effects of war were, therefore, reflected in the requisitioning of manpower and fishing craft, scarcities of materials and facilities, changed patterns of trade, control of prices, etc., rather than in the severe losses of productive capacity, and exclusion from traditional fishing grounds suffered by the European fisheries. Over the past few decades, therefore, levels of production and trade have been consistently maintained, or raised, without violent wartime breaks in the continuity of the operations.

Certain basic natural features are common to the fisheries of both countries, which occupy large land masses with coastlines on two oceans, the Atlantic and the Pacific. Large stocks of prime commercial importance occur off both coasts — cod, haddock, herring, menhaden, redfish, lobster and shrimp in the Atlantic; salmon, halibut, herring, mackerel and tuna in the Pacific. In both cases the extent to which these resources could be profitably exploited has depended on the facility with which the supplies could be moved over large distances; this consideration has, in turn, led to much emphasis on processing and distribution from the earliest stages of development. In both countries, but especially in the United States, the fisheries, although they have attained very high levels of technical efficiency in many sectors, are not of major economic importance generally, but are of social, political, and economic importance locally in certain areas where they are firmly established as an industry supporting considerable capital investment. Fish consumption is generally low in both countries, but the total intake in the United States is, by reason of its population and intensity of distribution, high in relation to supplies, while the reverse is true in Canada. This points to one critical difference between the two industries, namely, that the bulk of the United States fish production is directed to the domestic market, which also absorbs a large volume of imported fish products, while the Canadian fisheries are heavily dependent on export outlets. Other differences reflect different levels and periods of economic progress and will emerge from a brief review of fishery developments in the two countries.

In the United States, fish production increased fairly steadily from about 1 million tons in 1921 to just over 2 million tons in 1936, a level which has been more or less maintained. This trend reflects not so much the spontaneous pressure of demand, since individual fish consumption in the U.S.A. is quite low at about 22 pounds (live weight) annually, as the gradual expansion and consolidation of the domestic market on the basis of increased processing and distribution facilities. At the same time some remarkable changes occurred in the exploitation of certain stocks, showing the remarkable flexibility of the industry and the rapid adjustments made possible by the country's great technical capacity. These changes also provide some pointers to the rather specialized markets which the U.S. fisheries serve. Thus the catch of Atlantic shrimp increased from just under 50,000 tons in 1929 to approximately 120,000 tons in 1954. In fact in recent years the value of the shrimp catch has been higher than that of any other single species.

This emphasizes the importance of fish products as a supplementary, or even luxury, food item on which the costs of consumer-appeal in the form of treatment and packaging can more easily be carried than they can on cheaper staple food items. The catch of *redfish*, previously regarded as virtually a trash fish (as

it still is in some countries) rose from less than *100* tons before 1930 to nearly *70,000* tons in 1953. In this case the introduction of filleting and deep-freezing made possible the marketing of this fish in much more attractive form under suitably euphonized trade names. The catch of *tuna* and *skipjack* increased from *45,000* tons in 1930 to about *140,000* tons in 1953; the increase reflects the growing popularity of this fish which has given rise to some of the most impressive technical developments in fisheries in the form of superbly equipped long-distance tuna-clippers and highly industrialized modern canning installations.

Catches of *menhaden* fluctuated considerably within a range of from 100,000 tons to 350,000 tons annually until the end of World War II, after which they increased steadily to nearly 770,000 tons in 1953, accounting for almost 40 percent of the entire United States catch. This fish is not for human consumption but is important as the main source of fish meal in the United States and the demand for fish meal has been consistently strong under the pressure of livestock feeding programs.

By contrast, and illustrating the unpredictable hazards attached to the fishery industries, the catches of *California Sardine* fell from *680,000* tons in 1936 to about *4,300* tons in 1953. During this period these great shoals virtually disappeared and continued to elude the most intensive research investigations, although there have been indications of their reappearance recently. Meanwhile catches of Pink and Red Salmon have been running at anything from one half to one third of their prewar levels.

The importance of processing and the flexibility made possible by extensive facilities for preservation and storage have been mentioned. Roughly speaking, over one third of total supplies is sold either fresh or frozen, while the remainder is more or less evenly divided as between canning and reduction for meal and oils. However, these proportions may vary quite considerably — between 10 and 20 percent — and there is a tendency for lower catches of one species to be offset by higher catches of another. In this situation the effects of imported fish supplies are viewed with mixed feelings. The producers, faced with high operational costs, fear the undermining of price structures which, they believe, already threaten the economic stability of their undertakings. The processors and distributors, while anxious to ensure continuity of supplies from domestic producers, are also concerned with employing their full capacity and with precarious margins in highly competitive food markets.

United States fish and fish product imports have more than doubled from a little over 200,000 tons in 1938 to nearly 500,000 tons in the 1950's. Increases for some individual items have been even greater, as the following figures show:

Product	1938	1953
	..... *Metric tons*	
Fresh and frozen	56 000	174 000
Shellfish (fresh, frozen and dried)	11 000	46 000
Canned fish	21 000	59 000
Fish meals	36 000	120 000

These figures reflect the trend already observed in domestic production and processing. Thus the imports of fresh and frozen fish include greatly increased quantities of groundfish fillets, especially from Canada and Iceland, and of tuna from Japan. The shellfish include large quantities of shrimp from Mexico, lobsters from Canada and other countries, and seed oysters from Japan. In the case of canned fish, the main increases were in tuna from Japan, salmon from Canada, and tuna and bonito from Peru. The increased import of fish meal is mainly due to high U.S. demand and increased supplies in Canada, Norway, Angola, Peru and South Africa. United States exports of fish and fishery products, as a whole, show an increase mainly due to large gains in the export of fish oil to Western Germany (1,200 tons to 48,600 tons in 1953). Exports of canned fish declined from 40,000 tons in 1938 to 21,000 tons in 1953.

Production in Canada since World War I has increased more slowly over-all and on a smaller scale. It is more convenient, in this context, to consider Newfoundland and Canada separately in view of the accession of Newfoundland in 1949 and of the different situations reflected in levels of production. In Canada, production rose from 375,000 tons (landed weight) in 1920 to about 550,000 tons in 1928, when it fell somewhat during the depression, and recovered to about 550,000 tons again in 1940.

The volume fluctuated around this level through World War II and then increased to over 675,000 tons in 1950 from which it has fallen back to about 600,000 tons. The catches of individual species show few major changes sufficient to influence total production, except in the case of herring, production of which was 90,000 tons in 1920, had risen to 250,000 tons in 1948 and was over 200,000 tons in 1953. In Newfoundland the trend is very different, production declining from a peak of nearly 440,000 tons in 1918 until after World War II when, following a short period of heavier catches, it fell to less than 190,000 tons in 1953. Most of this decline is reflected in decreasing catches of cod, the staple product of the Newfoundland fisheries.

These figures reflect marked differences in the entire structure and development of fisheries on the two coasts. On the Pacific Coast the concentrations of salmon and herring have lent themselves to modern industrialized processes, i.e., canning, freezing and reduction for meal and oil, to more centralized storage and distribution arrangements, requiring and attracting greater investments. The foundation of the industries here was the well-established export trade in canned salmon, although this has suffered some disturbance since the last war owing to the payment problems of importing countries, especially the United Kingdom. The natural abundance of a high-priced fish like salmon provided, therefore, an obvious incentive for the technical development of the Pacific Coast fisheries, and the latter increased under the pressure of wartime and immediate postwar food demands. It has been calculated that the number of fishermen increased by some 25 percent between 1938 and 1955, while the investment per man in primary industry more than doubled This mainly represents larger and more powerful craft fitted with modern navigational and searching equipment. Comparable figures are not available for the processing and distribution industries, but it is evident that here too the process of consolidation and mechanization of operations has continued. The number of plant workers is reported at less than 4,000 in 1955 compared with 6,000 in 1945 while production has been maintained and its value increased from less than 45 million Canadian dollars in 1945 to about 70 million Canadian dollars in 1954.

On the Atlantic Coast, however, production is much more dispersed and based on numerous small-scale operations conducted from remote and scattered fishing centers, including a number of islands where the absence of good communications has discouraged centralization and fortified rigidities in the social and economic structure. For many years the operations have followed a simple traditional pattern, and marketing has been mainly based on dried-salted products prepared locally on a "cottage-industry" scale. Under such conditions, which offered few opportunities for alternative employment, the fishermen have from time to time suffered considerable hardship when markets were weak, while their resultant poverty did not permit investment in cost-reducing installations and techniques which might strengthen their position in competitive markets. In Newfoundland, especially, these problems have occurred in their most acute form.

The decline in production noted above contrasts with the abundance of the resources off these shores which are fished by large liners and trawlers from as far away as Spain, Portugal, France and the United Kingdom.

Nevertheless, in the Atlantic provinces, excluding Newfoundland, some notable improvements have been effected since the last war. The fleet of large sea-going vessels on the Atlantic Coast has steadily grown and modern fish processing capacity has increased in response to the demand for frozen fillets in North America. Even in the small-boat fisheries many improvements have been achieved, the value of craft increasing threefold to over 20 million Canadian dollars between 1945 and 1954. The number of processing plants has increased, home canning has been largely replaced by factory methods and the traditional salt and pickle cures have given way increasingly to chilled and frozen products.

Even in Newfoundland, where the problems are more complex, since they involve not only modernization and concentration of the operations, diversification of products, etc., but also substantial transfers of population and alternative means of employment, some important changes have occurred. Many technical difficulties have been overcome, the production of salted cod fish has been reduced and the number of men engaged in the salt cod industry has fallen from 25,000 in 1945 to 14,000 in 1954. However, the production of salt cod is still an industry of prime importance in the economy of Newfoundland which, because of its outmoded structure, can no longer compete

successfully with its competitors, including other Canadian provinces. Its loss would further reduce diversification which is so important to Canada as a fish-exporting country.

The volume of these exports increased from less than 170,000 tons in 1938 to over 270,000 tons in 1953. Much of this is accounted for by the increased export of fresh and frozen products from about 50,000 tons in 1938 to nearly 120,000 tons in 1953, and of cured fish from 43,000 tons in 1938 to 74,000 tons in 1953, (exports from Newfoundland included in the latter year). These increases reflect growing dependence on the United States market as compared with the soft-currency countries in Europe to which much of Canada's prewar fish trade was directed. The United States now takes about 70 percent of Canada's total fish exports which themselves represent two thirds of total catches. In 1951 this included 50,000 tons of fish meal alone, representing over 200,000 tons of raw material. However, the marked decline after 1950 indicated the uncertainties in export markets and Canada's difficulties outside the hard-currency area, in competition with other exporters.

In relation to fishing developments in these countries, both governments have promoted large-scale programs, but with important differences, reflecting the different needs of the industries. Both countries have federal governments whose programs have been designed to supplement the activities of state and provincial governments and to undertake others of a nation-wide character.

In the United States, fishery development has proceeded without financial aid or direct intervention by government, drawing on the ample resources and technical and commercial experience of private industry. Wartime controls were quickly relaxed and the government concentrated its efforts on supervisory, regulatory, representative and research functions, both at federal and state level. The range of these has been wide, especially in the field of biological exploratory fishing, and marketing research. Since the war much greater importance has been attached to the resources as the basis of a modern food industry carrying considerable investments in the form of craft and, especially, processing and distributive facilities. Where such concentrations of capital are concerned, instabilities represented by fluctuations in the resource are costly, and the industry itself has strongly supported the government in its intensified research programs along both coasts. At the same time, in response to the very competitive marketing situation, widespread market intelligence services have been developed further since World War II, incorporating information as to catches, utilization, stocks, prices, etc., and forecasts of demand. In 1954 the program received a great impetus with the passing of the Saltonstall-Kennedy Act under which 30 percent of customs duties on fish imports, subject to an annual ceiling of $3,000,000, were appropriated for three years for conducting an educational service, expanding technological, biological and related research and services, and developing markets for fishery products of domestic origin. A wide range of projects has now been initiated, in close co-operation with universities and other institutions, and includes not only the intensification of established research investigations, but special programs of consumer education, school feeding, etc. In contrast to agriculture there are no subsidies of any kind and no measures of price stabilization, although in this connection it may be noted that the strengthening of fishermen's organizations has brought prices much more under the influence of collective negotiations and contracts. The general aim of policy is, by national and international action, to safeguard and promote better management of the natural resources by appropriate investigation and regulation, to ensure that fishery interests are adequately represented at the political level, especially in regard to imports and, through advisory services, to assist the fishery industries to produce and trade within the freely competitive structures of which they form part.

In Canada, whose economy likewise depends on private competitive enterprise, the government has found it necessary to intervene more directly in response to the economic hardship and attendant social problems experienced in certain sectors, particularly in the Eastern provinces. High domestic prices and shortages in export markets brought about some temporary improvement in earnings during and immediately after World War II, but not sufficient to induce permanent changes in the social and economic structures of the scattered fishing communities on the Atlantic seaboard. The more comprehensive program of social relief and economic development on which Canada is now embarked was to some extent envisaged in the price-support legislation enacted in 1944 and pro-

claimed in 1947. However, whereas this was originally designed to affect slumps in fish prices, it has tended to become a means of supplementing incomes in certain segments of the fishing population. Accordingly more direct measures were introduced to encourage the modernization of the Atlantic Coast fisheries. A federal subsidy for the construction of new craft of approved design was introduced and administered in conjunction with provincial low-interest loans and other aids to new construction. The provincial governments provided assistance for the installation of processing establishments in order to encourage the shift from handicraft to factory production methods. Some success has been achieved, but in several important sectors of the Atlantic Coast fisheries, the industry is still retarded and, in 1949, the federal government announced a policy of co-operation with provincial administrations to devise and implement a positive program of modernization. Much has been done in the analysis of specific problems and the drawing up of detailed plans for dealing with them and a few projects are now under way. In Newfoundland, as has been said, the problems are much more difficult, but are being tackled in accordance with a detailed plan with the help of a specially appointed Fisheries Development Authority.

In the Pacific Coast fisheries, development was mainly spontaneous and self-financing and the modernization and centralization of the processing and marketing operations encouraged the formation of strong fishermen's and plant workers' associations to promote their members' interests. However, these have shared in the benefits of the special insurance of craft and gear introduced by the government in 1953. They have also profited from the comprehensive program of biological and technological research co-ordinated and directed under the Fishery Research Board. They stand to gain much from continued investigation and conservation of salmon stocks as also from developments in canning and freezing technology and, in particular, were greatly assisted by the large public works involved in the U.S.-Canadian scheme for the by-passing of the Hell's Gate obstruction to the migratory passage of the salmon.

In domestic markets, increased efforts are now being made to popularize fish products and to reduce, in part, the dependence on exports. Overseas, commercial attachés provide a valuable service to the trade by their regular investigation of current marketing trends and potential export outlets.

In general, Canadian policy recognizes the inherent instability and lack of flexibility which put the fishery industries at some disadvantage in a fast developing economy, and is reflected in measures designed to provide, on the one hand incentives for more rapid development and, on the other, temporary relief to safeguard social and economic security in the poorer fishing communities.

The United States and Canada have a common interest not only in rivers running through the territories of both countries, and in the fisheries of the Great Lakes, but also in the marine stocks of the Pacific and Atlantic oceans. Both countries took an active part in the setting up of the North Pacific Fisheries Convention, the International Pacific Halibut Commission, the International Pacific Salmon Fisheries Commission, and the International Commission for the Northwest Atlantic Fisheries, under which research investigations are co-ordinated and joint conservation programs administered.

The Union of South Africa and South West Africa

The fisheries of the Union of South Africa and South West Africa are remarkable for their extremely rapid development during the post-war decade, in particular after 1947. In 1938 the South African catch amounted to 64,000 metric tons compared with 95,000 tons in 1947 and over 400,000 tons by 1952, while the South West African catch increased from an annual level of less than 10,000 tons in 1938 and 1947 to approximately 275,000 tons in 1953. The government has instituted as a precaution a conservation policy entailing the limitation of the annual catches of pilchards and maasbankers. This policy of both the Union and South West Africa precludes, until scientific research proves that the stocks of these species can be more extensively exploited, further increases in the annual production which, since 1950, has leveled off.

The prewar structure of the South African fishing industries comprised the following major branches: (*a*) an off-shore trawling fleet of 26 trawlers operated by two companies based on four commercial ports, landed annually be-

tween 15,000 and 20,000 tons of fish to provide the bulk of the supplies of fresh and iced fish for the domestic market, as well as for exports to the Rhodesias ; (*b*) a deep-sea snoeking fleet, based on Cape Town but operating also off South West Africa, provided a salted product for the domestic markets as well as for exports to Mauritius, in particular ; (*c*) a rock lobster fishing industry, delivering catches to canneries exporting, since the first decade of the century, the bulk of their packs to principally the French market, and also to packers exporting frozen tails, since 1930, to the United States ; (*d*) an inshore fishery industry, using hand-lines, beach-seines, and miscellaneous types of gear, sometimes operated from beaches, but mostly from small craft going out for daily trips. Apart from the motorized inshore craft at the major harbors, mechanization at the comparatively isolated inshore fishing centers occurred rapidly during the 1930's after the initiation of a government program of construction of fishing harbors at several of these localities.

On the outbreak of war, the trawler fleet was seriously depleted by requisitions, but the remainder of the trawlers was used in a vigorous effort to maintain annual landings. The war also created a demand for vitamin liver oils and thereby brought into existence a shark fishery to supply a liver-processing and oil-extracting industry which also used livers from the trawl catches. Maritime transport difficulties and factors caused by the hostilities reduced imports of canned and cured fish, and with the increased domestic demand, the canneries, which were now packing their canned rock lobster for the United Kingdom's Ministry of Food, began to turn their attention to other types of fish.

Various government commissions during the 1920's and 1930's had highlighted the impoverishment of the inshore fishermen and there was a possibility that they might relapse back to the prewar levels after the war-induced prosperity has passed by. To meet this situation, together with the desire to utilize unexploited fish stocks and increase the supply of fish, the Fisheries Development Corporation was created in 1944.

Although brought into existence by a parliamentary enactment and with the capital provided by the government, the corporation is administered along business lines. Its shares are of two kinds, one kind being used for housing and other social services, research and financial aid to fishermen for the acquisition of craft and gear, and the other for the promotion of industrial and commercial activities.

The corporation has constructed housing schemes, some of which were later sold to the private fishing companies, for all groups of fishermen in various localities. It introduced a scheme to assist fishermen to have craft built and engines installed. Co-operatives have been initiated at one or two localities. Technological and biological research has been financed and the corporation played a major part in the establishment, in 1946, of a Fishing Industry Research Institute, which is financed partly by the government and partly by virtually all the private companies in the fishing industry, to undertake joint technological research. To enable the Division of Fisheries of the Department of Commerce of the Union of South Africa, and the Fisheries Section of the Administration of South West Africa to expedite the crucially important joint program of pilchard research, the corporation is providing the capital for three research vessels and other facilities, in addition to those already operated by the government bodies concerned. A levy on the catches is to enable the corporation to finance this investment in biological research.

The application of technical standards for fishery products intended for export, originally undertaken by the Fishing Industry Research Institute, has, since March 1953, been operated by an inspectorate service of the Bureau of Standards.

After a slight leveling off during the war years in the construction and improvement of inshore fishing harbors, the development program was again resumed, but in view of retrenchment in the field of government expenditure, has tapered off during the 1950's.

As the general policy of the government is to encourage, guide, supervise and assist private enterprise, the fishing industry has experienced government interference mainly in terms of conservation policies limiting the quantities of rock lobster, pilchards and maasbankers that may be taken during a given season, together with a prescribed minimum mesh size for trawl nets and minimum size limit for different commercial species, as well as close seasons in different areas for particular species. Furthermore, through the Bureau of Standards, the government is imposing on producers compul-

sory quality standards for products, and has also been continuing after the war the policy of general price controls, which included until 1956 also fresh fish. The domestic price for fish meal has been controlled at a lower level than the overseas price and producers had to satisfy the internal demand first before exporting.

Although the State does not actually participate in fishery production activities, it has, through the Fisheries Development Corporation, been taking up a certain percentage of the share capital of certain companies. The corporation has only a minor vote and control in these associated companies, as the bulk of the investment in the fishery industry, whether in the companies closely associated with the corporation or in those not financially related, has come from private sources. The availability of private capital to the South African and South West African fishing industry at a time when the other sectors of the national economy were also booming and competing for capital, reflects its prosperous and profitable condition during the past few years.

While the government policy to assist research and provide capital through the corporation, to develop fishing harbors, etc., most definitely contributed to the prosperity of the industry, the key to prosperity lies in the availability of markets, not only domestically, but also overseas.

Originally, the war shortages and the creation of demands for new fishery products enabled the South African fishermen and producers to extend their existing experience to new fields. When war controls of imports disappeared, the imposition of currency control in 1948 prevented an inflow of canned products from overseas countries. The devaluation of the South African £ in September 1949 benefited the local producers in various ways ; North American imports, if available, became increasingly expensive, while the returns received for South African and South West African exports to the United States markets increased appreciably. The currency difficulties strengthened the South African exporters' competitive position toward other producers in soft-currency markets. The disappearance of the California pilchard eliminated an important supply of canned fish on the international market at a time when another important exporter, Japan, was in the initial stages of rehabilitating its fisheries after the war.

The postwar expansion of the South African, as well as the European and North American markets for fish meal for livestock feeding is the key to the establishment of the large reduction plants on the South African west coast and in South West Africa, and the output of the product was maintained even with falls in the prices of the joint product, fish body oils.

CURRENT DEVELOPMENT PROGRAMS AND OUTLOOK

In reviewing present programs and prospects, it is useful to distinguish those in the more advanced economies, which have been subject to a continuous process of adjustment, and those in underdeveloped economies, in which no major evolutionary changes have occurred over long periods of time. The degree of technical development alone may not be the most useful criterion and in some cases, e.g., in certain inshore operations, differences may not be very conspicuous, but the more fundamental distinction is between relatively flexible and virtually stagnant conditions.

Situation in the Developed Fisheries

Costs of Production. The operation of seagoing fishing vessels and shore establishments and facilities involves a wide range of cost factors. A few of these are specific to fisheries, but the greater part are common to a number of industries, among which the fishing industry is not important. Almost without exception these costs have risen steadily since World War II, and such economies as have been effected in specific costs have had only a limited impact on the total costs of producing and marketing fish supplies.

Shipbuilding costs have increased greatly in many places with the postwar rise in the cost of labor and materials, especially steel, timber and machinery. The spectacular increase in the cost of cordage, especially sisal and manila, reacted sharply on fisheries, where consumption is heavy. There is a prospect of cordage costs being reduced with the gradual introduction of synthetic fibers, but the initial investments necessary are considerable. Similarly the costs of coal, oil, ice, provisions and consumable hull and engine-room stores have increased, and in

most cases these contribute appreciably to costs, especially in trawling. Of the capital cost of port and harbor installations the fishery industries usually contribute only a small share, except in connection with large-scale processing establishments, but the increased cost of maintenance and operation has been reflected in higher wharfage and ground rents in many places.

Handling, processing and marketing costs generally have continued to rise everywhere and, in the case of fish products, there are almost always additional costs because of their perishability. Freight charges, in particular, have come to represent a higher proportion of the cost of fish products. Again, postwar improvements in quality which in the long-term are expected to improve the market, have meanwhile increased costs, for instance, in the substitution of more hygienic materials like aluminum and plastics and in the overhead costs of inspection and grading.

Finally, the increasing costs of labor are reflected in every phase of fish production and distribution and are due not only to the generally rising scales of remuneration but also to the postwar efforts to improve conditions of labor in some industries by the introduction of statutory working hours, overtime, minimum wage scales and other guarantees against loss of earnings due to fluctuations in turnover.

In Europe and North America therefore the problem of rising costs of production has become one of critical importance which is having notable effects on the structure of the industries. Many measures have been introduced both publicly and privately, in an attempt to keep costs down. The more successful have involved collective organization of some kind. Producers' associations have achieved some substantial economies of scale in the supply of fuel, ice, cordage, provisions, landing equipment, containers, fishing equipment, etc., and in the provision of repair, maintenance and other services. Similarly, on a smaller scale, fishermen's co-operatives have organized collective supplies on a non-profit-making basis. Governments have given encouragement, especially through the promotion of co-operatives, which in most countries enjoy certain privileges and sometimes financial help in their promotion and management. In many cases, governments have offered special concessions to the fishery industry, e.g., remission of taxes on fuel and certain imported supplies, special freight rates, etc., and, sometimes, e.g., in Iceland and the United Kingdom they pay direct subsidies to offset high costs in the less profitable sectors of the industry.

Investment. Reference has already been made to certain obvious deterrents to investment in fishery undertakings. The risks associated with uncertain catches and excessive perishability, and the absence of ownership over the resource except in special cases, have been mentioned in this connection. It is not, therefore, unexpected to find that most of the investment in fisheries has, in the past, come from a relatively small number of people having specialized experience of fisheries and, in most cases, has derived from savings accumulated during periods of profitable fishery operations. Many highly developed fisheries are still characterized by a very large number of individually owned small firms, many of which are managed by successful fishing skippers or their families. It is only comparatively recently that the heavy requirements of capital and the introduction of vertical integration have promoted the growth of larger public companies, particularly in the most powerful and successful sectors of the trade. Apart from this development, investment in the fishing industries between the wars was low with consequences indicated in the section above on fishery policies before World War II.

The general rise in food prices during and particularly just after World War II produced increased profits in many fishery industries and attracted other capital to some extent. This was badly needed to make up for insufficient maintenance and improvement of capital equipment both before and during the war. In the case of the more powerful and long-established producers, processors and merchants, e.g., those dealing in distant-water cod, tuna, salmon, canned and frozen products, etc., much of the modernization and reconstruction was accomplished from private resources and from bank loans for which the enhanced value of prewar assets provided adequate collateral — especially in the U.S.A., Western Canada and the United Kingdom.

In most developed fisheries the modernization of equipment and facilities and the promotion of new large-scale undertakings has depended on government credit and subsidy. This has applied particularly to boat construction, for which old credit schemes have been extend-

ed or new ones introduced in Canada, Belgium, the Netherlands, France, Germany, Norway, Sweden, Japan, the United Kingdom, Italy and Denmark. To some extent this dependence on credit has permitted a certain degree of rationalization based on the restriction of investments to craft of approved design and economic operation. In most cases the schemes comprise some form of subsidy by way of low interest charges or direct grant. In many cases these schemes have the additional objective of encouraging ownership of craft and gear by the working fishermen and of increasing thereby the latter's economic independence and social security.

Most postwar processing and distribution facilities have been privately financed except in special cases, as in Norway and Iceland, where the government has financed the construction of large-scale processing plants to absorb seasonal landings from large numbers of small-scale undertakings. This applies also to ice factories and cold storage and, in a number of countries, port installations and transport are under public ownership of some kind.

It is still early, even now, to assess the results of postwar investment policies in the long term. Immediate benefits have undoubtedly been conferred on a large number of undertakings and the industries are much better equipped and more efficient as a result. However, ultimate success will depend on a process of selective investment and consequent rationalization of production and marketing which will be largely determined by developments in other directions, especially by accurate knowledge and prediction of the behavior of commercially important fish stocks, and the promotion of more stable markets.

Investigation of Resources and Management of their Exploitation. The period since World War II has seen a striking development of fisheries biology — virtually a sudden flowering of a plant of which the seed was planted in the second half of the nineteenth century. For more than fifty years many nations had been gathering facts about fish of economic importance, about the waters in which they lived and about the catches taken from them. The main features of the biology of the important species were described, and certain important characteristics of the fisheries were recognized as having their origin in biological phenomena; in particular it was recognized that the fluctuations that appeared in the catches were in large part due to variations in the real abundance of the stocks of fish. However, despite the evidence in the North Sea that relaxation of fishing during World War I had allowed a restoration of the stocks there, and that resumption of fishing had again reduced those stocks, it had not been fully established before World War II that the characteristics of a stock of fish, notably its abundance, could be affected by the characteristics of the fishing operations brought to bear upon it. A repetition of this experience during and after World War II coincided with other experiences and with the successful development of important sections of the theory of fishing, and brought the conviction that human activities could significantly influence natural stocks of fish. The spread of this conviction has had two important consequences; firstly, governments are now persuaded of the importance of having more and better information concerning the resources exploited by and accessible to their fishing fleets; secondly, it has become accepted that there must be positive international collaboration both in the investigation of resources and in the formulation and implementation of controls of fishing activities. The latter consequence is manifest in the establishment of several new international fishery councils and commissions, and, more importantly, in the nature and scope of the activities of these bodies. Examination of the reports of the meetings of these bodies, and of the steadily growing volume of fisheries literature, reveals that fisheries science is being developed with considerable vigor; it is not over-optimistic to say that there are signs that this science will permit a measure of effective and useful control in a field where hitherto it has been thought that no control was possible.

Problems of Domestic and International Trade. Almost without exception the advanced fishery industries have been facing increasingly difficult marketing situations since the disappearance of the immediate postwar food shortages. It is true that rationing persisted for some years, and that fish prices were controlled in some countries, especially the United Kingdom, but even before these restrictions were lifted, fish consumption was already falling from the involuntarily high levels which prevailed during periods of meat shortage. However, it was not only the falling-off in the over-all demand

for fish, but the discrimination on the part of consumers, which compelled certain adjustments in the pattern of fish production and trade, and some industries have been less able than others to diversify their products. In Europe particularly this has had an important influence on recent programs. In order to maintain demand in competitive food markets it has been necessary to improve the quality and appearance of fish products and to meet the growing preference for easily prepared dishes, especially in communities where there is a high level of employment among housewives. However, over 50 percent of catches in Western Europe are 10 to 15 days old when landed, and the problem of maintaining quality at this stage is acute. Much of the catch is still distributed fresh, and some limited improvements have been introduced in the form of better containers and more efficient transport. Fish fillets, which developed as an economy in the distribution of bulk supplies of white fish, have become firmly established now on the grounds of consumer preference. They are particularly important in the freezing trade, which has slowly developed in Europe since the war, and which is gradually building up demand on the basis of quality, attractiveness and diversity of preparation. In contrast to North America, development has been slow in Europe, due to the lack of cold storage and refrigeration facilities in the wholesale and retail network and, in part at least, to a consumer resistance to frozen products which is gradually being overcome. However, the problem of improving the quality of distant-water catches is still acute and one which is the subject of much research and experimentation.

By contrast the near-water fisheries from which catches can be taken quickly have been able to support a relatively profitable trade in varieties for which there is a fairly consistent demand, e.g., plaice, soles, turbot.

In North America the technical problems of marketing have been much less difficult than in Europe, and a very wide range of products ranging from fresh to precooked preparations, in various forms from whole fish to fish sticks, have been marketed with the assistance of the highly developed selling techniques of the distributive trade. However, competition in food markets is intense, fish consumption is traditionally rather low and the trade has had to display great flexibility in both creating and meeting demand.

Internationally the problems of consumer discrimination are aggravated by balance-of-payments difficulties which have operated, not only to restrict in some cases, but also to admit imports to competitive markets in the interests of liberalized trading in accordance with commitments under the General Agreement on Trade and Tariffs (GATT) or the Organization for European Economic Cooperation (OEEC).

Most government fishery programs in Europe and North America have placed much emphasis on the resolution of marketing difficulties by way of market promotion, marketing regulation and reorganization and price support or regulation. Government-sponsored development authorities, marketing boards, sales associations or comparable agencies having specific functions in relation to the sale and distribution of fish products, have been set up in Norway, the Netherlands, Germany, Sweden, the United Kingdom and, in all cases, price equalization, price support or minimum price arrangements are operating for particular species of special importance. Consumer education, advertising, and school-feeding programs have been promoted in most Northwest European countries and North America. A steady sequence of bilateral trade agreements have been ratified, notably, in recent years, between Northwest European exporters and the U.S.S.R. and Eastern Europe in an attempt to promote wider export outlets. Internationally OEEC has studied the problems of fish marketing in Western Europe and some measures of liberalization have resulted. However, the difficulties of domestic producers in the main consumer markets are reflected in the continuation of a wide and complex range of quotas and tariffs. The problems of raising consumption at economic levels of price, and of absorbing seasonal surpluses in both domestic and international trade, still dominate the fishery situation in virtually all the advanced fishing countries.

There is, however, one notable exception to the foregoing observations which apply to the human consumption of fish products. The postwar market for fish meals has remained firm and apparently unaffected by the spectacular increase in postwar fish-meal production. In those countries where large quantities of fish are produced exclusively for the manufacture of fish meal, especially Norway, this market represents an element of stability in the uncertain conditions described above.

Outlook. Little immediate or sudden change is foreseen in the highly developed fisheries, but rather the continuation of a trend toward the rationalization of operations on the basis of increasing technical efficiency, a closer appreciation of investment prospects and wider knowledge of resources. The perfection of techniques of location and capture and the improvement of boat design and propulsion will certainly increase the speed, efficiency and economy of the fishing operations themselves. The progress already achieved in food processing techniques indicates the fairly early possibility of preserving fish products over longer periods and in more varied forms. This should lead to much more stability in the trade and permit a heavier investment in fish marketing where one of the main problems is that of fluctuations in supply. In this connection, it seems inevitable that, as a matter of economic necessity, the fresh fish trade will gradually give way to deep-frozen products in Europe, as in North America, and that consumption may respond to a wider range of easily prepared fish products.

These developments will involve more concentration and centralization of the operations, more mechanization and more efficient use of manpower. In some places the process will be encouraged by the shortages of manpower already apparent. The natural trend therefore will be for the more powerful concerns to consolidate their position and to extend their interests, probably at the expense of smaller undertakings, except where these are engaged in some localized or specialized small-scale trade, or where they are protected and assisted by governments on general economic and social grounds. For some time government programs of financial aid and relief to the weaker sectors of the industry will continue until the latter can be absorbed into other economic activities or their operations brought into line with modern industrial practice. Immediate efforts will work toward the consolidation of production and marketing at present levels, with some reduction due to the scrapping of obsolete equipment without replacement — possibly in the North Sea and certain coastal fisheries — and some increases based on the demand for fish meals.

Underdeveloped Fisheries

In contrast to the situations described in the foregoing, the situation in the underdeveloped fisheries shows very few changes over a very long period. They have many features in common with agriculture which simply connote conditions of general economic underdevelopment and which are sufficiently well known to require little comment here, beyond noting that poverty, ignorance and structural weaknesses are particularly potent factors in fisheries. The purpose of this brief review is to refer to such changes as have occurred and which could occur in the foreseeable future.

Production Methods. Almost everywhere the fishing operations, however complicated and dexterous they may be, are conducted in narrow coastal strips of water and employ simple equipment and local materials. Moreover, the operations are scattered over long stretches of coastal and inland waters, involving large populations of fishermen in numerous but isolated communities. The problem of training fishermen in the use of improved methods and equipment can only be tackled, therefore, on the basis of localized pilot projects where other factors such as demand and communications are favorable. In particular the mechanization of the marine operations, resulting in faster trips, extended range, increased fishing time and heavier catches, has proved to offer one of the readiest means of improvement, and some local successes have been achieved in various countries, especially in Bombay, Hong Kong and Singapore. However, the problems of adapting local craft, introducing new craft and installing suitable engines are very often closely related to those of training the fishermen themselves. If the benefits of improved methods are to spread, extensive vocational training facilities will be required and few countries are equipped to provide them at present. Nevertheless, some remarkable progress has been achieved since the war.

Obviously the financing of these improvements is quite beyond the resources of local fishermen and, apart from a few sectors of the trade, e.g., in the Philippines and Indonesia, where mechanization occurred earlier, has depended on government credit and subsidy. Again, most of this has been on a localized scale, e.g., in India, Pakistan, Ceylon, Hong Kong, Singapore, the Gold Coast, Barbados, and the amounts involved are very small in relation to the widespread need. In many cases there is a large element of subsidy, and it still remains to be seen whether loans can

be repaid and, more important, whether boats, engines and gear can be replaced out of increased earnings. However, the fact that most postwar government programs on underdeveloped fisheries contain some provision, albeit small, for the provision of credit represents a significant development of fishery policy.

Demand. Early postwar fishery programs in these areas were dominated by a desire to increase fish production in accordance with certain nutritional targets. The demand factor was either overlooked, or at least disregarded, and to some extent this imbalance has prevailed, encouraged to some extent by this earlier bias which is reflected in the staffing of government fishery services. However, the small changes and slow progress achieved in the production processes gradually directed attention to the fact that traditional facilities and channels for fish distribution are inadequate and entirely unsuited to an increased flow of production in most areas. Moreover, nutritional needs provide no reliable index of consumer demand which is limited, fundamentally by poverty but also by unfamiliarity, prejudices and religious bans.

There are thus two main aspects to the problem of demand, firstly the reform of the structure and practices of the fish trade itself in the interests of increased availability at reduced cost, and secondly, the mobilization of demand through appropriate educational measures. In the case of marketing, the critical factor is the irregularity and extreme perishability of fish supplies which, in many areas, is aggravated by problems of climate and distance. In the absence of facilities for holding, preserving or transporting supplies, the trade is highly speculative, and the merchants have traditionally protected themselves by operating on high margins such as can be imposed where the merchant has control over supplies and caters for a restricted market. In particular the fragmentation and diffusion of primary production, and often of retailing, have permitted the merchants to acquire a virtual monopoly in their particular areas, and have also encouraged the formation of long, tortuous chains of distribution.

Most governments have now become aware of the limitation imposed on any fishery development schemes by such rigid monopolistic structures but, so far, very little has been done to determine the precise functions of the intermediaries in the fish trade or the factors which promote such inflexible structures. Many governments have resorted to co-operative organization as a means of reducing the power of the merchants and increasing the earnings of fishermen, in order to induce increased production. It is extremely difficult to evaluate the success of the movement so far in underdeveloped fisheries but, with a few notable exceptions, it would appear that the main result has been to replace the private merchant without influencing the structure of the trade. Where such organizations have succeeded, e.g., in Bombay and Hong Kong, other favorable marketing factors operated, especially the pressure of demand in large urban communities. Nevertheless, the movement is quite strongly established politically, and a relatively large number of co-operative fish-marketing organizations are operating, notably in India, Ceylon, Burma, Indonesia and some dependent territories. Their weakness lies mainly in the field of management and commercial operation and the ill-preparedness of many fishermen for direct participation in such activities.

In the matter of facilities, governments have been able to accomplish a little more, e.g., by provision of ice factories, cold storage, curing yards, wholesale and retail premises, etc., again on a very limited scale in a few selected fishing centers.

In the field of education and training virtually nothing significant has so far been accomplished by way of consumer education and vocational training in the industry. Some localized campaigns have been conducted with guidance provided under the Expanded Technical Assistance Program, e.g., in Chile and Mexico. In the underdeveloped areas as a whole, there have been few efforts to promote increased consumption by means of school and adult education, communal feeding and nutrition programs, etc., and in many cases such efforts would be premature until regular fish supplies can be ensured. A few government officers have been trained in fish processing and distribution in some countries, but so far such training has not been transferred to the trade itself.

In the general sense therefore, there have been few successful efforts since the war to widen the bottleneck between fishermen and consumers and this, perhaps, is one of the main weaknesses of postwar government fishery programs, due, in part no doubt, to the scar-

city of qualified personnel and the degree of dependence on developments in other fields, e.g., transport, health, education and industrial development generally.

Resources. In the period immediately following World War II considerable attention was directed to the need for rehabilitating the fishery industries of the underdeveloped countries that had suffered war damage, and to the possibility of securing increased production from fisheries generally in all underdeveloped countries. The strength of the interest derived in part from the fact that fish was a staple item of the diet of the countries of Asia, and in part from the arguments that more animal protein should be available to the peoples of underdeveloped countries, that fish was one of the most readily accessible resources and its industry one of the most easily developed. While some steps were taken toward immediate industrial rehabilitation and development, notably in the massive fishery rehabilitation operations of the United Nations Relief and Rehabilitation Administration (UNRRA) there was also considerable interest in the speculations and problems suggested by the resources. Attention was directed to the vast oceanic areas of the Southern Hemisphere and to the great and complex inland water systems of Asia, Africa and Latin America. It was argued that these presented great, untapped fishery resources, but this argument led to the need for exploration of these areas and investigation of the resources. It was an historical coincidence that at this time fishery science was represented almost exclusively by biologists, and it is probable that it is a consequence of this that governmental programs for fisheries gave considerable emphasis to resources research. In many countries the chief manifestation of governmental interest in this industry was the establishment of research laboratories, and it is probably not unjust to say that the work of these institutions was hampered by the fact that they were established without the necessary contact with industry. Such contact is indispensable to the applied science of fisheries as a source of information concerning the industry and its operations, and as a means of ensuring that research is oriented to the needs and capacities of the existing industry. However, both nationally and internationally there has been a steady broadening of the scope of the fisheries program. For example, the functions of the Indo-Pacific Fisheries Council cover all phases of the industry, mobilize all research disciplines and relate to comprehensive developmental programs. Attention has been paid by this council and other similar bodies to problems of statistical collection, improvement of craft and gear, development and improvement of marketing, to the socio-economic problems of fishery industries, to increasing the consumption of fish, and to many other similar problems. Training centers have been conducted for the training of governmental officials in general fisheries science, and in particular aspects of the subject. By these means the fishery programs in these countries are being brought into balance, with the consequence that resources research is being put into correct perspective.

The fishery resources within the boundaries of the underdeveloped countries, and accessible to them, are undoubtedly considerable. While very large catches of fish are taken from inland waters it is obvious that these can be greatly increased. At present there is considerable activity in research on these resources and in the development of their exploitation. These activities relate to the open systems of rivers, lakes and irrigation systems occupied by wild stocks of fish, to irrigated agricultural lands, and to the closed systems of ponds, dams, etc. In marine waters there are important stocks under steady exploitation with respect to which there is a need for intensive research along the lines developed in northern countries; this need has been recognized and steps are being taken to bring the research to the required level. There are also extensive areas in which exploitation is negligible or nil; fundamental oceanographic research and fishery exploration are being developed to furnish the basic description of the resources of these areas.

External Aid Programs. It will not be possible here to review in detail the many forms of international and bilateral assistance rendered in the execution of fishery development programs. However, this action can be regarded in a better perspective if the problems of development in fisheries can be summarized as falling within three main groups, viz., uncoordinated planning, lack of capital and inefficiencies at the managerial and operational level. This also permits a convenient grouping of the activities of the agencies mainly concerned.

The International Co-operation Administration (ICA) and its predecessor agencies concerned with the administration of United States assistance for technical development, has been mainly concerned with the last two groups, namely the acquisition of facilities and equipment and the provision of specialized advice at the operational level. Under this program, embracing a large number of countries throughout the underdeveloped areas, fishing craft, engines, nets and cordage, ice factories, cold storage, transport, processing installations, etc., have been supplied and in some cases experts have been assigned to help governments in the use of such facilities, e.g., in fishing operations, fishery research and fish processing. In a few countries general fishery advisers have been appointed mainly to assist the governments to determine their needs in the way of equipment, to examine the justification for and assist in the execution of certain projects. With its large financial resources and widespread area of activity, this agency has become a powerful factor in many national development programs, especially in fisheries where local financial resources are slender even in relation to other national programs.

The Colombo Plan is of course confined to Southeast Asia and its main effort in fisheries has been concentrated so far in Ceylon. Here a substantial program has been launched under which deep-sea trawlers, cold storage and a number of small marine engines have been supplied, while a team of experts has been working for several years in connection with the operations and in the promotion of fishermen's co-operatives. At present, arrangements are in progress for the extension of this assistance to other countries in the region.

Mention must also be made of the agreement between Norway, India and the United Nations under which a team of Norwegian experts is engaged in the social and economic development of an entire fishing community in a fishing village in Travancore-Cochin. This program is unique in fisheries and the assistance provides for equipment and expert aid in all aspects of the village life, e.g., in fishing, marketing, co-operatives, health, housing, roads, etc.

In all of the foregoing the provision of financial aid in the form of equipment and facilities is an essential element. In this important respect these programs differ from that of FAO which is mainly concerned with the planning and co-ordination of food development programs and with the provision of expert advice in the planning and execution of national development projects. There is no provision for equipment or facilities beyond the limited needs of a particular project or for demonstration purposes. In contrast to other agencies, it is an essential function of FAO to establish a permanent consultative body at the service of its member countries, to maintain continuous liaison with them and to keep their programs under review. In the case of fisheries this has had a considerable impact on development programs over the last ten years. In many countries very little indeed was known of the fisheries, their potentialities or their problems, and there were no trained observers available to make the preliminary evaluation essential to planning. These countries therefore looked to FAO for consultation and advice. The need for regional intergovernmental consultation on problems of common interest has been partly met through the formation of the FAO Regional Councils in the Indo-Pacific and Mediterranean regions, and these have since become quite significant policy-forming instruments of the Member Governments concerned. In addition to consultation and investigations under its Regular Program, FAO has also, under its Expanded Technical Assistance Program, undertaken fishery surveys, the appraisal of development projects and the drawing up of plans. At the operational level again, its work has depended mainly on local resources of personnel and equipment and, especially, in the conduct of training and demonstration at the level of existing industry.

This, in turn, has thrown emphasis on the weakness of counterpart support generally, which is particularly weak in fisheries in comparison with other fields. In addition to fellowships, normally awarded as part of the follow-up of individual field projects, a number of training centers have been arranged, according to regional needs, in fishery administration, biology, statistics, marketing and inland fisheries.

It would be premature to evaluate such external aid as has been supplied but clearly the impact on small fishing programs has been considerable and, apart from any successes achieved locally, has had a permanent influence on the direction of fishing policy in these areas.

There have been promising indications of closer co-operation between the agencies concerned and, clearly, the value of external aid

would be greatly enhanced if, as a result of permanent consultation and advice at planning level, capital investment programs and assistance in the field could be co-ordinated.

Outlook. It is almost a truism to state that widespread radical changes are not expected to occur in underdeveloped fisheries in the near future, but this needs to be explained by reference to the fact that fishery policies are still far from being co-ordinated with general economic and food policies, that the available public services are weak and inadequately staffed by comparison with agriculture, and that these are often more limiting factors than the intrinsic technical difficulties of introducing improvements. Naturally any over-all and significant increase of fish production and consumption must depend on economic developments outside the industry which will release demand from its present restraints. On a local scale, however, some continuing improvements can be expected. Marine fishery research is necessarily long-term in its execution, but, nevertheless, on the basis of existing appraisals, some success may be achieved by exploratory and experimental fishing on the fringe of present operations. The progress of mechanization and gear improvement will continue, especially in India, and should receive some impetus from the improvement of marketing facilities in the form of better communications and modest facilities for storage and processing. Institutionally, the marketing situation will continue to prove a limiting factor, but it seems certain that many more governments will give attention to this problem now, and some increase and expansion of co-operative marketing arrangements can be anticipated.

The more significant improvements will probably occur in the Indo-Pacific region where fish is of much greater and more clearly recognized importance than elsewhere. Few changes can be foreseen in the Near East, but the programs already well under way in Africa give every indication of satisfactory progress, especially in inland fisheries and the improvement of fishing methods. In Latin America, development is more closely associated with balance-of-payment problems and while the production of certain popular exportable commodities like fish meal and tuna can be expected to increase, it will be more difficult to increase production of cheaper species for domestic consumption, and considerable efforts will be required to establish channels of distribution on domestic markets.

ANNEX TABLES

ANNEX TABLE 1. ESTIMATED WORLD PRODUCTION OF MAJOR COMMODITIES (WORLD, EXCLUDING U.S.S.R., EASTERN EUROPE AND CHINA)

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Wheat	95.0	113.3	129.9	118.2	122.2
Barley	28.5	36.1	43.7	44.2	45.8
Oats	37.5	42.9	42.2	43.6	46.6
Maize	94.1	118.4	127.3	121.6	129.4
Rice (paddy)	100.9	106.1	121.6	116.1	122.3
Sugar (centrifugal)	20.0	26.6	30.8	31.5	31.6
Fats and oils (oil equivalent)[1]	15.0	18.0	19.9	20.9	20.4
Citrus fruit	11.1	14.9	16.9	17.3	17.4
Cocoa	0.73	0.75	0.74	0.82	0.78
Coffee	2.41	2.24	2.50	2.47	2.64
Tea	0.46	0.56	0.60	0.65	0.67
Tobacco	1.96	2.44	2.68	2.79	2.83
Cotton (lint)	5.48	5.76	6.66	6.50	6.78
Jute	1.95	2.03	1.50	1.65	2.32
Wool (greasy basis)	1.51	1.59	1.74	1.76	1.81
Rubber (natural)	1.00	1.74	1.76	1.83	1.94
Milk (total)	193.6	207.3	225.4	228.3	228.0
Meat (total)[2]	25.4	29.7	33.8	35.4	36.8
Eggs[3]	4.48	6.10	6.73	7.37	7.37

[1]Includes animal fats.
[2]Western Europe, North America, Latin America and Oceania only.
[3]Western Europe, North America and Oceania only.

ANNEX TABLE 2 A. WESTERN EUROPE : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	..... *Million metric tons*				
Bread grain	38.55	36.75	41.95	43.34	44.29
Coarse grain[1]	35.24	32.30	38.97	36.84	38.94
Sugar (centrifugal)	4.02	5.19	7.14	6.63	6.74
Potatoes	69.87	76.34	77.87	80.60	73.90
Citrus fruit	1.99	2.10	2.36	2.64	2.61
Apples	7.43	8.72	9.23	9.45	8.62
Wine	14.13	13.09	15.84	15.29	14.60
Olive oil	0.81	0.86	1.10	0.85	0.75
Tobacco	0.19	0.25	0.28	0.28	0.29
Beef and veal	3.92	3.67	4.48	4.79	4.93
Pigmeat	4.18	3.84	4.87	5.19	5.39
Mutton and lamb	0.73	0.57	0.62	0.64	0.65
Eggs	2.14	2.24	2.60	2.67	2.72
Milk (total)	80.06	82.33	93.20	94.94	[2]96.04
Index of all farm products	100	107	123	124	125
FOREST PRODUCTS[3]					
Sawn softwood (million standards)	10.24	9.21	9.15	9.55	10.03
Sawn hardwood (million cubic meters)	9.07	9.69	8.66	8.85	9.52
Plywood (million cubic meters)	1.09	1.28	1.50	1.88	2.04
Fibreboard (hard and insulating)	0.17	0.72	0.86	1.09	1.25
Wood pulp (chemical)	6.67	5.90	6.45	7.69	8.30
Wood pulp (mechanical)	3.95	3.55	4.09	4.59	4.80
Newsprint	2.80	2.39	2.82	2.99	3.20
Other paper and board	8.29	8.64	10.39	12.13	13.30

[1]Barley, oats and maize.
[2]On a calendar year basis, milk production fell from 91.10 million tons in 1954 to 89.98 million tons in 1955.
[3]Includes Eastern Europe. Figures refer to calendar year, and prewar figures to 1938.

ANNEX TABLE 2 B. WESTERN EUROPE: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Wheat and wheat flour	1.44	0.75	1.02	2.27	3.36
Sugar	0.80	1.28	1.51	1.57	1.70
Citrus fruit	1.18	0.91	1.42	1.25	1.41
Wine	0.53	0.49	0.66	0.77	0.74
Bacon, ham and salted pork	0.27	0.15	0.27	0.27	0.29
Eggs in shell	0.20	0.17	0.23	0.27	0.26
Raisins	0.12	0.08	0.11	0.13	0.05
	Million cubic meters				
Coniferous logs[1]	2.39	1.64	0.76	0.99	1.20
Broad-leaved logs[1]	0.50	0.45	0.50	0.67	0.94
Pulpwood[1]	3.03	3.31	2.43	3.88	5.41
Pitprops[1]	3.16	2.82	1.92	2.28	2.76
Sawn softwood[1]	13.86	10.58	12.61	13.57	14.44
	Million metric tons				
GROSS IMPORTS					
Wheat and wheat flour	14.84	14.35	12.85	12.99	13.51
Maize	8.46	4.03	4.24	4.27	4.47
Rice (milled)	1.27	0.38	0.36	0.40	0.59
Sugar	3.43	4.20	5.26	3.75	3.94
Vegetable oils and oilseeds (oil equivalent)	2.76	2.34	2.43	2.70	2.75
Oranges	1.28	1.32	1.90	1.92	1.99
Beef, fresh	0.68	0.39	0.39	0.36	0.47
Mutton	0.35	0.36	0.37	0.34	0.37
Canned meat	0.08	0.19	0.19	0.20	0.21
Butter	0.57	0.39	0.40	0.32	0.38
Cheese	0.23	0.27	0.28	0.28	0.28
Rubber (natural)	0.36	0.59	0.66	0.71	0.81
Cotton (lint)	1.75	1.40	1.43	1.58	1.41
Jute	0.58	0.38	0.57	0.48	0.53
Wool (clean basis)	0.50	0.45	0.53	0.47	0.51
Coffee	0.69	0.48	0.59	0.61	0.67
Tea	0.26	0.23	0.25	0.28	0.26
Cocoa	0.36	0.33	0.39	0.40	0.40
Tobacco	0.37	0.34	0.38	0.39	0.40
Wine	1.68	1.39	1.59	2.00	2.37

[1]Includes Eastern Europe.

ANNEX TABLE 3 A. U.S.S.R. : PRODUCTION OF SELECTED COMMODITIES

YEAR	Cereals	Sunflower seed	Sugar beet	Cotton (raw)	Flax (fiber)
	Million metric tons				
1950	100	2.8	21.4	3.38	0.72
1951	97	2.7	24.4	3.55	0.55
1952	113	3.4	22.9	3.58	0.60
1953	101	4.1	23.8	3.68	0.46
1954	105	3.0	20.3	3.99	0.61
1955	129	5.8	31.4	3.68	1.07
1955 (Target)	(145)	(4.3)	(35.8)	(5.28)	(1.04)
1960 (Target)	(180)	(8.9)	(48.4)	(5.74)	(1.44)

Note. These figures refer to harvested crop, which is estimated to be 80 percent of the biological yield for cereals and 90 percent for other crops. They are derived from percentage figures based on 1950.

ANNEX TABLE 3 B. U.S.S.R. : LIVESTOCK NUMBERS

YEAR	Total Cattle	Cows	Pigs	Sheep
	Million head on 1 October			
1953	63.0	26.0	47.6	114.9
1954	64.9	27.5	51.1	117.5
1955	67.0	29.2	52.1	124.9

ANNEX TABLE 3 C. U.S.S.R., EASTERN EUROPE AND CHINA : CEREAL PRODUCTION

YEAR	U.S.S.R.[1]		Eastern Europe	China[4]
	Biological Yield[2]	Harvested Crop[3]		
	Million metric tons			
1950	124	100	...	...
1951	121	97	...	...
1952	131	113	33	164
1953	...	101	37	165
1954	...	105	37	170
1955	...	129	45	180

[1]Includes peas.
[2]Official figures of biological yield.
[3]Estimates of harvested crop (see Note to Annex Table 3A).
[4]Includes peas, potatoes and groundnuts.

ANNEX TABLE 3 D. U.S.S.R. : PRODUCTION AND EXPORTS OF FORESTRY PRODUCTS

COMMODITY	1953	1954	1955
	Million metric tons		
PRODUCTION			
Sawn softwood (million standards)	12.08	12.55	[1]13.00
Sawn hardwood (million cubic meters)	9.96	10.35	[1]10.50
Plywood (million cubic meters)	0.95	1.02	[1]1.07
Fibreboard	[1]0.14	[1]0.16	[1]0.18
Wood pulp (chemical)	[1]1.10	[1]1.20	[1]1.30
Wood pulp (mechanical)	0.70	[1]0.75	[1]0.80
Newsprint	[1]0.45	[1]0.47	[1]0.48
Other paper and board	[1]1.70	[1]1.89	[2]2.10
	Million cubic meters		
EXPORTS			
Pitprops[2]	0.40	0.59	0.73
Sawn softwood[2]	1.14	1.45	1.83
Plywood	0.05	0.06	[1]0.08

[1]FAO estimate.
[2]Exports to countries of Western Europe only.

ANNEX TABLE 4 A. NORTH AMERICA : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	..... *Million metric tons*				
Wheat	[1]33.80	44.38	48.54	35.21	38.98
Maize	[1]65.60	82.07	81.62	77.03	81.70
Rice (paddy)	0.96	1.92	2.39	2.91	2.42
Beef and veal	4.08	5.21	6.83	7.21	7.49
Pigmeat	3.59	5.36	4.97	4.94	5.42
Milk	54.63	59.58	62.17	63.17	63.96
Eggs	2.42	3.86	4.13	4.35	4.48
Soybeans	1.17	7.35	7.43	9.46	10.26
Groundnuts	0.54	0.84	0.72	0.47	0.79
Cottonseed	4.93	5.28	6.12	5.17	5.50
Tobacco	0.62	1.02	1.00	1.10	1.09
Cotton (lint)	2.76	3.09	3.57	2.97	3.18
Index of all farm products	100	138	148	146	153
FOREST PRODUCTS[2]					
Sawn softwood (million standards)	11.86	18.28	19.26	18.50	20.02
Sawn hardwood (million cubic meters)	12.08	18.50	20.65	20.11	18.66
Plywood (million cubic meters)	0.82	3.15	4.93	5.02	6.11
Fibreboard (hard and insulating)	0.64	1.23	1.42	1.53	1.70
Wood pulp (chemical)	5.20	13.25	16.06	16.99	19.18
Wood pulp (mechanical)	3.44	7.25	7.82	8.14	8.60
Newsprint	3.38	5.74	6.17	6.51	7.02
Other paper and board	10.05	21.12	23.30	23.20	25.69

[1]1937-41 average. Average production for 1934-38 was abnormally low owing to the effects of droughts in 1934 and 1936.

[2]Figures refer to calendar year, and prewar figures to 1938.

ANNEX TABLE 4 B. NORTH AMERICA: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Wheat and wheat flour	6.03	18.38	16.68	13.11	13.49
Maize	0.80	2.31	3.37	1.96	2.78
Rice (milled equivalent)	0.07	0.54	0.70	0.57	0.51
Sugar	0.08	0.10	0.07	0.01	0.07
Vegetable oils and oilseeds (oil equivalent)	0.02	0.36	0.30	0.58	0.51
Oranges	0.15	0.23	0.37	0.33	0.30
Tobacco	0.20	0.22	0.25	0.22	0.27
Cotton (lint)	1.29	1.05	0.65	0.94	0.56
	Million cubic meters				
Coniferous logs	...	0.33	0.49	0.60	0.56
Broad-leaved logs	...	0.23	0.24	0.25	0.20
Pulpwood	...	5.68	4.49	4.64	4.85
Sawn softwood	...	8.42	9.28	11.15	12.56
	Million metric tons				
GROSS IMPORTS					
Sugar[1]	4.02	4.76	5.02	4.90	5.13
Vegetable oils and oilseeds (oil equivalent)	0.77	0.44	0.39	0.46	0.47
Citrus fruit[2]	0.11	0.19	0.23	0.21	0.20
Coffee	0.81	1.27	1.31	1.07	1.23
Tea	0.06	0.06	0.07	0.07	0.07
Cocoa	0.26	0.29	0.27	0.25	0.24
Wool (clean basis)	0.07	0.19	0.14	0.10	0.12
Jute	0.07	0.08	0.10	0.04	0.05
Sisal	0.15	0.19	0.18	0.17	0.18
Rubber (natural)	0.52	0.80	0.70	0.65	0.65

[1]Excluding imports from U.S. Territories.
[2]Lemons and oranges only.

ANNEX TABLE 5 A. LATIN AMERICA: PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Maize	18.00	15.12	18.55	17.40	21.00
Wheat	8.62	7.96	9.78	11.74	8.82
Sugar (centrifugal)	6.89	12.32	12.70	12.79	12.84
Coffee	2.11	1.89	2.01	1.95	2.22
Meat[1]	5.02	6.06	6.05	6.22	6.40
Index of all farm products	100	121	131	136	138

[1]Beef and veal, pigmeat, mutton and lamb.

ANNEX TABLE 5 B. LATIN AMERICA: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Wheat and wheat flour	3.45	2.00	2.62	3.38	4.13
Maize	6.61	1.20	1.13	2.24	0.52
Rice (milled equivalent)	0.11	0.25	0.16	0.17	0.20
Sugar	4.85	7.94	8.84	7.51	8.56
Beef	0.51	0.27	0.17	0.17	0.21
Mutton	0.07	0.06	0.06	0.07	0.09
Canned meat	0.12	0.12	0.08	0.10	0.11
Cotton (lint)	0.34	0.39	0.56	0.74	0.42
Wool (clean basis)	0.12	0.12	0.17	0.11	0.10
Coffee	1.40	1.61	1.70	1.35	1.49
Cocoa	0.21	0.18	0.21	0.22	0.20
GROSS IMPORTS					
Wheat and wheat flour	1.67	2.84	3.31	3.52	3.70
Rice (milled equivalent)	0.39	0.50	0.48	0.26	0.28
Sugar	0.24	0.35	0.40	0.41	0.42
Potatoes	0.18	0.24	0.22	0.21	0.16

ANNEX TABLE 6 A. OCEANIA : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Wheat	4.38	5.30	5.52	4.70	5.40
Sugar (centrifugal)	0.94	1.04	1.47	1.48	1.36
Meat[1]	1.42	1.58	1.74	1.79	1.86
Milk (total)	[2]10.13	10.53	10.58	11.32	11.50
Wool (clean basis)	0.32	0.41	0.44	0.47	0.50
Index of all farm products	100	113	123	125	132

[1]Beef and veal, pigmeat, mutton and lamb.
[2]Australia, 1938/39.

ANNEX TABLE 6 B. OCEANIA : EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Wheat and wheat flour	2.79	3.10	2.69	1.94	2.45
Sugar	0.56	0.47	0.92	0.80	0.80
Beef	0.16	0.13	0.20	0.18	0.24
Mutton and lamb	0.27	0.30	0.32	0.34	0.30
Butter	0.24	0.21	0.20	0.18	0.23
Cheese	0.10	0.12	0.13	0.12	0.12
Copra	0.21	0.18	0.19	0.21	0.21
Wool (clean basis)	0.29	0.43	0.44	0.41	0.47
GROSS IMPORTS					
Wheat and wheat flour	0.06	0.21	0.25	0.27	0.36
Sugar	0.08	0.10	0.10	0.13	0.13
Rubber (natural)	0.01	0.04	0.04	0.06	0.06

ANNEX TABLE 7 A. FAR EAST (EXCLUDING MAINLAND CHINA): PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Rice (milled equivalent)	64.08	65.76	75.21	70.31	75.24
Wheat	12.13	11.35	11.50	13.51	13.58
Total cereals	102.65	101.15	117.88	116.24	118.81
Sugar (centrifugal and crude, raw basis)	6.77	5.76	6.69	7.59	7.62
Starchy roots	21.63	27.03	29.99	31.19	31.87
Pulses	9.31	10.00	10.40	12.16	12.26
Oilseeds (oil equivalent)	3.88	4.06	4.57	4.97	4.86
Tea	0.45	0.53	0.57	0.62	0.63
Tobacco	0.79	0.61	0.68	0.77	0.78
Cotton (lint)	1.09	0.89	1.14	1.30	1.21
Jute	1.53	1.91	1.35	1.42	2.10
Rubber (natural)	0.96	1.65	1.65	1.72	1.74
Index of all farm products	100	104	113	115	119

ANNEX TABLE 7 B. FAR EAST (EXCLUDING MAINLAND CHINA): EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Rice (milled equivalent)	8.92	3.06	2.74	3.23	3.54
Sugar	3.21	0.98	1.93	1.81	1.67
Vegetable oils and oilseeds (oil equivalent)	1.90	1.39	1.26	1.37	1.62
Tea	0.36	0.40	0.45	0.47	0.40
Cotton (lint)	0.68	0.28	0.35	0.19	0.22
Jute	0.78	0.85	0.98	0.79	0.98
Rubber (natural)	1.15	2.01	1.87	2.03	2.15
GROSS IMPORTS					
Rice (milled equivalent)	6.13	3.08	3.31	3.57	2.96
Wheat and wheat flour	1.00	4.89	6.33	3.85	4.26
Total cereals	7.69	9.47	11.20	8.53	8.35
Vegetable oils and oilseeds (oil equivalent)	0.49	0.35	0.36	0.46	0.54
Sugar	1.65	1.14	1.92	2.55	2.29
Cotton (lint)	1.12	0.52	0.68	0.72	0.64
Jute	0.04	0.27	0.27	0.26	0.27
Rubber (natural)	0.25	0.46	0.39	0.45	0.48

ANNEX TABLE 8 A. NEAR EAST : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Wheat	9.64	11.13	15.74	13.30	14.33
Barley	4.75	5.27	7.26	6.42	6.30
Rice (paddy)	1.68	2.06	1.76	2.27	1.95
Total grains[1]	21.79	25.43	32.89	30.46	31.17
Sugar (centrifugal)	0.22	0.43	0.57	0.62	0.71
Citrus fruit	0.79	0.84	1.15	1.12	1.13
Cotton (lint)	0.56	0.66	0.67	0.76	0.80
Tobacco	0.09	0.12	0.16	0.14	0.16
Index of all farm products	100	121	143	141	140

[1]Including rye, oats, maize, millet and sorghum.

ANNEX TABLE 8 B. NEAR EAST : EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Wheat and wheat flour	0.24	0.28	0.84	1.29	0.29
Barley	0.36	0.46	0.84	1.01	0.58
Rice (milled equivalent)	0.15	0.27	0.07	0.12	0.27
Total cereals[1]	0.92	1.11	1.92	2.57	1.23
Citrus fruit	0.30	0.20	0.24	0.38	0.26
Cotton (lint)	0.47	0.47	0.64	0.52	0.61
Tobacco	0.04	0.07	0.08	0.07	0.07
GROSS IMPORTS					
Wheat and wheat flour	0.30	1.39	1.32	0.78	0.95
Total cereals[1]	0.49	1.73	1.56	0.97	1.34
Sugar	0.32	0.47	0.64	0.66	0.66

[1]Including rye, oats, maize, millet and sorghum.

ANNEX TABLE 9 A. AFRICA : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56 (Preliminary)
	Million metric tons				
Wheat	2.50	2.98	3.64	4.09	3.58
Barley	2.09	2.56	2.98	3.14	2.33
Maize	4.50	6.63	8.00	7.92	7.80
Rice (paddy)	1.68	2.43	2.68	2.70	2.13
Sugar (centrifugal)	0.95	1.36	1.59	1.72	1.86
Groundnuts (oil equivalent)	0.56	0.70	0.84	0.76	0.83
Index of all farm products	100	128	145	147	145

ANNEX TABLE 9 B. AFRICA : EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955 (Preliminary)
	Million metric tons				
GROSS EXPORTS					
Cereals[1]	1.46	1.25	1.28	2.09	2.21
Sugar	0.66	0.71	0.85	1.00	1.05
Groundnuts (oil equivalent)	0.33	0.26	0.30	0.35	0.31
Palm kernels (oil equivalent)	0.31	0.33	0.34	0.35	0.34
Groundnut oil	—	0.08	0.15	0.15	0.14
Palm oil	0.24	0.33	0.37	0.39	0.39
Citrus fruit	0.15	0.41	0.47	0.54	0.64
Cotton (lint)	0.13	0.19	0.23	0.24	0.31
Wool (clean basis)	0.05	0.05	0.06	0.06	0.05
Coffee	0.11	0.26	0.29	0.31	0.37
Cocoa	0.46	0.48	0.52	0.47	0.45
Tobacco	0.03	0.07	0.08	0.09	0.08
GROSS IMPORTS					
Cereals[1]	0.78	1.09	1.35	1.03	1.15
Sugar	0.37	0.52	0.69	0.80	0.85

[1]Wheat and wheat flour, barley, maize, sorghum, rice, oats.

ANNEX TABLE 10. AVERAGE WORLD IMPORT UNIT VALUES, IN U.S. DOLLARS, MAJOR COMMODITIES

COMMODITY	1947-49	1950/51	1952/53	1954	1955	1954				1955			
						I	II	III	IV	I	II	III	IV
	U.S. dollars per metric ton												
Wheat	107	88	92	77	78	80	80	76	75	79	78	78	77
Wheat flour	146	112	122	114	105	121	119	108	113	106	105	106	105
Barley	89	76	85	62	69	63	59	59	67	73	71	67	65
Maize	89	76	90	72	74	74	75	71	70	77	75	74	69
Rice (milled)	171	139	184	166	136	183	166	157	149	136	136	134	137
Sugar (raw and refined)	125	134	129	122	120	122	123	124	117	120	122	121	118
Apples	146	125	131	156	139	149	197	149	99	166	158	158	94
Bananas[1]	102	103	101	100	100	101	100	107	90	97	103	101	100
Oranges and tangerines	165	129	128	134	129	116	136	166	156	119	123	155	142
Raisins (dried)	282	256	257	235	269	218	218	232	254	246	254	253	293
Copra	232	230	191	196	173	219	208	181	177	183	177	166	166
Palm kernels	161	170	173	156	144	173	171	148	135	147	143	142	143
Soybeans	142	123	127	126	114	121	140	149	117	122	120	113	104
Groundnuts (shelled)	203	213	248	236	214	231	248	236	221	217	216	217	204
Olive oil	958	690	597	[2]528	[2]578	472	521	541	560	541	569	599	613
Coconut oil	359	377	298	312	258	359	314	300	282	293	258	245	242
Palm oil	281	274	244	204	224	194	199	214	209	219	226	223	228
Palm kernel oil	400	383	325	304	268	326	329	280	283	276	280	257	261
Soybean oil	439	371	346	336	303	332	343	348	322	312	295	306	295
Groundnut oil	471	477	453	441	350	452	476	443	408	361	328	355	369
Beef and veal	350	423	439	480	484	479	476	470	493	514	491	469	467
Mutton and lamb	357	320	377	452	521	437	433	445	498	562	487	479	538
Bacon	747	645	718	645	630	647	645	642	647	646	617	628	630
Cheese	725	593	643	637	645	612	618	637	695	610	600	615	758
Butter	979	841	954	978	977	979	974	975	985	957	937	940	1 101
Eggs (in the shell)	803	624	720	628	638	598	504	657	725	564	525	647	780
Oil cake	105	77	86	84	111	83	76	87	90	112	125	107	105
Coffee	613	1 152	1 268	1 581	1 266	1 385	1 723	1 798	1 564	1 439	1 240	1 207	1 200
Cocoa	622	709	743	1 132	906	929	1 216	1 331	1 195	1 038	990	819	736
Tea	1 143	1 055	1 026	1 419	1 541	1 146	1 415	1 401	1 731	1 858	1 499	1 209	1 438
Wine	263	168	167	145	140	149	148	141	143	140	142	135	144
Tobacco (non-manufactured)	1 252	1 228	1 307	1 374	1 386	1 352	1 399	1 359	1 384	1 289	1 390	1 429	1 414
Linseed	244	175	183	129	145	169	149	115	116	145	146	147	143
Linseed oil	558	374	345	189	236	220	192	177	176	205	236	253	254
Cotton (raw)	832	1 073	943	877	854	826	866	890	938	857	914	847	798
Jute (raw)	345	298	236	202	219	209	209	203	189	228	242	213	192
Wool (greasy)	1 005	2 109	1 603	1 660	1 513	1 742	1 624	1 631	1 624	1 574	1 540	1 501	1 413
Rubber (natural)	415	823	643	453	719	394	417	469	542	625	666	716	866

[1]Average export unit values.
[2]Data for 1954 and 1955, excluding imports into Spanish territories from Spain.

ANNEX TABLE 11. ESTIMATED CALORIE AND PROTEIN CONTENT OF NATIONAL AVERAGE FOOD SUPPLIES PER CAPUT

REGION AND COUNTRY	Calories				Total protein				Animal protein			
	Prewar[1]	1951/52-1953/54 annual average	1953/54	1954/55	Prewar[1]	1951/52-1953/54 annual average	1953/54	1954/55	Prewar[1]	1951/52-1953/54 annual average	1953/54	1954/55
	Number per day				*Grams per day*							
EUROPE												
Austria	2 930	2 720	2 775	2 790	87	81	83	83	40	38	40	40
Belgium-Luxembourg	2 815	2 940	2 930	...	84	86	86	...	34	41	41	...
Denmark	3 420	3 270	3 280	3 300	91	91	91	89	57	51	50	49
Finland	3 000	3 120	3 100	...	95	98	96	...	44	51	51	...
France	2 870	2 810	2 795	2 785	97	95	95	96	43	45	48	49
Germany, Western	3 040	2 840	2 905	2 945	85	77	76	77	43	39	40	42
Greece	2 605	2 505	2 520	2 540	84	78	79	80	23	19	21	21
Ireland, Republic of[2]	3 400	3 510	3 545	3 485	99	96	97	96	48	49	50	49
Italy	2 520	2 550	2 595	2 595	82	78	79	80	20	21	22	23
Netherlands	2 840	2 900	2 910	2 925	80	80	81	81	41	41	42	42
Norway	3 210	3 100	3 120	3 140	90	94	90	91	49	53	50	51
Portugal	...	2 410	2 365	...	...	65	65	...	...	21	22	...
Sweden	3 120	3 020	2 980	2 975	95	89	86	87	59	57	55	56
Switzerland	3 140	3 120	3 075	3 100	96	94	92	92	54	51	51	51
United Kingdom	3 110	3 090	3 140	3 230	80	85	85	86	44	44	46	47
Yugoslavia	3 025	2 650	2 710	...	95	83	86	...	22	19	20	...
NORTH AMERICA												
Canada	3 015	3 050	3 030	3 120	84	93	94	98	48	58	61	63
United States[2]	3 150	3 100	3 090	3 090	89	90	91	92	50	61	63	63
FAR EAST												
India	1 970	1 720	1 840	...	56	47	50	...	8	6	6	...
Pakistan		2 080	2 190	...		51	53	...		11	11	...
Japan	2 180	[3]2 150	[3]2 165	...	64	58	58	...	10	12	12	...
AFRICA AND NEAR EAST												
Egypt	2 450	2 360	2 390	...	74	69	69	...	9	11	11	...
Rhodesia and Nyasaland, Federation of Southern Rhodesia[2]	...	2 450	2 630	...	...	75	81	...	...	16	16	...
Turkey	2 450	2 620	2 670	...	79	84	86	...	13	14	14	...
Union of South Africa[2]	2 300	2 635	2 650	2 595	68	74	75	75	23	27	29	30
OCEANIA												
Australia	3 305	3 130	3 040	...	103	93	91	...	67	63	64	...
New Zealand[2]	3 260	3 340	3 290	...	100	101	99	...	67	68	66	...
	Prewar[1]	1950	1951	1952	Prewar[1]	1950	1951	1952	Prewar[1]	1950	1951	1952
	Number per day				*Grams per day*							
LATIN AMERICA												
Argentina	2 730	...	3 110	2 800	98	...	98	96	62	...	63	57
Brazil	...	...	2 350	2 355	...	...	59	57	...	...	17	16
Chile	2 240	...	2 340	2 490	69	...	71	77	21	...	24	26
Peru	1 860	...	2 050	2 080	55	...	55	54	13	...	11	12
Uruguay	...	[4]2 890	3 070	2 940	...	[4]91	101	99	...	[4]59	65	67
Venezuela	...	[4]2 160	2 280	...	...	[4]58	59	...	...	[4]23	21	...

[1]Prewar data refer generally to 1934-38, with the following exceptions: 1935-38 for Germany and Greece; 1936-38 for the Netherlands; 1936-39 for Australia; 1935-39 for Argentina, Brazil, Canada, Chile, New Zealand, Union of South Africa, and the United States.

[2]For the postwar period, figures are for calendar years or are annual averages of successive calendar years.

[3]Including unreported production.

[4]1949.

ANNEX TABLE 12. TOTAL ANNUAL CATCH AND LANDINGS OF FISH, CRUSTACEANS, MOLLUSKS, ETC., BY SELECTED COUNTRIES; 1938 AND 1947-55

C — Catch (live weight)
L — Landings (landed weight)
CL — Catch and landings identical

COUNTRY		1938	1947	1948	1949	1950	1951	1952	1953	1954	1955
		Thousand metric tons									
MAJOR PRODUCERS											
Canada (including Newfoundland)	C	837	988	1 053	1 000	1 048	1 013	940	925	1 026	949
	L	760	878	955	899	962	927	849	851	941	865
Japan	CL	3 562	2 206	2 431	2 642	3 086	3 666	4 649	4 577	4 544	4 888
Norway	C	1 153	1 196	1 504	1 297	1 468	1 839	1 815	1 557	2 068	1 868
	L	1 017	1 032	1 318	1 084	1 279	1 669	1 670	1 398	1 905	1 635
United Kingdom	C	1 198	1 172	1 206	1 159	989	1 086	1 105	1 122	1 070	1 100
	L	1 098	1 047	1 098	1 049	926	993	1 038	1 030	980	1 004
United States (including Alaska)	C	2 253	2 283	2 410	2 504	2 590	2 365	2 391	2 438	2 675	2 687
	L	1 930	1 967	2 041	2 172	2 216	2 002	1 950	2 018	2 150	2 087
MEDIUM PRODUCERS											
Angola	CL	26	51	113	131	136	177	154	220	261	290
Brazil	CL	103	140	145	153	153	158	175	161	172	...
China (Taiwan)	CL	90	63	84	80	84	104	122	131	153	181
Chile	C	32	61	65	77	88	94	119	107	144	214
	L	30	60	64	76	87	91	118	107	144	214
Denmark	C	97	206	226	258	251	293	324	343	359	425
	L	89	195	217	245	241	281	312	331	353	418
France	C	530	476	468	474	454	528	488	520	500	523
	L	463	441	422	426	408	482	426	459	445	459
Germany, Western	C	777	...	409	501	552	679	663	730	678	777
	L	714	270	368	459	511	636	621	693	642	734
Iceland	C	274	484	478	408	373	418	402	425	455	480
	L	249	433	414	343	324	371	335	361	384	407
India	CL	...	662	530	570	827	763	752	776	854	864
Italy	CL	181	160	157	179	186	186	215	214	198	...
Korea, South	CL	834	302	285	300	216	265	278	259	249	259
Malaya	CL	...	119	139	162	148	144	136	147	137	137
Morocco[1]	CL	31	51	56	93	123	91	122	128	93	...
Netherlands	C	256	295	294	264	258	294	314	343	339	320
	L	256	256	258	234	230	262	277	311	301	276
Pakistan	CL	...	...	...	...	...	239	243	249	260	271
Peru	CL	5	31	36	45	74	97	107	112	132	170
Philippines	C	81	251	195	238	226	299	318	312	365	389
	L	81	251	195	238	220	296	313	306	344	368
Portugal	C	240	282	275	281	307	307	336	392	406	391
	L	218	230	221	214	229	233	254	293	307	287
Spain	C	[2]409	581	547	571	598	604	612	635	650	763
	L	[2]388	541	504	518	538	547	549	569	578	676
Sweden	C	129	165	194	182	187	183	204	197	193	...
	L	124	156	184	173	176	173	194	187	184	190
Thailand	CL	161	151	161	154	178	187	192	205	252	...
Turkey	CL	76	...	...	...	...	110	100	103	119	112
Union of South Africa (including S. W. Africa)	C	68	98	145	159	249	481	652	644	625	598
	L	59	88	124	143	223	458	629	620	601	572

[1]Data refer to former French Protectorate. — [2]1934 data.

ANNEX TABLE 12 (*concluded*). TOTAL ANNUAL CATCH AND LANDINGS OF FISH, CRUSTACEANS, MOLLUSKS, ETC., BY SELECTED COUNTRIES ; 1938 AND 1947-55

C – Catch (live weight)
L – Landings (landed weight)
CL – Catch and landings identical

COUNTRY		1938	1947	1948	1949	1950	1951	1952	1953	1954	1955
		Thousand metric tons									
SELECTED SMALLER PRODUCERS											
Argentina	CL	55	65	71	65	58	78	79	77	78	79
Australia	CL	34	38	39	35	33	38	46	52	54	...
Belgian Congo	CL	1	14	18	25	43	37	49	67	66	...
Belgium	C	43	81	71	68	59	57	71	74	72	80
	L	41	81	66	63	54	52	65	69	66	73
Ceylon	CL	...	...	24	36	43	37	26	26	30	31
Egypt	CL	38	47	43	55	44	50	54	52	57	63
Faeroes	CL	63	97	92	100	98	93	87	89	89	...
Finland	CL	44	46	46	66	66	66	58	62	66	63
Greece	CL	25	22	34	35	52	43	43	46	53	60
Hong Kong	C	...	...	...	...	...	35	40	36	...	...
	L	...	14	22	27	31	31	35	32	...	...
Ireland	C	13	22	26	18	17	17	19	19	22	24
	L	12	20	25	16	16	16	18	18	20	23
Mexico	CL	17	54	68	68	74	75	58	67	...	...
Morocco[3]	CL	...	11	11	10	9	9	11	11	...	...
New Zealand	C	27	34	36	37	35	35	36	37	37	39
	L	25	31	33	34	32	32	32	34	34	36
Poland	CL	13	40	48	49	66	72	...	89	100	107
Tunisia	CL	10	10	12	11	12	15	13	12	...	...
Uganda	CL	...	9	11	12	15	20	23	23	24	25
Venezuela	CL	22	76	92	75	78	75	...	...	...	...
Yugoslavia	CL	17	11	21	27	26	25	24	26	23	23

[3]Data refer to former Spanish Protectorate.

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