THE STATE OF

Food and Agriculture

A SURVEY OF

World Conditions and Prospects

1949

Washington, D.C., U.S.A.
October 1949

SUPPLIES • APPROVISION
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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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APPENDICES

BASIC ISSUES

IN THIS, MY SECOND REPORT on the State of Food and Agriculture, an attempt is made to appraise the current situation against the background of longer-term trends and to focus attention on a very few broad issues which will require consideration and action by governments.

We are now about to enter the fifth agricultural season since the termination of hostilities. Looking back over the postwar years, it appears that the 1948 harvests in the Northern Hemisphere have marked a definite turning point which brought to an end the period of acute shortage of foodstuffs and agricultural raw materials available for export. The 1949 harvest in this hemisphere is likely to be slightly smaller than that of 1948 but will not cause a return of shortages.

Looking back over the past ten years, it is apparent that World War II caused more serious and more widespread damage to agriculture than World War I. There were serious setbacks throughout Europe, in the European regions of the U.S.S.R., and in large areas of the Far East. As in World War I, Canada, Cuba, the United States, and some other countries greatly expanded agricultural production. Until late in 1948 these countries were repeatedly urged to produce more and more for export; they introduced special measures to stimulate output and to restrict internal consumption. These appeals are no longer made. Agriculture in war damaged areas, notably Europe and the U.S.S.R., is recovering rapidly. Deficit countries, even those receiving United States foreign aid, do not have dollars enough to buy as much of certain commodities as the hard-currency countries are offering for export.

Looking back fifty years over the first half of the twentieth century, the trends are still more instructive. There have been two major wars and the world's worst economic depression. Much energy has been wasted, much wealth has been destroyed. Yet, in the more advanced countries, containing about one-quarter of the world's population, the individual consumer can buy far more than his father or mother could buy in 1900; there have been great technical developments both in manufacturing and in farming. Consumers have diversified their diets and agriculture has responded to this demand. The output of sugar, fats, fish, livestock products, fruits and vegetables, has been enormously expanded, partly in the temperate zone and partly in tropical and subtropical regions.

Three-quarters of the world's population has been little affected by these great changes. People in the majority of underdeveloped countries live as poorly today as their parents and grandparents lived. In a few of these countries, it is true, there has been some improvement in the food supply; the consumption of sugar appears to have increased most. But there is no evidence that the gap in living standards between the rich and poor countries is being narrowed. The contrary is true, because once a country has attained a certain level of wealth, it accumulates further capital without much effort and cumulatively adds to its prosperity.

Governments must now face squarely the issue of poverty and malnutrition. On my recent tour of the Near East and the Far East I saw human misery at first hand. I saw how little food the great majority of these people eat, how inadequate their housing, how exhausting their daily toil. I saw how easily a start could be made toward bettering material conditions in these areas and how comparatively simple changes could lighten the toil and improve the food supply.

Progress is, of course, being made. Since the end of the war, agricultural production in the underdeveloped countries has been recovering and expanding. In the Far East it is nearly back to prewar and in other underdeveloped areas well above the prewar level, but in neither has it increased as rapidly as the population during the past ten years. In the few cases where per caput food consumption has increased, the increase has been brought about by a reduction of exports.

If living standards are to be raised, food supplies must increase more rapidly than population. Since population growth varies, according to country, from 1 percent to 2.5 percent per annum, food supplies need to be increased by at least 2 to 3.5 percent per annum. FAO has no evidence that such an expansion is being planned, and this is not surprising in view of the pitifully inadequate resources in technical knowledge and material equipment of the underdeveloped countries. In changing this situation the Technical Assistance Program, proposed by President Truman and accepted in principle by the Economic and Social Council of the United Nations, may play a decisive part. Under this program technical knowledge can be purveyed to underdeveloped countries on a scale heretofore impossible. Moreover, the way can be paved for the introduction into these countries of the equipment needed for more modern agriculture and for a diversity of industries.

> Many a farmer in the underdeveloped countries has nothing to work with but a small patch of soil, a wooden plow, one or two hoes, spades and sickles, a small supply of none-too-good seed saved from the last harvest, and, if he is lucky, a part interest in the ownership of a water-buffalo. This is a far cry from the farmer in the highly developed country who has a tractor, truck, and other complex and efficient machines, barn and workshops, fertilizers, insecticides, seed of the best known varieties of plants, good breeds of livestock, news and market reports by radio, and a research station and extension service not many miles away.

The one cannot catch up with the other quickly; it will take many years of step-by-step progress. Yet great advances in production can be made by comparatively elementary improvements—better hand tools, better-bred seed, the use of crop rotation, a little fertilizer if possible, some insecticide and a hand duster, means of reducing the worst animal disease ravages, maybe a simple pump for irrigation. And most important of all, sound advice and assistance from an extension worker or someone else near at hand who knows about the practical application of modern developments in agricultural science.

In many cases, such improvements as those could increase production 10 or 20 or 50 percent in a relatively short time and so provide more and better food for millions of hungry human beings. They are the first steps. The bigger developments in farm mechanization and other large-scale advances will follow. But some of them, such as projects for irrigation, soil conservation, reforestation, and land settlement will necessarily go along side by side with the elementary improvements.[1]

The 1949 Conference of FAO has been assigned the task of stating how the Technical Assistance Program should be carried forward in food and agriculture. This tool, if rightly used, can begin to narrow the gap between the rich and poor peoples. The amount of money likely to be available seems small compared with the costs of military preparedness. It is small, even when compared to government expenditure on agriculture within a single advanced country such as the United States. But it can pay immeasurable dividends in human well-being.

Big plans must be drawn and set in motion while the more modest program goes along. There are dams to build, irrigation systems to construct, fertilizer plants to erect, railroads to extend. This means foreign investment in economic development to reinforce technical assistance. The low-income countries have had, relative to their needs, only a small share of postwar loans and grants. They should receive a larger share of available funds if their productivity is to be increased. A very rough estimate places their needs of foreign capital over the next few years at about $4,000 million per annum to supplement the $13,000 million which the underdeveloped countries would need to raise themselves. (Of the combined amount, the share going to agriculture would need to be substantially larger than that now envisaged in most governments' plans.)

A flow of international funds on this scale should be entirely feasible, but it will probably require better institutional arrangements relating to private capital and to public international capital. National and international action by governments can accomplish this. Technical assistance, coupled with international investment, will make an invincible combination for overcoming step by step the poverty of the world's 1,600 million disadvantaged people.

The second basic issue governments must face lies in the field of national trade in agricultural products. Before World War II, the movement of goods from country

[1]United Nations, *Technical Assistance for Economic Development*, May 1949, p. 138.

to country was increasingly beset by man-made obstacles, but it is many times more difficult today. The multilateral system has, for the time being, altogether broken down; goods that cannot flow through channels once considered normal now have to flow in other channels or fail to move at all. Many people fear, in my opinion justifiably, the early accumulation of surpluses in some countries while shortages persist in others. It is sometimes argued that international trade problems almost exclusively concern the advanced countries and that FAO should not spend too much time on them. This view cannot be accepted: It is to the advantage of all nations that specialization of function be maintained. More than half the exports of underdeveloped countries are agricultural products; the prices and other conditions under which these products are sold powerfully influence these countries' opportunities for economic development. For these reasons, governments have an immediate and corporate responsibility to take action which will prevent serious log-jams in international trade and will result in an increased volume of goods exchanged.

International trade in farm products, as in other products, has been recovering steadily since the war, but there are signs of trouble ahead. In 1948, because of a dollar shortage, many Latin American countries began to curtail their imports, including some food items, and European countries are now doing the same. While these difficulties persist, North America and other hard-currency areas may have more goods available for export than the rest of the world can afford to buy. Another factor is the avowed intention of all the underdeveloped countries to reduce such food imports as they now have and to increase their agricultural exports. This could not be accomplished easily or quickly, for insofar as it occurs it might create widespread surpluses. The international trade problem therefore has two aspects, one concerning surpluses of dollar goods and the other, perhaps a little less immediate, concerning general surpluses irrespective of dollar difficulties.

Remedies for the dollar shortage are only indirectly the responsibility of FAO. Nevertheless, in proposing action in our own field, we have to reckon with the probability that dollar shortage will persist in some degree for a considerable time. Governments have to ask themselves whether they can take any action regarding trade in agricultural products which would contribute, if only in a modest way, toward alleviating this problem. It should be possible to build some form of bridge between the dollar and non-dollar world, over which certain quantities of farm products could move, additional to those moving under existing international arrangements. The United States, faced with a shrinking demand for its exports, could feasibly, though at great expense, reorient its agriculture and avoid producing any substantial quantities for export at all. Neighboring countries, much more dependent on agricultural exports, would find it harder to do the same. But easy or hard, I would not willingly countenance such policies of restriction, often politely termed "readjustment," except as a last resort after we have all made strenuous efforts to get food moving and keep it moving across the frontiers.

There remains the problem of the surpluses which would occur even in a world of convertible currencies. They may be temporary, because of a dip in demand during a business recession. They may be permanent, as when a new product encroaches on the market of an older product—as synthetic on natural rubber or nylon on silk. They may arise because production has, for some reason, shifted from one part of the world to another. They may also arise because more countries plan to export than to import agricultural products. To deal with these questions I have made recommendations in my report on world commodity problems.

Surplus disposal arrangements will not obviate the need for reorientation of production. It would be folly to insist on producing more and more of a particular product when so many peoples will not have enough purchasing power—until their productivity increases—to buy what is produced. The world's resources of manpower and equipment should be used for building up people's productivity and purchasing power and concurrently for producing what people really want to buy with the money they now have. We must therefore be prepared to face—although it has not happened for any one product—a set of circumstances in which the world as a whole would benefit by resources being transferred from one line of production to another.

In making such adjustments, two principles should be observed:

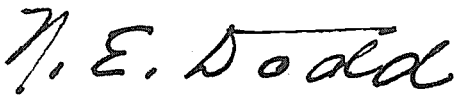
First, the burden of reorientation should be equitably distributed among all countries concerned with the commodity in question. It may, in many cases, be necessary to establish an intergovernmental commodity agreement as the machinery through which the sharing of burdens can be mutually agreed upon. That is, indeed, a major reason why such agreements were provided for in the Havana Charter of the International Trade Organization. As soon as serious surpluses of a more permanent character threaten to develop, interest in the negotiation of intergovernmental commodity agreements is likely to revive.

Second, countries which, in the interests of the world economy, have to undertake some reorientation of production—and this includes many underdeveloped countries where it may be technically quite difficult—have, as I see it, a right to international assistance. Under the Technical Assistance Program it would be proper to assist countries in diversifying their agriculture. Suppose that one of the smaller underdeveloped countries relies heavily upon the export of a single commodity; if the market for that commodity were to decline drastically, technical assistance should be mobilized to help the country develop new lines of production, either for the domestic or the foreign market, which would strengthen its economy and add to its prosperity.

Governments, therefore, should resolutely face up to the emerging problem of surpluses. There is no single sovereign remedy but rather a group of remedies. As to surpluses which may be immediately upon us because of dollar shortage, there is specific action which they can take within the food and agriculture field, apart from the wider action which they may take in the sphere of monetary and financial policy. In regard to surpluses of a more general and permanent character, specific action can also

be taken; but, in addition, by making use of intergovernmental commodity agreements and the proposed Technical Assistance Program, productive resources can be redirected with a minimum of hardship and with substantial ultimate benfit to all.

At the end of the war governments solemnly undertook to attack joint problems with joint action. In the four annual sessions of the FAO Conference we have exchanged ideas, discussed issues, and measured the dimensions of many problems. Of the fifth session I ask action. We must make great decisions commensurate with the world's great needs.



Director General

WASHINGTON
September 1949

1. Indicators of the World Situation

SUPPLIES

IN EVERY MAJOR REGION of the world except the United States and Canada the supply of food in 1948/49 is larger than in the previous year. Although improving, it is still below prewar in Europe and the Far East.

The supply of textiles, lumber, and wood pulp shows an increase over the previous year in all regions except North America and the Far East, where textile supplies declined for several reasons. These included a shortage of raw cotton in India, war in China, and Japan's difficulties in exporting textiles for dollars.

World population continues to grow on most continents at an average rate of about 1 percent per annum, but in Latin America at an average rate of more than 2 percent a year. Therefore, when available supplies are calculated on a per caput basis, as is done in Table 2, the situation appears much less satisfactory.

Compared with 1947/48, this last season has shown a notable increase in the per caput supply of both crop and livestock products in Europe and of crop products in Africa and the Near East. But per caput total food supply is still below the prewar level everywhere, except in the Western Hemisphere, and everywhere, except in North America, the consumption of livestock products has fallen more than the consumption of crop products. Food consumption is studied in more detail in Chapter 3.

The per caput textile supply is above the prewar level only in North America and Oceania. The recent fall in North American supplies represents a recession from an exceptionally high level in the previous year. Supplies continue very low in the Far East, largely because of the slow recovery of Japanese exports.

With forest products as with food, only the Western Hemisphere has a higher per caput consumption than prewar. Supplies in the Far East and Europe remain very low and improve slowly.

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[1]All indices for 1948/49 or 1949 in this chapter are tentative and provisional and should be used only as general indicators of the situation. Index numbers for 1947/48 published in the *State of Food and Agriculture, 1948*, have been considerably revised on the basis of the latest information available. The term "available supplies" means production plus imports minus exports and, in the case of foodstuffs, minus seed, waste, and quantities used for industrial purposes. Available supplies of textiles means production plus imports minus exports of fibers, plus imports minus exports of yarn and manufactures, both on a fiber-weight basis. Not enough is known about changes in stocks, except in one or two components of the cereals group, for any allowance to be possible under this item.

TABLE 1.—SUPPLIES OF FOOD, TEXTILES, AND FOREST PRODUCTS AVAILABLE FOR CONSUMPTION IN 1947/48 AND 1948/49

Area	Food[1]		Textiles[2]		Forest products[3]	
	1947/48[4]	1948/49[5]	1947/48[4]	1948/49	1947/48	1948/49
	(*1934-38 = 100*)				(*1937 = 100*)	
Far East	93	96	71	68	68	67
Europe (excl. U.S.S.R.)	82	89	91	95	70	71
United States and Canada	[6]124	[6]124	165	155	144	141
Latin America	123	127	117	120	136	139
Australia and New Zealand	[7]110	[7]111	108	134	102	109
Africa and Near East	[8]106	[5]116	96	99	102	103
WORLD AVERAGE (excl. U.S.S.R.)	98	102	103	101	105	107

[1]Based on data for 52 countries covering 77 percent of the world's population. For description of methods of calculation of the food index numbers, see Appendix to the *State of Food and Agriculture, 1948*.
[2]Index numbers on tonnage basis; including supplies of cotton, wool, and rayon textiles available for domestic consumption.
[3]Based on total roundwood supplies.
[4]Revised figures in Tables 1-4.
[5]Preliminary figures in Tables 1-4.
[6]Base period is 1935-39 for U.S. and Canada food indices in Tables 1-4.
[7]Base period in Australia is 1936/37-1938/39 and in New Zealand 1935-39 for food indices in Tables 1-4.
[8]Includes only Algeria, Egypt, French Morocco, Madagascar, Tunisia, Turkey, and Union of South Africa for food indices in Tables 1-4.

TABLE 2.—SUPPLIES OF FOOD, TEXTILES, AND FOREST PRODUCTS AVAILABLE PER CAPUT IN 1947/48 AND 1948/49

Area	Food[1]						Textiles[2]		Forest products[3]	
	1947/48[4]			1948/49[5]						
	Total	Crops	Animal products	Total	Crops	Animal products	1947/48[4]	1948/49	1947/48	1948/49
	(*1934-38 = 100*)								(*1937 = 100*)	
Far East	85	87	83	88	90	86	72	69	62	61
Europe (excl. U.S.S.R.)	78	90	68	84	98	72	92	95	68	69
United States and Canada	[6]110	[6]103	[6]115	[6]109	[6]103	[6]113	147	136	128	125
Latin America	100	112	93	102	115	93	97	97	110	109
Australia and New Zealand	[7]97	[7]104	[7]95	[7]97	[7]105	[7]95	100	120	89	96
Africa and Near East	[8]88	[8]87	[8]89	[8]95	[8]99	[8]90	88	88	89	90
WORLD AVERAGE (excl. U.S.S.R.)	89	90	86	92	94	89	94	92	81	83

[1]Based on data for 52 countries covering 77 percent of the world's population. For description of methods of calculation of the food index numbers, see Appendix to the *State of Food and Agriculture, 1948*.
[2]Index numbers on tonnage basis; including supplies of cotton, wool, and rayon textiles available for domestic consumption.
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[8]Includes only Algeria, Egypt, French Morocco, Madagascar, Tunisia, Turkey, and Union of South Africa for food indices in Tables 1-4.

PRODUCTION

Food production showed great improvement in 1948/49 in every region except Australia and New Zealand.[2] Europe, Africa, and North America, on account of their excellent 1948 harvests, showed the biggest advance over the previous season.

The outlook for the 1949 cereal harvest in the United States and Canada suggests a drop of some 10 percent in crop production (estimated as of 1 August) not entirely compensated by expected increases in output of meat, milk, poultry, and eggs in 1949/50. In Europe, the 1949 cereal harvests may average some 5 percent below 1948, good crops in Northern and Eastern Europe being counterbalanced by not such good ones in Western and Southern Europe. Potatoes may be considerably below last year, but sugar outturn may be above. Supplies of livestock products should definitely increase, reflecting the good feed supplies of the past twelve months. In the Far East, fragmentary reports indicate fair to satisfactory crop conditions, with improvements over 1948 in India, Pakistan, and Thailand, but in the Philippines there was some loss of rice production, caused by army worm infestation. In the Southern Hemisphere, winter sowings in Australia and Argentina are believed to be larger than in 1948, but South African sowings have been adversely affected by drought.

Fiber production in 1948/49 showed a big improvement over the previous year except in the Far East, and apart from that region all others now have a larger production than prewar. This expansion is expected to continue in 1949/50 in most regions.

For forest products, there has been no great change during the past year, a slight improvement in Europe being offset by a fall in production in North America. Europe and the Far East are still producing less than before the war.

The volume of food and fiber production is no longer influenced so strongly as formerly by changes in market prices. A large number of governments now guarantee prices to farmers through a variety of procedures, all of which give the farmer a greater degree of security, thereby stimulating or stabilizing production. Some prices are fixed for as much as three or four years ahead, some only for the next season, some vary automatically according to a formula relating them to the prices of other products. As shown in Chapter 2, agricultural prices in a few countries have continued to increase during the past year, in many they are stabilized at a favorable level, while in some they have trended downward.

If governmental programs can stimulate agricultural production, a lack of effective government can have the opposite effect. In the Far East, for example, political disturbances continue to hinder agricultural recovery and progress. In Burma, China, Indo-China, and Indonesia, political and military conflicts have tended to reduce output in many areas to what the farmers need for themselves. They have reduced their marketing to the city or for export, either because transportation has become disrupted or because, as a consequence of inflation, they no longer care to hold money. Other areas where agriculture is similarly affected by political disturbances are the Near East and Greece.

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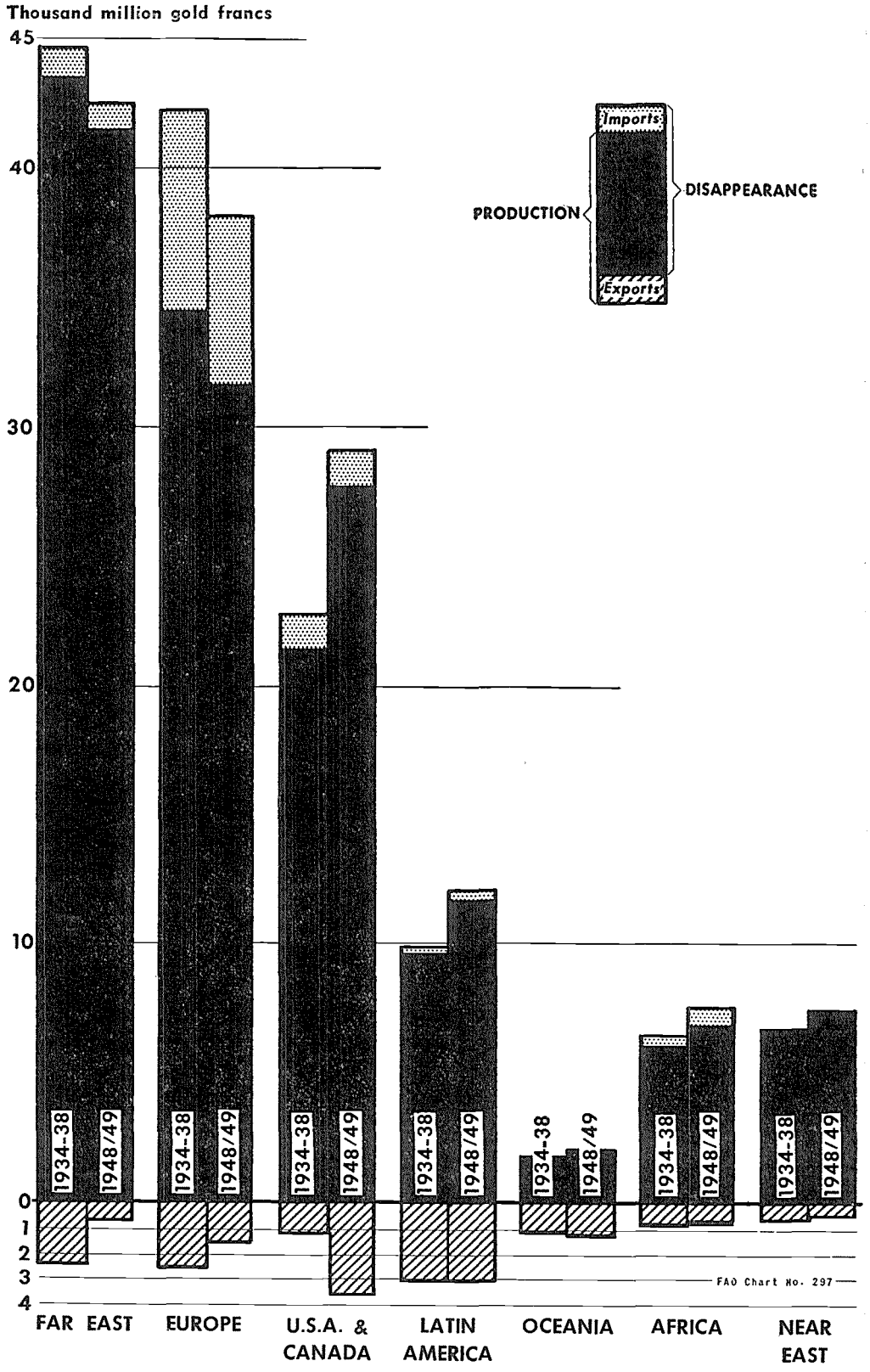
[2]The index number of production includes quantities produced for seed and industrial uses and cannot therefore be compared, even for the whole world (where exports and imports cancel each other), with the index number of available supplies. Since the index number excludes feed (to avoid double counting) it follows that an exceptionally good harvest of feed crops does not show up in the index number until it appears as additional meat, milk, and eggs, which may be one or even two years later. This, for example, will occur with respect to the record United States maize crop of 1948.

Chart 1.—Production, Exports, and Imports of Food by Regions
(Measured in Prewar "World" Prices)



Availability of farm requisites has an important influence upon the level of production, at least in the agriculturally advanced countries. During the last four years suppliers have been expanding output in an endeavor to catch up with a keen demand. Fertilizer production and consumption have surpassed prewar levels almost everywhere and are still rising. The supply of pesticides certainly is more effective in toxicity than before the war. The supply of farm machinery, although still of interest predominantly in North America and Europe, is far above prewar and still rising. For a more detailed discussion of the situation regarding these requisites, see Appendix E.

Chart 1 shows the level of production, exports, and imports in each of the main regions in 1948/49 compared with prewar. It indicates strikingly the overwhelming importance of domestic production compared with international trade in determining consumption levels. In the Far East and Europe, for example, the fall in production rather than any change in the volume of international trade mainly accounts for the fall in consumption. In North America, the increase in production has been sufficient to provide both for a larger consumption and for a larger export. In the remaining three regions consumption levels depend entirely upon the volume of production and exports, since food imports are negligible.

INTERNATIONAL TRADE

Food exports from all regions except Latin America were higher in 1948/49 than in the previous year. Exports from the countries of the Far East and from Europe, principally Eastern Europe, were still very low by comparison with prewar.

Food imports in 1948/49 likewise surpassed those of 1947/48 in all regions except Latin America, where import restrictions were introduced to conserve dwindling reserves of dollars and of gold. Imports of food into Australia, New Zealand, Africa, and the Near East show a large proportionate increase, but in absolute terms the quantities are negligible.

A number of elements in the world trade in foodstuffs remain remarkably constant. For example, Europe's net excess of food imports over food exports remains at almost exactly the prewar level—valued at constant (prewar) prices. Likewise the level of exports of Latin America and of Australia and New Zealand remains roughly unchanged. Meantime, there has been a substantial fall in exports from the Far East

TABLE 3.—VOLUME OF PRODUCTION OF FOOD, FIBERS, AND FOREST PRODUCTS, 1947/48 AND 1948/49

Area	Food[1]		Fibers[2]		Forest products[3]	
	1947/48	1948/49	1947/48	1948/49	1948	1949
	(*1934-38 = 100*)				(*1937 = 100*[4])	
Far East	92	95	69	62	95	94
Europe (excl. U.S.S.R.)	79	89	95	119	69	72
United States and Canada	128	138	105	129	145	139
Latin America	114	118	107	120	191	190
Australia and New Zealand	109	106	106	112	183	184
Africa and Near East	101	116	85	107	158	158
WORLD AVERAGE (excl. U.S.S.R.)	97	104	87	97	111	110

[1]See footnote 1 to Table 1.
[2]Index numbers on tonnage basis; includes cotton, wool (clean basis), raw silk, rayon, nylon, flax, hemp, jute, abaca, sisal, and henequen.
[3]Lumber and wood pulp only. Index numbers constructed by giving a standard of lumber (4.672m³) the same weight as a metric ton of wood pulp.
[4]In many areas production in 1937 was definitely higher than the 1934-38 average. 1937 is used as a base since it is the year for which the most complete data are available.

TABLE 4.—VOLUME OF INTERNATIONAL TRADE IN FOOD, FIBERS, AND FOREST PRODUCTS, 1947/48 AND 1948/49

Area	Food[1]			
	Exports		Imports	
	1947/48	1948/49	1947/48	1948/49
	(*1934-38 = 100*)			
Far East	[2]28	[2]35	61	73
Europe (excl. U.S.S.R.)	40	53	80	85
United States and Canada	274	290	90	99
Latin America	102	102	127	111
Australia and New Zealand	99	109	128	150
Africa	[3]72	[3]89	98	125
Near East	70	78	131	159
WORLD AVERAGE (excl. U.S.S.R.)	89	98	81	87

Area	Fibers[4]				Forest products[5]			
	Exports		Imports		Exports		Imports	
	1947/48	1948/49	1947/48	1948/49	1947	1948	1947	1948
	(*1934-38 = 100*)				(*1937 = 100*)			
Far East	52	35	47	52	4	4	26	20
Europe (excl. U.S.S.R.)	121	190	69	81	50	55	47	50
United States and Canada	44	91	148	140	133	124	119	122
Latin America	118	100	133	183	145	143	104	86
Australia and New Zealand	123	126	219	175	31	35	56	62
Africa and Near East	102	116	340	440	70	70	132	138
WORLD AVERAGE (excl. U.S.S.R.)	73	80	73	81	79	79	71	72

[1]The index number for world exports is unsatisfactory since the prewar figure on which it is based is believed to omit the exports of a number of small territories, the inclusion of which would reduce the indices for the world average in 1947/48 and 1948/49 by some 10 points and make them more comparable with the index numbers of imports. The latter are a more reliable guide to the change in the quantum of international trade in foodstuffs.

[2]Food index numbers also include exports and imports of grains, sugar, and vegetable oils for countries other than those covered by food balance sheets.

[3]Index numbers also include exports and imports of grains, sugar, citrus fruit, and fats and oils for countries other than those covered by food balance sheets.

[4]Index numbers on tonnage basis: Includes wool (clean basis), cotton, raw silk, rayon, jute, abaca, sisal, and henequen.

[5]Lumber and wood pulp only. Index numbers constructed by giving a standard of lumber (4.672m³) the same weight as a metric ton of wood pulp.

and Africa (and the U.S.S.R.), which has been replaced in large part by the expansion of exports from North America.

Fiber exports showed a considerable recovery in 1948/49, especially those of cotton from the United States. Exports from the Far Eastern region fell somewhat, mainly because of decreased shipments of cotton and jute from the subcontinent of India. Fiber imports increased everywhere except in North America and Oceania, the most important quantitative gains being in Europe. Further expansion in imports is expected in Europe, Asia, and Africa.

Forest products exports from North America declined slightly and increased from European countries, the former being caused by a sharp reduction in Europe's imports from North America on account of the dollar shortage. Imports of forest products into North American and European countries rose slightly. In 1949 the export trends of 1948 appear to be continuing, but there is a marked drop in United States purchases from Scandinavia and Canada.

RECENT CHANGES IN UNITED STATES TRADE

Because the special difficulties which have developed in international trade in recent months are largely related to changes in the volume and direction of United States trade and particularly to a fall in imports of certain primary products, a brief summary of the data is given in accompanying tables.

An increase in such items as sugar and coffee counterbalanced the decrease in vegetable oils and cocoa. During this period the total United States import of crude and manufactured foodstuffs amounted in value to $1,024 million, compared with $975 million in the corresponding period of the previous year.

United States imports of all crude materials declined from a value of $1,084 million in the first five months of 1948 to $956 million in the same period of 1949. The chief elements in this decline were wool, mainly from Argentina and Uruguay but also from Australia and New Zealand, and paper products, mainly from Canada and Scandinavia.

Imports from Europe, Africa, and Oceania declined as between the two periods, but the European decline was largely owing to decreases from Spain and the Eastern European countries. United States imports from the ERP countries were higher, as were imports from Asia. Among the ERP countries, the United States took more from Belgium, Netherlands, and Norway but less from the United Kingdom, Sweden, and Italy than in the corresponding period of 1948.

ECA appropriations now represent the major part of United States government foreign aid. Some two-thirds of the authorizations were spent in the United States. During the fifteen months from 3 April 1948 to 1 July 1949, ECA authorized an expenditure of $5,900 million, of which $2,700 million was for food and agricultural items, $2,700 million for industrial goods, and $500 million for freight costs. The principal food and agricultural items are shown in Table 7.

Through this aid the flow of food and agricultural products to Europe has been maintained during a difficult period when a sudden diminution in the supply would have had far-reaching consequences. At the same time, the position of most importing countries not benefiting from U. S. foreign aid has remained difficult. One consequence of the ECA program has been to maintain food export prices at comparatively high levels.

United States exports, which had been diminishing gradually during 1948, rose sharply in the first half of 1949, while imports declined to the lowest level since 1947.

The balance of visible trade was $700 million larger than in the previous six months. The last half of 1948 appears in retrospect as an exceptional period, but many soft-currency countries took it as normal in framing their plans. Since United States government aid is not sufficient to finance a balance of the present magnitude and since other countries have few reserves left which would enable them to cover any substantial part by transfers of gold or other capital, steps must be taken to narrow the gap. Restrictions on imports from the United States will affect sugar, tobacco, cotton, forest products, and, to a lesser extent, wheat.

TABLE 5.—UNITED STATES IMPORTS OF SELECTED FOODSTUFFS AND TOBACCO FOR CONSUMPTION

Item	January - June	
	1948	1949
	(*Million U. S. dollars*)	
Coffee	354	367
Cocoa	87	68
Sugar	156	210
Vegetable oils	130	74
Fish	49	53
Fruits, vegetables, and nuts	115	105
Tobacco	39	37
TOTAL	930	914

SOURCE: U. S. Department of Commerce, *Foreign Commerce Weekly*. U. S. Department of Agriculture, *Foreign Agricultural Trade*.

TABLE 6.—UNITED STATES IMPORTS OF SELECTED CRUDE MATERIALS

Item	January - June	
	1948	1949
	(*Million U. S. dollars*)	
Hides and skins	68	35
Wool	179	97
Jute burlaps	63	56
Paper and paper products	378	332
Crude rubber	143	130
Tin	78	107
Diamonds	27	16
TOTAL	936	773

SOURCE: U. S. Department of Commerce, *Foreign Commerce Weekly*.

TABLE 7.—ECA-AUTHORIZED EXPENDITURES ON SELECTED PRODUCTS: APRIL 1948-JULY 1949

	(*Million U. S. dollars*)
Bread grains	958
Fats and oils	254
Sugar	157
Coarse grains	152
Meat and dairy products	221
Cotton	542
Tobacco	142

SOURCE: ECA Press Release, 13 July 1949.

TABLE 8.—UNITED STATES VISIBLE TRADE, 1948 AND JANUARY-JUNE 1949

	1948		1949
	Jan.-June	July-Dec.	Jan.-June
	(*Million U. S. dollars*)		
Exports (incl. re-exports)	6,544	6,092	6,596
General imports	3,520	3,603	3,388
BALANCE	+3,024	+2,489	+3,208

SOURCE: U. S. Department of Commerce, *Foreign Commerce Weekly*.

TRADE AGREEMENTS

While trade between the dollar area and the non-dollar area has encountered mounting difficulties, trade within the soft-currency area continues to expand. New trade links are being forged each month with the negotiation of more and more trade and payment agreements. During 1949 the list has lengthened rapidly, something like 80 percent of the world's trade in food and agricultural products now being covered by such agreements.

During the year, for example, the United Kingdom has negotiated an agreement with Argentina covering five years and an exchange of goods up to about £80 million per annum each way; it includes 305,000 tons of Argentine meat. The United Kingdom has made an agreement with the U.S.S.R., obtaining 1 million tons of coarse grains and some wheat and timber; an agreement with Yugoslavia to a total of £50 million over a period of five years, including coarse grains, poultry, and timber; an agreement with the Netherlands for four years, which includes a minimum import of 116,000 tons of bacon per annum; one with Denmark for six years, which involves taking 75 percent of Denmark's butter exports up to a maximum of 119,000 metric tons per annum; a five-year agreement with Poland, including 20,000 tons of bacon increasing to 60,000 tons per annum, as well as canned meat and poultry; and has added to the agreements with the British Dominions in which the prices of meat and dairy products have been revised upward.

Denmark has made trade agreements during 1949 with Yugoslavia, the U.S.S.R., Sweden, Finland, Greece, Hungary, Spain, Eastern and Western Germany, France, Portugal, and Norway, covering exports of fats, live animals, agricultural seeds, fish, cheese, eggs, sugar, cereals, fertilizer, and other products. Sweden has made agreements with Yugoslavia, Western Germany, Netherlands, France, and Denmark, under which it is to receive tobacco, maize, sugar, cheese, eggs, copra, palm oil, coffee, etc. France has made agreements with Yugoslavia, Denmark, and Sweden. The U.S.S.R. has negotiated agreements with Italy, Egypt, and the United Kingdom. Italy has new agreements with Greece, Netherlands, Belgium, Luxembourg, Hungary, and the U.S.S.R., under which it exports fruits, live animals, seeds, tomato paste, cheese, processed milk, rice, wine, and hemp, and imports cereals (400,000 tons from the U.S.S.R.), timber, eggs, fish, vegetable oils, flax, wool, tobacco, olive oil, and raisins.

Brazil has negotiated an agreement with Argentina for the import of 900,000 tons of wheat, two-thirds to be delivered in the first year. Brazil also has an agreement with Uruguay to obtain wheat and wheat flour in exchange for maté, bananas, lumber, tobacco, and coffee, and is negotiating agreements with several European countries. India has made an agreement with Western Germany to exchange groundnuts and groundnut oil, hides, skins, jute, and timber for textile machinery and farm machinery.

This illustrative but by no means complete list of agreements negotiated in the past few months indicates the wide range of products and the large number of countries involved. By these complicated and often uneconomic means, exchanges are effected in order to circumvent inconvertible currencies and balance-of-payment difficulties.

2. Prices and Purchasing Power

PRICES AND THE TERMS OF TRADE

A CLEAR PICTURE of current price movements in agricultural products is difficult to put together. There are a few items for which market quotations still exist, mainly in the United States; Table 9 shows recent trends in some of these products.

Prices of most of the staple foodstuffs, several of which fell heavily in the latter half of 1948, have not shown any further appreciable decline in the first half of 1949. However, cocoa and rubber prices did continue to drop, as did those of soybean oil and some other products not mentioned in this brief table.

In most other parts of the world, because trade is carried on under a large number of bilateral agreements, and because of currency difficulties, a single product may be sold at different prices in different markets. For example, in 1948 the United Kingdom was paying $80 per metric ton for wheat c.i.f. Canada, $119 to the United States, $123 to Australia, and $140 to Argentina. For eggs in U.S. cents per dozen, U.K. was paying Australia 44, Canada 56, Denmark 59. For meat and bacon Canada was being paid twice as much as Argentina. For butter and cheese U.K. was paying Denmark 50 percent and 100 percent more, respectively, than Australia and New Zealand.[1] Further details of these prices are given in Appendix A-5.

It is illusory to speak any more of "the price" of a particular product, since there is no free market, or, if there is one, it usually deals in a comparatively small proportion of the quantity traded internationally. Even larger differences can be found between the internal prices for any particular product, owing to the fact that almost all governmens have price-support programs covering a range of agricultural products which they use as an instrument of national policy to encourage or discourage particular branches of production.

Another feature which complicates the price picture is that, during the past ten years, prices of some products have risen much more steeply than others. Thus, comparing 1948 with prewar, the following commodities have increased threefold or fourfold in price: cocoa, coffee, linseed oil, copra, rice, cotton, wool, jute, hard fibers. By contrast, the following have increased a little more or less than twofold: cereals, sugar, meat, dairy products, lard, eggs, rubber, and bananas. Although, for any one product, the ratio of the postwar to the prewar price differs considerably from one market to another, it appears generally that prices of tropical products have increased much more than those of temperate zone products.

[1]United Nations, *Economic Survey of Europe in 1948* (Geneva: 1949).

TABLE 9.—AVERAGE PRICE QUOTATIONS FOR SELECTED FOODSTUFFS AND RAW MATERIALS IN THE UNITED STATES

Commodity	1947	1948		1949					
	Jan.	Jan.	July	Jan.	Feb.	March	Apr.	May	June
	(1938 = 100)								
Wheat—No. 1 Dark Northern Spring (Minneapolis)	234	333	253	247	246	247	246	245	249
Maize — No. 3 Yellow (Chicago)	242	493	389	258	228	238	247	243	243
Sugar—96 deg. centrifugal (New York)	203	200	196	197	194	197	194	201	205
Linseed oil (New York)	402	371	320	316	316	316	316	316	302
Coffee—Santos No. 4 (New York)	345	341	344	347	344	340	330	347	349
Cocoa—Accra (New York)	493	830	847	507	395	352	378	361	356
Cotton — Middling 15/16" average for 10 markets	354	391	378	362	362	363	366	365	364
Wool — Raw Territory 64's, 70's, 80's scoured (Boston)	164	178	210	256	256	256	256	254	254
Timber—Douglas fir, dimension No. 1 Common 2" x 4" x 16"	238	308	341	301	308	310	310	310	307
Rubber—Smoked sheets (New York)	168	149	166	132	127	131	127	123	113

SOURCE: U. S. Department of Commerce, *Survey of Current Business*.

These differences in the price trends of agricultural products have had a great deal of influence on the prosperity of the exporting countries. A country which depends on the export of a product that has risen steeply in price is obviously in a much better position and has better terms of trade than one whose principal exports have risen comparatively little. For example, the export price indices for Brazil, Ecuador, most of Central America and West Africa in 1947/48 were over 300 (1937 = 100), whereas the export price indices of Bolivia, Chile, Cuba, Jamaica, Indonesia, and Malaya, to quote but a few examples, were less than double prewar.

Another factor influencing the terms of trade has been the type of manufactures imported. Here again, there has been considerable variation in the price increases recorded for different products; textiles, copper manufactures, industrial chemicals have risen most of all. The high price of textiles has been particularly adverse to the terms of trade of underdeveloped countries, for most of which textiles are a major item of import. If the price of textiles had risen during the past ten years by no higher percentage than the prices of the exports of the underdeveloped countries, they could have financed the import of 33 percent more capital goods in 1947 than they actually imported.[2] (Since 1947, textiles prices have declined but still are higher relative to prewar than many other manufactures.)

Broadly speaking, countries which exported crude materials were, in 1947 and 1948, in a slightly improved position for the purchase of, for example, United States finished and semifinished manufactures, whereas countries which exported crude foodstuffs (prices of which have risen much more than those of crude materials) had much more favorable terms of trade in relation to United States manufactures. Out of 44 countries studied by the United Nations secretariat, 20 had improved their terms of trade as compared with prewar, for 6 the result was inconclusive, and for 18 the terms of trade had worsened. It should be added that the 20 included some of the

[2]United Nations, *Postwar Price Relations in Trade Between Underdeveloped and Industrialized Countries*, February 1949.

larger countries, such as Argentina and Brazil, whereas the 18 included mainly small countries and small colonial territories. While these calculations are now out of date, they do illustrate the danger of making generalizations about movements in terms of trade. Experience of different countries has been highly diverse.

Taking the underdeveloped countries as a whole, it has been calculated in the UN survey that the terms of trade since the war, although better than just before the war, were nevertheless more unfavorable than in 1913. Indeed, if the ratio were now as favorable to them as it was before World War I, their receipts from exports, which now are calculated to be about $15,000 million, would be of the order of $17,500 to $18,000 million. The long-term deterioration in trade adds up to an amount equivalent to a very substantial volume of foreign investment.

The terms of trade of the United Kingdom, other European countries, and the United States can be seen in Table 10.

TABLE 10.—TERMS OF TRADE (UNIT VALUES OF IMPORTS DIVIDED BY UNIT VALUES OF EXPORTS)

Region	1947	1948	1949
	(*1938 = 100*)		
United Kingdom	116	117	(Jan.-June) 120
Other Europe	89	104	...
Total Europe	102	110	...
	(*1936-38 = 100*)		
United States	112	117	(Jan.-May) 120

SOURCE: United Nations, *Economic Survey of Europe in 1948* (Geneva, 1949). *United States Foreign Commerce Weekly*. *London Economist*, 6 August 1949.

European countries other than the United Kingdom sold their exports for so much higher prices than the United Kingdom that although they also paid higher prices for their imports, their terms of trade were comparatively favorable and became worse than prewar only in the second half of 1948. Since United States export prices of manufactures have changed little while export prices of foodstuffs and raw materials from the United States and other sources have fallen significantly during the first half of 1949, it follows that the terms of trade of European countries importing predominantly food and raw materials may have improved in recent months, while the terms for countries importing predominantly manufactures (machinery and vehicles) may have deteriorated. (No 1949 data are yet available on prices of European exports.)

The United Kingdom has bought its imports at relatively lower prices than other countries, partly because these imports consist in large part of commodities which have gone up relatively little in price and partly because of long-term contracts. Yet, because the prices of U.K.'s exports are low in relation to those of continental Europe, its terms of trade have been much more unfavorable. A slight improvement in May and June 1949 because of a dip in the prices of food imports is believed to be only temporary.

United States terms of trade slowly continue to worsen. Export prices of foodstuffs and raw materials have fallen considerably in recent months while prices of imported raw materials have risen slightly.

Piecing together the story from these various countries, it appears that as compared with prewar the terms of trade have moved against the majority of advanced countries (United States and Europe) and hence in favor of the underdeveloped

countries, though there are great differences within this latter group. The terms of trade should continue favorable to the majority of underdeveloped countries that export food and raw materials principally to Europe because Europe's demand for supplies from soft-currency countries will remain keen. By contrast, the terms may deteriorate somewhat for those whose primary products are marketed principally in the United States.

PRICES OF FARM PRODUCTS AND PURCHASING POWER OF FARM INCOMES

For the world as a whole, the past year marks a change in the general upward trend of farm prices and the rise in farm prosperity which persisted during the war and the first postwar years. In general, this change has taken the form of a leveling off rather than a precipitous decline. Such downward movement as can be noted has occurred mainly in the dollar area and in European countries experiencing deflation. It has been offset by the larger volume of farm produce sold in 1948/49. The position of farmers relative to other sectors of the population remains much more favorable in most countries than before the war.

EUROPE

The favorable harvest of 1948 might have been expected to bring about some decline in the prices of agricultural products. In some countries this has happened. In many others, however, government price-support programs for farm products took forms which guaranteed certain prices, irrespective of the quantities marketed. In a few countries agricultural prices were even adjusted upward in 1948/49 because of increases in production costs. Owing to the good harvest, farmers' gross income in 1948/49 reached a high level even in countries where agricultural prices declined.

During the war, agricultural prices rose much more steeply than those of most manufactured products and this differential was maintained throughout the postwar period of acute food shortage. During the past twelve months the differential has begun to narrow somewhat in certain countries; only in Norway has it widened.

Farm workers' wages remain high. In twelve countries for which information is available, the gap between farm wages and industrial wages has narrowed considerably during and since the war, especially in Norway and Denmark.[3] During the past year agricultural wages have been adjusted upwards in a few countries.

The purchasing power of farm products and farm wages did not vary appreciably in 1948/49 from the previous year. Some decline may be noted in four countries, some increase in two or three, and little material change in the remainder.[4]

European countries may be classified into groups as regards price movements—those with relatively free economies and those with government price supports and controls exercised to a greater or lesser degree.

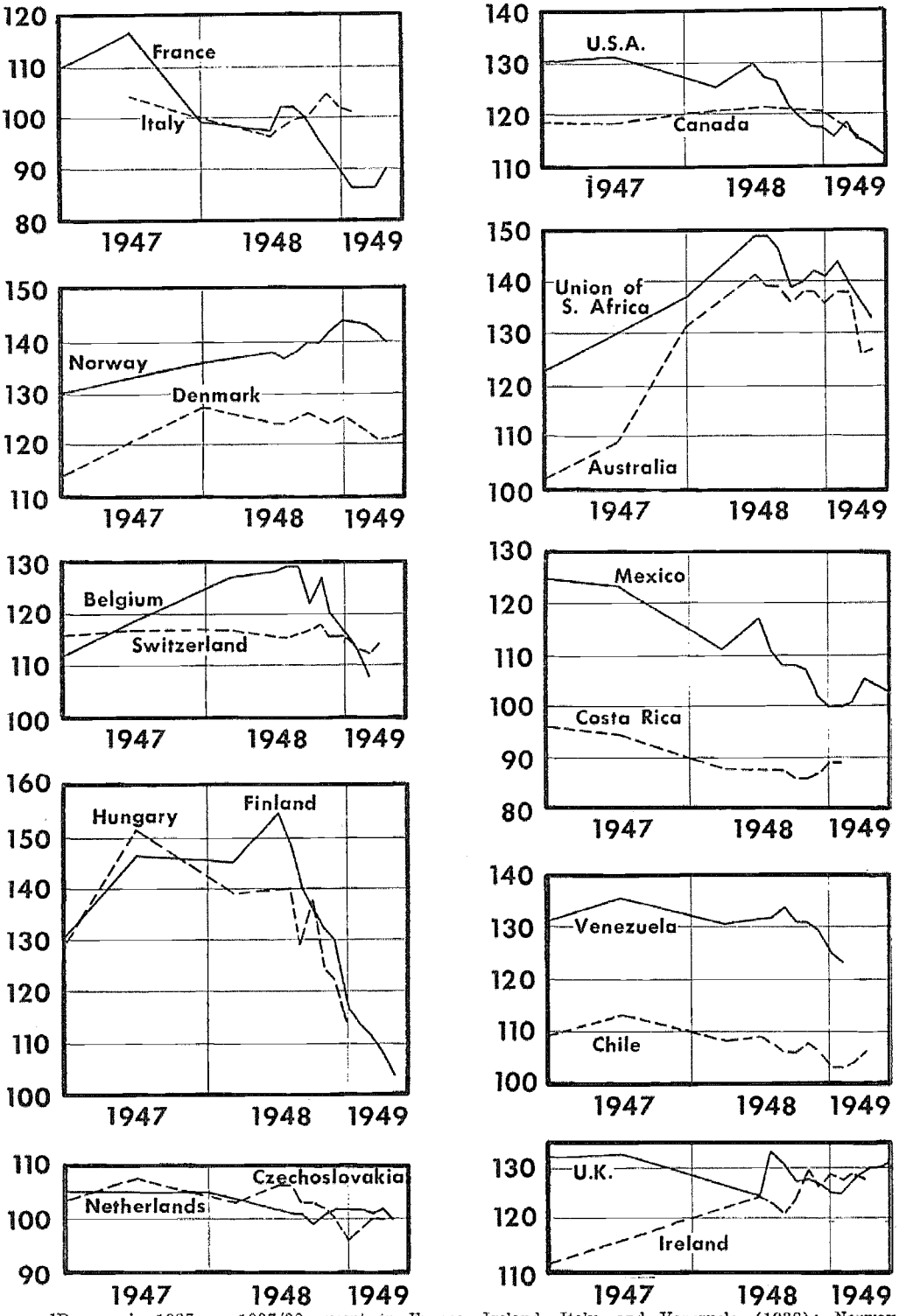
The first group of countries includes Finland, Hungary, Austria, Italy, France, and Belgium, in which an inflationary situation persisted until a year ago. A more ample supply of farm products, following the 1948 harvest, brought about a decline in agricultural prices in all of these countries (more sharply in livestock products than in crops) although in some the price fall was temporarily delayed by derationing and

[3]United Nations, *Economic Survey of Europe in 1948*, page 36.

[4]Statistical data on this subject is scanty. Indices for prices paid by farmers and prices received by farmers exist for only three European countries, prices received by farmers and prices of finished goods are available in another three and, in the rest, only the index of agricultural prices and the index of general wholesale prices.

Chart 2.—Ratio of Prices Received to Prices Paid by Farmers

(Prewar = 100[1])



[1]Prewar is 1937 or 1937/38 except in France, Ireland, Italy, and Venezuela (1938); Norway (1938/39); Mexico and Switzerland (1939). For the following countries indices are available of prices received by farmers: Denmark, Norway, Netherlands, Switzerland, U.K., Canada, U.S.A., Union of South Africa; for the rest, indices of agricultural wholesale prices. For the following countries indices are available of prices paid by farmers: Norway, Switzerland, Canada, and U.S.A.; for the following, indices of finished goods: Belgium, Denmark, Finland, Hungary, Ireland, Netherlands, and U.K.; for the rest, only indices of general wholesale prices.

the consequent sudden release of pent-up demand. In all these countries except Italy and Austria agricultural prices have declined during the past year more than the prices of things farmers buy, so that the purchasing power per unit of farmers' income deteriorated (see Chart 2), but this was compensated wholly or in part by a larger volume of sales.

In Hungary, the Government, after the favorable 1948 harvest, continued to support the prices of certain products, such as oilseeds, sugar, and livestock products. Prices of other items declined steadily during the latter part of 1948 and this movement was accentuated toward the end of the year, when the Government put on the market considerable quantities of food which had previously been reserved for export but which had not found buyers because of high prices.

In Austria a deliberate adjustment of prices, both agricultural and industrial, took place in October 1948, which raised agricultural prices by 35 to 40 percent. They subsequently remained steady until May 1949, when a tendency to decline became apparent.

The countries in which governments actively support agricultural prices include Norway, Sweden, Denmark, Ireland, Netherlands, Switzerland, Portugal, the United Kingdom, and most of eastern Europe. In the majority of these countries agricultural prices have not changed substantially, comparing 1948/49 with the previous year. However, in the United Kingdom and Czechoslovakia, prices were adjusted upward to take account of price rises in other sectors of the economy. In parts of eastern Europe the establishment by governments of the so-called "free market," which has largely replaced the black market, has enabled farmers to obtain for a portion of their output higher prices than those which enter into the computation of the official price index.

There has been little change during the past year in the purchasing power of farm products in this group of countries, except Denmark and Switzerland, where the farmers' position deteriorated slightly, and in the Netherlands and Ireland, where it significantly improved (see Chart 2).

Comparing the 1948/49 purchasing power of farm products with prewar, the farmers' position is better than prewar in most European countries. In Norway, Denmark, the United Kingdom and Ireland, it is 20 to 30 percent better. There are, of course, wide differences between the prosperity of individual farmers within any one country, according to their personal capacities, their geographical location, the combination of products they produce, and the extent to which they depend on hired labor, to mention only a few factors.

UNITED STATES AND CANADA

Prosperity in United States farming received its first check between 1947 and 1948 when the ratio of the index of prices received by farmers to the index of prices paid by farmers fell from 131 to 125. Prices of farm products declined substantially in the last half of 1948 and the first half of 1949, mainly in consequence of the record crop production of 1948 but reflecting to some extent the leveling off in general economic activity. By August 1949, prices received by farmers were 16 percent below the 1948 average, while prices paid by farmers had fallen only 3 percent. The ratio of prices received to prices paid had fallen to 101, compared with 117 in August 1948. In Canada, a similar movement of prices has occurred. However, agricultural prices have declined less steeply there than in the United States (partly because of

TABLE 11.—PRICES OF FARM PRODUCTS[1]
(1937 = 100)

Date	Belgium	Finland[2]	France[3]	Hungary	Austria[5]	Italy[3]	Portugal[6]
1946	330	567	689	[4]506	...	...	223
1947	394	878	1,159	826	295	5,454	219
1948	445	1,215	1,713	875	462	5,492	207
1948 July	452	1,272	1,652	843	442	4,953	209
Aug.	459	1,228	1,809	843	439	5,771	220
Sept.	456	1,184	1,823	797	411	5,873	216
Oct.	428	1,146	1,883	844	552	5,877	216
Nov.	445	1,117	1,889	767	556	5,906	221
Dec.	425	1,103	1,827	759	557	5,997	224
1949 Jan.	410	989	1,740	699	551	5,967	228
Feb.	397	971	1,637	...	553	5,851	219
Mar.	375	941	1,616	...	549	5,754	220
April	367	919	1,583	...	549	5,598	226
May	366	884	1,708	...	543	5,679	224
June	382	913	1,548	...	743	5,467	220

Date	Denmark[7]	Norway[8]	Sweden	Ireland[3]	Netherlands[7]	Switzerland[9]	United Kingdom	Czechoslovakia[2]
1946	180	196	168	196	223	190	202	313
1947	197	224	178	225	260	202	224	322
1948	236	239	189	...	274	211	245	331
1948 July	251	245	189	255	271	209	239	339
Aug.	253	239	188	253	270	210	252	340
Sept.	254	242	188	250	271	212	251	337
Oct.	255	247	188	254	271	213	244	334
Nov.	255	248	188	261	279	215	245	334
Dec.	256	250	186	256	285	210	244	335
1949 Jan.	258	254	186	259	286	209	241	342
Feb.	256	254	186	257	286	207	243	351
Mar.	252	252	186	259	282	205	249	351
April	252	251	188	257	283	205	262	352
May	251	247	188	250	280	205	261	351
June	252	247	...	...	271	205	262	352

Date	Canada	U.S.A.	Australia[10]	South Africa[7]	Chile	Costa Rica[11]	Mexico[12]	Venezuela[3,13]
1946	168	190	130	168	239	186	288	173
1947	178	227	157	198	329	207	297	212
1948	211	234	211	231	377	199	289	228
1948 July	217	246	242	274	382	191	304	236
Aug.	221	239	246	275	384	192	297	230
Sept.	218	237	248	272	386	191	292	230
Oct.	217	226	241	259	391	185	295	224
Nov.	215	221	253	260	397	190	290	221
Dec.	217	219	255	262	390	190	274	214
1949 Jan.	215	219	255	261	388	195	269	206
Feb.	211	211	260	268	392	197	270	199
Mar.	210	217	261	261	399	...	277	202
April	209	212	239	255	408	...	294	206
May	210	209	240	251	415	...	295	...
June	...	206	...	255	...	...	294	...
July	...	203	...	253	...	...	305	...

[1]For the following countries an index of prices received by farmers is available: Denmark, Norway, Netherlands, Switzerland, United Kingdom, Canada, U.S.A., Union of South Africa. For the remainder, the indices of agricultural wholesale prices are given.
[2]Including fodder. [3]1938 = 100. [4]August-December.
[5]Base: Reichsmark prices, March 1938 = 100. Divide by 1.5 to obtain schilling price index.
[6]Lisbon. [7]1 July 1937-30 June 1938 = 100. [8]1 April 1938-31 March 1939 = 100.
[9]August 1939 = 100. [10]Annual figures, 12 months ending 30 June of year stated.
[11]San José. [12]1939 = 100. [13]Caracas.

retroactive payments by the Canadian Wheat Board) and the purchasing power of the farmer's dollar has deteriorated less markedly.

LATIN AMERICA

In Mexico, agricultural prices fluctuate considerably during the season and generally rise considerably in the months just before the harvest. There has been no marked trend in prices of farm products apart from this seasonal movement, but the continued inflation in other sectors of the economy has had the effect of reducing the purchasing power of farmers' incomes. In Costa Rica, agricultural prices have weakened over a long period, whereas general wholesale prices have remained steady, the result being a fall in farmers' purchasing power. There were signs of this trend being reversed from January 1949 onwards.

In Chile, agricultural prices have increased, but not enough to counteract the increase in the prices of other goods; and the position of farmers has worsened. In Venezuela, the position of farmers has likewise worsened; all prices have been falling, but agricultural prices more rapidly than others, especially since January 1949.

Data are lacking for other Latin American countries.

SOUTHERN BRITISH DOMINIONS

In Australia and New Zealand, prices of farm products have continued to rise in the past year, but, prices of other goods have also risen. Consequently, the purchasing power of farm incomes, which had risen steeply during the previous two years, has in 1948/49 slightly declined. In the Union of South Africa, a rise in prices, both of agricultural products and of other goods, seems to have come to an end and the improvement in the relative position of farmers has likewise halted. By May 1949 the ratio between the prices of farm products and general wholesale prices had declined 8 percent from the 1948 average.

For other parts of Africa, for the Far East and the Near East, information on prices is not available.

In 1949/50 agricultural prices may decline a little further where they are free to do so. In Europe and North America the volume of output will again be large—a small decline in crops compensated by an increase in livestock products—so that the level of farmers' prosperity should be reasonably well maintained.

RETAIL PRICES, CONSUMER PURCHASING POWER, AND FOOD SUBSIDIES

Retail Prices

Comparing the most recent data available for 1949 with those of the latter part of 1948 from all countries from which material is available, the trends in retail food prices appear to be as shown in Table 12.

In the Far East and Europe there appears no decisive trend. Prices continue to rise in many countries while falling in many others. However, compared with the position a year earlier, some of those countries in which prices were then rising now have stable or falling prices. In the United States retail food prices have stabilized after an appreciable drop in the last half of 1948. In Canada they began to fall later and are still falling. In most Latin American countries retail food prices continue to

TABLE 12.—RECENT MOVEMENT OF INDICES OF RETAIL FOOD PRICES[1]

Region	Upward	Little change	Downward
Far East	Burma Indo-China Japan	India	Ceylon Hongkong Indonesia Philippines
Europe	Greece Italy Netherlands Poland Spain United Kingdom	Denmark Germany Iceland Norway Portugal Sweden Switzerland	Austria Belgium Finland France Hungary Luxembourg
North America		United States	Canada
Latin America	Argentina Brazil Mexico Paraguay Peru Uruguay	Colombia	Cuba Panama Puerto Rico Venezuela
Oceania	Australia	Fiji	Hawaii
Africa and Near East	N. Rhodesia S. Rhodesia Turkey Union of South Africa	Lebanon	Iraq Tunisia

SOURCE: *United Nations Statistical Bulletin*, August 1949, and national journals.
[1]In many cases the data refer to prices in only one city.

TABLE 13.—PURCHASING POWER OF EARNINGS IN INDUSTRY 1948/49 (OR 1947/48) COMPARED WITH PREWAR

Upward	Little change	Downward
Food		
Australia Chile Czechoslovakia Denmark Finland Hungary Norway U.K. U.S.A.	Ireland	Austria Bulgaria Canada Colombia France Germany Italy Netherlands
Textiles		
Bulgaria Chile Finland Hungary U.K. U.S.A.	Colombia Denmark	Australia Austria Canada Czechoslovakia France Germany Ireland Italy Netherlands Norway

SOURCE: *United Nations Statistical Bulletin.*

move upward, reflecting the persistent inflationary situation of the region. In other continents no clear trend is discernible.

Data on clothing prices are more fragmentary but in most of Europe textile prices have risen more than food prices during and since the war, and in several countries are still rising. In most Western Hemisphere countries prices of clothing and other textiles have risen less than food prices and are not going up further except in Canada; in the United States they are declining.

The Purchasing Power of Earnings

In order to measure the strength of consumer demand for food and clothing it would be desirable to have not only the changes in retail prices but also a picture of consumer incomes. In the last section some indication of farm incomes has been given, but as regards earnings in industry data are fragmentary and are published with a considerable time lag. Moreover, data on earnings do not adequately reflect changes in the money income of the working population, but they are all that is available. Earnings in industry in the first half of 1949 rose in Australia, Canada, Germany, France, Ireland, and Japan. They changed little in Austria, Finland, Italy, Netherlands, and the United States. For no other countries are 1949 figures yet available.

Comparing 1948/49 with 1947/48, the purchasing power of industrial workers appears to have declined in Italy, the Netherlands, and Japan. In Germany, Austria, Canada, and the United States there has been little change.

Table 13 compares purchasing power of industrial earnings in 1948/49 (in some cases 1947/48) with those of prewar in respect of food and textiles.

The position of industrial workers appears to have improved in the United Kingdom, Scandinavia, and most Eastern European countries while deteriorating in Central and Western Europe. In the United States purchasing power has increased and in Canada it has fallen. Unfortunately, figures are available for very few countries in Latin America and for none in Asia or Africa.

Account should also be taken of changes in the level of industrial employment. During the past nine months unemployment has risen in the United States and in most parts of Europe except Scandinavia and Portugal. Reduction in purchasing power caused by unemployment is being increasingly mitigated by unemployment assistance payments, which are more widespread and in many instances more generous than before the war. Where, however, purchasing power is temporarily reduced, the effect in most cases is to reduce clothing and miscellaneous expenditures before significant cuts are made in food purchases.

The general picture for 1949 is that, in spite of some recession in some countries, consumer demand for food and clothing remains strong.

Food Subsidies

The policy of subsidizing food prices, adopted by many countries during the war as a measure to keep down prices of important foodstuffs in short supply, contributed greatly toward a more equal distribution of the food supplies. During the first postwar years, this policy was continued and the amounts paid in subsidies increased and became a heavy burden on national budgets in certain countries. Table 14 shows the

TABLE 14.—FOOD SUBSIDIES IN SELECTED COUNTRIES, 1946-49[1]

Country	Millions of national currency	Percent of government outlay	Percent of total food consumption at current prices	U.S. dollars per person
Denmark				
1947	201	6.0	5.5	10.2
1948	322	9.5	8.7	16.0
1949	253	7.4	6.6	12.5
Netherlands				
1947	681	27.8	7.2	26.7
1948	602	24.8	6.2	23.2
1949	232	...	2.3	
Norway				8.8
1946/47	448	15.7	20.4	29.1
1947/48	658	25.1	30.2	42.7
United Kingdom				
1946/47	314	...	15.2	25.7
1947/48	358	11.3	17.2	29.1
1948/49	400	10.8	18.0	32.3

[1]In most cases shown it is not possible to separate exactly the direct consumer subsidies and producer subsidies. The figures include payments to producers of end food products (not feedstuffs and farm requisites) which indirectly work to the same effect of keeping down the prices paid by consumers. In some instances, transportation subsidies are paid for the purpose of equilibrating prices throughout the country.

amount of food subsidies paid and the ratio of these subsidies to total food consumption at current prices and government outlay in some European countries for the last three years. The burden on national budgets was heaviest in the Netherlands and Norway. Translated into U.S. dollars per person the subsidies were highest in Norway and the United Kingdom.

Some countries, such as Denmark and the Netherlands, have cut their subsidies during the last two years. In particular, many direct retail price subsidies have been abolished or reduced, but production payments to farmers are being continued in many cases. The rise in food prices caused by the dropping of subsidies was to a certain extent offset by a decline in black-market prices; but in certain countries it was found necessary to pay special bonuses to low-income groups. In the Netherlands, for example, where in the autumn of 1948 food subsidies were reduced by more than 50 percent, employers granted to workers with earnings below a certain minimum a cost-of-living bonus corresponding to the rise in their cost of living through the cut in subsidies. In Italy a bread and *pasta* bonus paid to low-income groups is equivalent to the increase in the cost of six kilograms of bread and two kilograms of *pasta* per month, caused by the abolition of the subsidy for these staple foodstuffs. Other countries chose to relieve the burden by splitting the market for certain commodities; Switzerland, for instance, is subsidizing the price of dark bread which is 30 percent less than the price of nonsubsidized white bread.

In Australia and New Zealand, the increase in wages and earnings during the postwar period made the abolition of direct food subsidies possible, while subsidies to farmers are continued. Canada completely discontinued food subsidies in 1947.

Little information is available on subsidies for the other regions of the world. Rice and cereal importing countries in the Far East subsidize the prices of these staple foodstuffs. In 1948 the Indian Government paid a subsidy of £12.5 per ton on 300,000 metric tons of high-cost imported rice. Japan discontinued all direct food subsidies in October 1947. In the Union of South Africa some reduction in food subsidies was made in the first half of 1949.

3. Consumption and Nutritional Levels

INFORMATION ON FOOD CONSUMPTION given in *The State of Food and Agriculture, 1948* has been brought up to date for as many countries as possible, and one or two countries have been added. In addition to the usual reservations concerning such estimates, it must be emphasized that the 1948/49 figures are necessarily provisional, since the full information is not yet on hand. In examining the figures the following points should also be borne in mind:

(1) Food balance sheets are supply estimates expressed on an average per caput basis and therefore do not give any indication of the differences in consumption levels of different groups within a country. The real consumption picture is influenced by economic factors and food habits, and sometimes by food management measures such as rationing and special feeding programs.

(2) Certain commodities of relatively secondary importance in international trade, and even in internal trade, for which national statistics are most likely to be incomplete, such as vegetables and fruits, are most important from the nutritional standpoint as a source of both vitamins and minerals.

(3) "Enrichment" policies, culinary practices, etc., influence the nutritional situation in any given country, but are obviously not reflected in food balance sheets.

(4) Finally, extraneous factors such as climate, mode of living and activity, prevent the use of a uniform yardstick in evaluating the adequacy of a given ration on a comparative basis.

This does not, however, minimize the importance of the large differences in available calories and the even greater differences in the amount of animal protein available per person in the countries shown in Table 15.[1] Data available on the total amount of proteins, and particularly of animal proteins, are important in themselves and are indicative of other nutrients. An increase in the supply of animal protein is generally accompanied by an increase in vitamins of the B group and in minerals such as iron.

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[1]FAO is attempting to evolve a rational method of computing optimal caloric allowance, taking into account such factors as climate, mode of living, activity, age distribution, etc. These problems were considered in detail by a committee of experts that met in Washington in September 1949.

TABLE 15.—CHANGES IN AVERAGE CALORIE AND PROTEIN VALUE OF THE AVAILABLE FOOD SUPPLIES, 1947/48 AND 1948/49

Country	Calories		Total protein		Animal protein	
	1947/48	1948/49	1947/48	1948/49	1947/48	1948/49
	(*Per person per day*)		(*Grams per person per day*)		(*Grams per person per day*)	
FAR EAST						
Burma	1,986	1,877	67.6	65.2	26.5	26.4
Ceylon	1,977	1,918	55.9	51.5	14.7	13.5
China (22 provinces)	2,115	...	65.7	...	4.5	...
India and Pakistan	1,685	[1]1,570	47.7	[1]43.0	7.6	[1]4.0
Indo-China	2,039	...	47.2	...	4.7	4.7
Japan	[2]1,670	[2]1,795	50.1	53.6	7.8	10.9
Java and Madura	1,840	...	44.4	...	3.2	...
Philippines	1,770	...	48.8	...	18.0	...
Thailand	2,110	2,020	54.4	52.5	14.1	14.0
EUROPE						
Austria	2,397	2,698	74.4	78.0	22.3	25.7
Belgium	2,667	2,760	78.7	81.2	34.0	33.8
Czechoslovakia	2,402	2,656	72.5	82.1	28.3	31.5
Denmark	3,125	3,206	107.5	105.0	63.9	61.2
Finland	2,617	2,851	91.3	93.3	40.8	43.2
France	[3]2,357	2,667	76.2	87.7	30.1	35.2
Germany: Bizone	2,189	2,543	74.9	79.0	22.1	23.7
French Zone	1,858	2,517	68.0	79.1	23.7	23.3
Soviet Zone	1,895	2,384	60.7	67.4	14.3	14.4
Greece	2,266	2,358	68.1	71.6	17.8	17.1
Hungary	2,432	...	73.3	...	15.5	...
Iceland	3,268	...	123.4	...	86.3	...
Ireland	3,260	3,276	103.5	103.8	49.9	50.0
Italy	2,249	2,398	71.1	77.0	16.0	17.7
Netherlands	2,856	...	77.5	...	31.4	...
Luxembourg	2,693	2,878	77.8	84.9	34.7	41.9
Norway	2,899	3,051	90.4	93.5	47.9	47.8
Poland	2,363	2,625	65.9	74.8	16.8	21.2
Portugal	2,279	2,184	67.8	66.1	18.0	18.0
Spain	2,180	2,377	68.1	75.0	18.2	20.5
Sweden	2,871	3,108	91.8	95.8	58.8	59.5
Switzerland	3,050	2,996	92.6	91.7	46.5	48.4
United Kingdom	2,968	3,084	89.3	92.5	46.6	44.7
Yugoslavia	2,144	...	64.9	...	11.2	...
OCEANIA AND NORTH AMERICA						
Australia	3,262	3,265	105.3	102.8	67.4	64.9
New Zealand[4]	3,286	3,259	99.7	101.3	67.5	66.4
Canada	3,161	3,141	95.0	92.7	59.0	56.1
U.S.A.	3,244	3,186	99.2	95.0	63.0	60.3

FAR EAST

Food statistics for 1948/49 are available for only a few countries, but clearly no significant improvement has taken place in the per caput supply.

Attention is being paid to improving the nutritive value of rice by methods such as undermilling and parboiling or through enrichment programs. A large-scale project was begun in Bataan Province, Philippines, in October 1948 to determine the effects of enriching rice with thiamine, niacin, and iron. Preliminary results indicate that such rice is acceptable to the population and its consumption is leading to a decreased incidence of infantile beri-beri as well as producing a better blood condition in children.

Soy products may be used to contribute vegetable protein of high nutritive value and other nutrients to the diet. In India a project is under way to develop

TABLE 15.—CHANGES IN AVERAGE CALORIE AND PROTEIN VALUE OF THE AVAILABLE FOOD SUPPLIES, 1947/48 AND 1948/49 (*Concluded*)

Country	Calories		Total protein		Animal protein	
	1947/48	1948/49	1947/48	1948/49	1947/48	1948/49
	(*Per person per day*)		(*Grams per person per day*)		(*Grams per person per day*)	
LATIN AMERICA						
Central America and Caribbean						
Cuba	2,682	2,814	66.6	67.1	26.4	25.3
El Salvador[4]	1,557	...	41.2	...	14.3	...
Mexico	2,032	2,101	56.7	59.5	16.5	16.5
South America[4]						
Argentina	3,188	3,191	109.9	109.0	66.2	64.8
Brazil	2,245	...	64.0	...	26.9	...
Chile	2,352	2,356	72.7	71.5	23.7	22.4
Colombia	1,950	...	51.2	...	23.1	...
Peru	1,925	2,219	52.1	59.4	13.5	13.6
Uruguay	2,490	2,529	93.5	92.7	62.7	61.3
NEAR EAST						
Egypt	2,364	2,458	68.4	71.6	9.4	9.5
Turkey	2,173	2,506	67.8	76.6	12.3	12.4
Ethiopia	1,770	...	63.5	...	20.9	...
NORTH AND SOUTH AFRICA						
Algeria	1,279	1,421	37.4	43.3	9.1	10.3
Madagascar[4]	2,074	...	57.3	...	24.7	...
Morocco	1,837	1,825	62.4	61.8	20.2	20.0
Tanganyika[4]	2,163	...	59.2	...	12.3	...
Tunisia	1,498	1,545	44.1	41.9	9.1	9.1
Union of S. Africa	2,422	2,517	73.6	75.2	27.1	27.9

[1]India only.
[2]It is believed by the Supreme Command Allied Powers that for staple foods there is an appreciable understatement of production, particularly from home gardens, both in staple foods and vegetables. A nutrition survey conducted by the Ministry of Welfare estimated calorie supplies per person per day at 1,965.
[3]Unreported production has most likely provided enough calories to raise the level to about 2,500-2,600 calories.
[4]Calendar year basis: 1947 and 1948.

good quality soybean milk and curd and to study their nutritive value as compared with that of cow's milk. In Bangalore, India, an extensive experiment has been carried out on a group of school children. Preliminary results indicate that the soy products are somewhat inferior to cow's milk in supplementing the rice diet. However, the economic advantages are considerable and this work will doubtless have application throughout the rice-eating area.

An extensive school feeding program is operating in Ceylon, where free food is distributed to about 80 percent of the school population. The Government contributes about 8 million rupees a year for the feeding program, while local authorities assume part of the cost. There is a need to improve the nutritive value of the food distributed, which generally consists of a wheat bun with sometimes a small serving of vegetable soup. School feeding programs, in general line with the recommendations of the Baguio nutrition meeting, have been developed in Singapore and Malaya. In Malaya, distribution of reconstituted dried milk and milk cocoa to mothers and infants, preschool and school children, has been carried out in a number of towns, in addition to a free lunch program in twelve schools. A small program, providing a free meal for about 100 children and milk powder for a number of expectant mothers, has been initiated by the Department of Child and Maternal Welfare in Burma, and it

is reported that Thailand hopes to start a child feeding program in one of the government high schools.

The school feeding program started in Japan in 1946 for 252,000 children had expanded by December 1948 to include 6.5 million children out of a total school population of 18 million. Difficulties encountered in 1949 in importing dried skim milk, upon which the program was based, resulted in a bean paste soup of considerably lower nutritive value being used. Any improvement in the program depends on importation, or increased indigenous production of food or both. Recently the activities of the United Nations International Children's Emergency Fund (UNICEF) were extended to the Far East. A demonstration feeding program, organized in the Philippines with the technical assistance of FAO, began on a small scale in July 1949. Similiar programs may be initiated in other countries. A very limited number of children can be included, but a useful purpose will be served in demonstrating the value of school feeding and encouraging the development of this method of safeguarding child health.

EUROPE

In terms of calories and proteins, the food situation in most European countries shows a slight but general improvement. The most significant increase in calorie supply has taken place in all zones of Germany (an average of 500 calories), while Austria, Czechoslovakia, France, and Poland have shown smaller increases from 200 to 300 calories. The supply of animal protein has increased in such countries as Austria, Czechoslovakia, Finland, France, Netherlands, and Poland, while in the United Kingdom and Belgium it has decreased. In the Soviet Zone of Germany and in Greece, Italy, Poland, and Portugal the supply of animal protein remains low; probably also in Hungary and Yugoslavia. The improvement in the over-all food situation in 1948/49 has been reflected in a general relaxation of rationing. Belgium, Poland, and Luxembourg abandoned rationing of all foods early in 1949, while there were ration increases in many countries.

In some countries, notably the United Kingdom, the diet of certain groups of the population is kept under constant review by means of diet surveys, but in most countries no recent investigations have been made. In France, however, diet surveys have been systematically carried out in Paris, Marseilles, and small cities. They indicated that in the last quarter of 1948 there was a considerable increase in the average daily intake of calories. In Marseilles the calorie value of the diet increased from 2,200 in 1947 to 2,900 in 1948, with accompanying increases in all nutrients. In Czechoslovakia, preliminary results of diet surveys among school children and adolescents indicate that the latter group is obtaining sufficient calories but not enough of certain nutrients, especially animal protein. The diet of various groups of the population in Italy in 1948 was found to show little improvement in quality or in quantity over that of 1947.

Those vital statistics which to some degree reflect the state of nutrition suggest that it has improved. With the exception of Rumania and most parts of Germany, infant mortality rates are gradually decreasing; in most countries they are below those of the prewar period. Tuberculosis rates, while showing a general decline, often reveal an increase in certain groups such as adolescents and young women. (Nutrition, despite its importance, is only one of several factors affecting tuberculosis.) More specific information on the nutritional condition of adolescents is urgently needed.

One of the most significant undertakings designed to improve the nutrition of children is the joint UNICEF-FAO milk conservation project. A survey, made in 1948 to determine the need for technical assistance and dairy requirements in the countries receiving UNICEF assistance, indicated a need to expand pasteurization plants and establish milk drying plants, both of which would increase the supply of "safe" milk. During the current year, UNICEF has provided financial assistance, and FAO has given technical aid to countries anxious to develop their dairy industry along such lines, with the agreement that the milk be distributed free of charge to infants and children in accordance with UNICEF feeding policies. It is anticipated that indigenous supplies of good quality milk will shortly replace the dried milk now being provided by UNICEF. These supplies will enable the child feeding programs initiated by UNICEF to be carried on and further developed by the governments concerned.

The school meal scheme in the United Kingdom and the well-known Oslo Breakfast in Norway continue to benefit a large proportion of the school population in these countries. Since a decree of February 1948 that food should be given free to school children in Denmark, the number of children participating in a school feeding program has increased greatly. In Finland, provision of food for school children was made obligatory in August 1948 and during the past school year milk was distributed daily to the children. The school feeding programs in Greece and Czechoslovakia have been expanded. In Bizone Germany the child and student feeding program, which covers 4.26 million children, was extended 1 May 1949 to include 555,000 children in the French Zone. In Portugal, *Obra das Mães* (Mothers' Organization) is responsible for providing free school meals to some 12,000 needy children in various towns and rural areas.

The child feeding programs in operation throughout the world indicate that there is a widespread appreciation of the importance of such feeding in improving and maintaining the nutrition of children. There is, however, a need for further development. In some cases it can take place only with the improvement of available food supplies and feeding facilities.

UNITED STATES, CANADA, AUSTRALIA, AND NEW ZEALAND

The high level of food supplies in these countries should be sufficient to provide an adequate diet for everyone. But there are problems of distribution due on the one hand to economic and geographical factors and on the other to ignorance of or indifference to what foods contribute to good nutrition. In some groups there is a low intake of certain nutrients; in others, overconsumption of calories leading to overweight is becoming a problem and the relationship between overweight and certain degenerative diseases is being studied. In several communities of the United States signs of malnutrition, such as goiter, anemia, and rickets have been revealed by recent studies of food consumption and nutritional status. In Canada a number of dietary and nutritional investigations were carried out in the past year, especially among school children and Indians of the James Bay area. The results have led to programs of nutrition education and of food supply so designed as to help remedy the apparent defects. In a medical study carried out in Newfoundland in the summer of 1948, the incidence of malnutrition was found to be lower than five years earlier, except for low intake of ascorbic acid. The improvement was attributed largely to economic betterment and to special measures, notably flour enrichment and the fortification of margarine with vitamin A.

Surveys carried out among groups of aborigines in Australia have revealed ascorbic acid deficiencies associated with a low intake of fruits and vegetables. In Canberra the administration of potassium iodide to school children over a period of one year brought about a marked reduction in the incidence of goiter. Likewise in New Zealand, the incidence of goiter among school children has shown a significant improvement since the introduction of iodized salt.

Of the four countries in this group, only the United States has a national school lunch program. About 6.9 million children, or one-fifth of the school population, participated in 1948. The program, which extends to the dependent territories, is bringing about a marked improvement in the nutritional status and food habits of children in Puerto Rico and the Virgin Islands.

New Zealand has a school milk distribution program, and in Canada and Australia there are some local school meal or milk programs in operation. During the past year a free milk scheme for school children, operating from May to August, was started in the State of Victoria, Australia. At present some 65,000 children are receiving half a pint (300 c.c.) of milk a day.

LATIN AMERICA

Provisional food balance sheets—available for only some of the countries in Latin America—as well as information from other sources indicate that supplies of calories per person increased in 1948/49. Per caput protein levels increased in certain countries and fell in others, but the proportion of protein of animal origin decreased in all countries for which data are available.

In Mexico and Central America the per caput food supply continued to be generally low, especially in El Salvador, the most densely populated country on the mainland. In most of this area it is customary to treat maize, one of the basic foods, with lime to soften it before cooking, a practice which adds a significant amount of calcium to the diet. It is not followed in other maize-eating areas, and generally the calcium content of the diet in these areas is deficient.

In Paraguay, Uruguay, and Argentina, cattle outnumber people, and meat consumption is probably among the highest in the world. On the other hand, in the neighboring country of Chile, both meat and milk are relatively scarce. In Paraguay, maize and manioc are staple foods, but wheat is imported for urban consumption. Although there is a large number of cattle, milk supplies are small and unevenly distributed. The milk supplies in Uruguay and Argentina are the largest in Latin America, but even there considerable sections of the population consume little milk. Some survey data show that calcium deficiency is common.

In most Latin American countries the use of wheat flour is increasing with urbanization. Where maize is treated with lime, the substitution of white flour may bring about a significant decrease in calcium in the diet, especially important where the milk supply is low. In many areas the per caput sugar consumption has increased, and white sugar tends to replace crude sugar, which contains some iron and other minerals.

Few surveys of diet and nutritional status have been made in Latin America. Survey data from Mexico and Guatemala show great variations in calorie and protein levels among different groups of the population but a general deficiency in riboflavin and niacin. Animal protein levels are particularly low among the Indians, but the diet of those retaining their old food habits and consuming many wild plants has been found superior in vitamin A value and ascorbic acid to that of other groups who

have lost such habits. Recent studies among school children in Rio de Janeiro showed multiple vitamin deficiencies and a high incidence of dental caries and anemia. Goiter is reported in many areas. Vitamin A and other deficiencies are reported from Colombia and Venezuela.

School feeding programs in Latin America have been developed primarily for the benefit of indigent children. There is a need for considerable further development and expansion, and for studies on the possibility of providing low-cost meals of high nutritive value from foods which are available locally. In some countries, Brazil, for instance, industrial feeding programs have been introduced and reports indicate that they are expanding. Emphasis has been placed on state restaurants which supply meals to workers at low cost.

AFRICA

As far as most of the dependent territories are concerned, the meager information available seems to indicate that changes have been relatively slight in the past year. There is perhaps a tendency towards improvement in certain urban areas. A conference on nutrition in Africa, called by Belgium, France, and the United Kingdom, was scheduled at Dschang, French Cameroons, for October 1949.

In the Union of South Africa the diversity of racial and economic groups is associated with widespread inequalities in food distribution, and a national average does not give a satisfactory picture of actual consumption. The school feeding program for children, introduced in 1944, is being reorganized. Finances have been reduced in the state-aid milk and butter scheme, designed for preschool children and needy families, as well as in the food scheme for drought-stricken native areas. It seems doubtful whether the food and nutrition situation has improved sufficiently to justify these changes. It is reported that the summer of 1949 has been characterized by widespread malnutrition in reservations of the Eastern Cape Province. Many infants have died of starvation and deficiency diseases among children have been widespread.

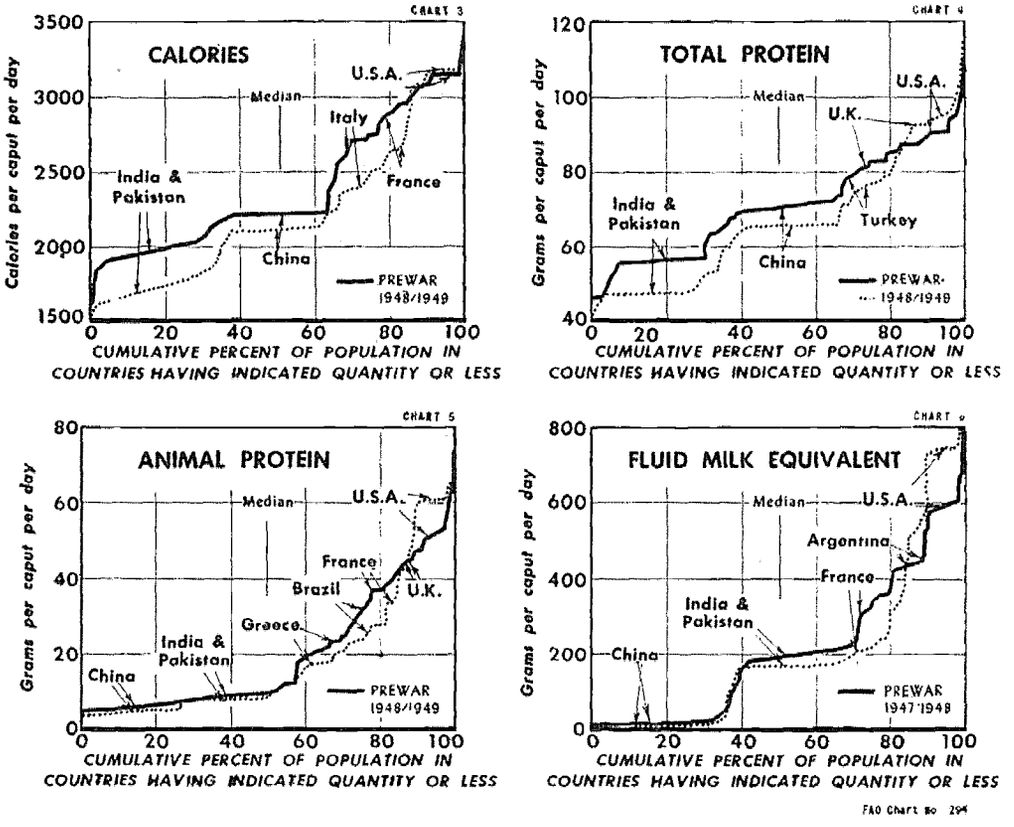
NEAR EAST

A relatively low supply of calories, animal protein, and protective foods is characteristic of countries in the Near East. The insufficient milk is of poor quality and fresh vegetables are lacking in many districts. Deficiency diseases and other indications of poor nutritional status are widespread. The rates of infant and child mortality are of the same order as in Central America and the Far East. While statistics for the region as a whole are very incomplete, they show that in general three-fourths of the total calories are provided by cereals, starchy roots, tubers, and sugars.

There has been some slight increase in calories in 1948/49, but the quantity of animal protein has not risen, and there is still a deficiency of vitamins of the B group, and of vitamin A. In addition, inequalities in distribution have been accentuated by the continuing increase in the cost of living. Nevertheless, pellagra, once a common deficiency disease in Egypt, is becoming progressively rarer.

The practice of providing hot or Oslo type meals to school children in Egypt continues, and some attention is being given to the feeding of industrial workers. Israel has successfully maintained a rationing system and has continued its school meal program in which milk is included. But in general such measures are limited in scope.

Charts 3, 4, 5, and 6.—Distribution of World Supply of Calories, Proteins, and Milk



INEQUALITIES IN WORLD FOOD DISTRIBUTION

To illustrate the wide differences in supplies of calories and of total and animal protein among different countries, and to show the changes which have occurred over a period of ten or more years, cumulative curves of distribution are presented in Charts 3 to 6.[2] Each of the curves suggests that the disparities have widened in recent years.

Chart 3 shows that 22 percent of the total population was formerly at or below the level of 2,000 calories; this proportion is now 35 percent. At the median, i.e., 50 percent of the population, the calorie level is now about 2,120 as compared with about 2,240 prewar. The aggregate calorie supply for all countries increased by less than 1 percent so that, with an 8-percent increase in population, the per caput average is lower than the prewar average by about 7 percent (2,220 calories as against 2,390).

Chart 4 shows that less protein is available to more than 80 percent of the population than in the prewar period. This is due to a reduction in per caput supplies of grains and animal foods. At the median point in population the protein level is about

[2]The 51 countries covered by Charts 3 to 5 represent roughly three-quarters of the world's population. For most of the countries the more recent information relates to 1948/49, and the curves are labeled accordingly, but in several countries, notably in Asia, they are based on 1947/48, and, in a few, on 1947. Chart 6 covers 48 countries and the data refer principally to 1947/48.

66 grams, as against 71 grams prewar. The aggregate protein supply has increased less than 2 percent. The per caput averages are the same as the median values and correspond to a 7-percent decrease.

From the nutritional standpoint the shifts in animal protein supplies shown in Chart 5 are more significant and more serious than those in total protein although, naturally, the changes are smaller. At the median, the level is only about 8 grams, both prewar and postwar. There has been a general decrease for most countries, which consumed in the prewar period less than 42 grams per person per day. At the upper end of the curve there have been appreciable gains. In 1948/49 the aggregate quantity for all countries was 2 percent above prewar, but the average quantity per caput was 18.5 grams as against 19.6 grams per day prewar, i.e. a drop of 6 percent.

The position for milk products is shown in Chart 6 in terms of fluid milk equivalent; however, since the emphasis is on milk protein, no account is taken of milk used in the manufacture of butterfat or cream except to the extent that the non-fat solids are used in human consumpion. As in Charts 3 to 5, the contrasts are sharp between the most and the least favored countries; more of the population than prewar are now below 200 grams, and more are below 300 grams. The percentage having more than 700 grams has increased. At the median point, the present level of 165 grams or less contrasts with the prewar level of 190 grams. Yet, the aggregate supply represents a gain from prewar of about 6 percent, i.e. almost as much as the 8-percent gain in population; so that the average per caput quantity was nearly the same as in the prewar period, about 200 grams.

CONCLUSIONS

It emerges that in countries in which the prewar food and nutrition situation was in general satisfactory, a significant improvement appears to have taken place during or since the war. By contrast, where the level of food intake has historically been low, the situation has deteriorated; and such countries represent a major proportion of the world's population. Over-all food supplies remain grossly inadequate and inequalities in distribution have become greater. It seems important, therefore, to consider not only measures such as expanding agriculture and trade in foodstuffs, but also measures to make the best use, from a nutritional standpoint, of the foods actually available. These include the following:

(1) ***Rationing.*** In some countries, notably the United Kingdom, rationing has made it possible to use limited food supplies to good advantage. In countries which depend largely on home-produced foods and where there are wide disparities in the economic position of different sections of the population, it is difficult to operate effective ration programs.

(2) ***Milling Practices.*** The use of cereals of high extraction supplies nutrients often deficient in the diet. However, there may be resistance to even a familiar staple food in slightly modified form. This may be at least partially overcome by a well-planned program of public education in nutrition.

(3) ***Enrichment.*** Wherever knowledge of the nutritional situation clearly indicates the need for certain nutrients such as vitamins and minerals, the enriching of staple foods with these may be considered a logical step. On the other hand, it must be recognized that enrichment is often costly and therefore has limited application.

(4) ***Nutrition Education.*** The changing of food habits and culinary practices is always difficult and slow, but often most desirable. Education in nutrition usually stimulates demand for different foods of higher nutritive value, and it can also bring about a better utilization of existing supplies.

(5) ***Supplementary Feeding.*** The development of nutritional deficiencies is conditioned both by the relative absence of a needed nutrient in the diet and by increased requirements which result from conditions of stress like rapid growth, child-bearing, and heavy work. Supplementary feeding programs for children and adolescents, pregnant and nursing women, and canteens for certain types of industrial workers, are therefore of great value.

Finally, nutrition programs must be based on a thorough knowledge of the nutritional situation in a country such as can be obtained by diet surveys and assessment of nutritional status. An accurate knowledge of the nutritive value of available foods is also desirable. It is not only the poor and undernourished countries that need nutrition programs, but also those in which available food supplies appear to be adequate, since inequalities in distribution may prevent important sections of the population from obtaining a satisfactory diet.

4. Prospects for 1950/51

THE FAO CONFERENCE at its Fourth Session asked to have material collected on the probable state of food and agriculture in 1950/51, including goals of production, international trade, and consumption, and suggested that the secretariat seek such information through the annual reports of Member Governments. The 1950/51 season is now less than a year ahead. Some of the crops which will be consumed in that year are already sown. Yet, as of 1 September, only 15 governments have replied fully (and three partially) to the request of the Conference out of a total of more than 100 independent countries and dependent territories. The Director-General had to decide whether to abandon the project requested by the Conference, or to try to make secretariat projections for 1950/51 on a basis of available information. Such projections have been made and have been presented to pre-Conference regional meetings in order to get the comments of governments. At the time of this writing, these meetings have not yet been held, so that this document can contain only tentative indications of the situation which might develop. Details on individual commodities are in the Appendices. Here only broad general trends are summarized.

PRODUCTION

Normally the rate of growth of world agricultural production matches the rate of growth of world population, that is, it expands at between 1 and 2 percent per annum. Drought or flood may reverse this trend for a season or two in limited areas. War may reverse it in many countries over a period of years. Individual countries may expand their agricultural production more rapidly when they are building up an export trade. Others may abandon a large part of their farming as they come to specialize in manufacturing. However, in spite of these particular deviations, the world rhythm of production has been remarkably constant.

Increases in per caput consumption would require the food supply to expand more rapidly than population. But per caput consumption grows very slowly save in exceptional circumstances. An example is the United States, where per caput consumption (measured in money values at constant prices) increased 10 percent in the short space of five war years, whereas over the previous 30 years it had increased by only 5 percent. In industrial Europe, per caput consumption has been increasing at a slow speed over the last 150 years. Most of the underdeveloped low-income countries show no tendency at all to attain a higher per caput consumption. In other words, their population expands to the limit of their means of subsistence.

Today, people no longer accept such historical trends as inevitable. Governments of most underdeveloped countries hope to develop industry and agriculture *rapidly*, more rapidly than population increase. Some—for example, India, Mexico, and Poland—are already taking steps in this direction. But the reported goals for production in 1950/51 and beyond suggest that, as yet, action programs are the exception rather than the rule. For the world as a whole, little speeding up of progress in general agriculture seems likely unless new and more deliberate efforts are made.

For the Far East, it is difficult to generalize. China, the biggest population unit in the area, is at present an unknown element. Japan may be near the limit of its food production potential. India has a program which requires the attainment of self-sufficiency in food by 1951 and is asking all farmers to increase production by 15 percent. The other countries of Southeast Asia have various programs. However, massive technical and social problems have hitherto bedeviled efforts to expand food production. A great number of these problems need more vigorous government action to stimulate productive investment, but others require outside aid in the form of equipment and technical assistance.

It is not expected that much progress could be recorded as early as 1950/51, but even by that date rice supplies will be more plentiful than now, and possibly the region's large food import, particularly of cereals, may be significantly reduced. Production programs are likewise ambitious in the traditional exporting countries, such as Indonesia, Malaya, the Philippines, and Thailand, with the intention of expanding food and raw-material exports to the prewar level or above.

The U.S.S.R. has plans for rapid expansion of agriculture and is encouraging farmers to concentrate on livestock production more than on food crops. This may indicate the achievement of sufficiency in bread and potatoes and a desire to diversify the diet. Production targets of the U.S.S.R. would permit the export of both food and forest products on a substantial scale.

The Eastern European countries have production goals which postulate a rate of expansion a little less rapid than that of the Soviet Union and involve a switch from grain exports to exports of livestock products. The countries of Western and Central Europe, under the compulsion of dollar shortage and the need to curtail living standards, are endeavoring to produce more food so that their imports can be limited to what they can pay for. The results of their efforts will not be fully evident as early as 1950/51. As a whole, Europe's output of grains by that date is planned to reach the prewar level; its output of sugar 12 percent above prewar; its output of milk and meat 92 percent and 90 percent of prewar respectively.

In World War II, the United States, Canada, and Cuba, as in World War I, filled an emergency role in supplying food to stricken countries; again they face readjustments of production as the emergency gradually passes. Already the United States has introduced acreage allotments (a form of restriction) for wheat and contemplates the same for maize and cotton. Since price supports are currently at levels which tend to stimulate production, such programs may increasingly be combined with quantitative limitation of output. Production goals for 1950/51 envisage the beginning of limitations to take into account the reduced opportunities for export. Similar readjustments in Canada and Cuba will be more difficult because of their greater dependence upon agricultural exports.

In Latin America, prospects differ widely from country to country. There are few official production goals. Argentina has of recent years neglected agriculture for industry but still has a large agricultural production potential; in June the Minister

of Agriculture officially announced a goal of 7 million hectares of wheat. In the same month price ceilings on bread, edible oils, and dairy products were removed, which should stimulate production. Three Latin American governments have or expect soon to have in practical operation comprehensive plans of agricultural development. Brazil, in its SALTE plan, proposes to spend 3,700 million cruzeiros on agricultural development, which includes bringing new areas into cultivation, new irrigation developments, and the extensive use of improved seeds, fertilizers, and farm machinery. The Mexican six-year plan aims at reducing the necessity for importing cereals by the extensive irrigation of new land and the wider use of fertilizers. Venezuela has a minimum plan of agricultural production, with the object of reducing food imports by increased cultivation of maize, rice, potatoes, pulses, and oilseeds. A large irrigation program and the colonization of immigrants are included. In the West Indies, the British are developing a citrus industry to ensure a more adequate supply within the sterling area.

Generally speaking, however, Latin American countries are not yet taking action which is likely to increase food production faster than population growth. To improve nutritional standards or develop their exports, these countries may have to put forth more vigorous efforts and spend more money to modernize their agriculture.

In Australia and New Zealand, production trends suggest expansion, but at a comparatively slow rate. Both countries have an assured market in the United Kingdom for almost all their food exports. Scope for expansion in Australia is perhaps greatest in Queensland, where much new land can still be brought into cultivation. New Zealand has long-term plans for greatly increasing the productivity of its grasslands.

In colonial Africa, large developments have been started or planned, but not much increase in output can be expected as early as 1950/51. Formidable difficulties of the environment demand extensive and in some cases long-time experiments before the arts of tropical farming can be mastered. Moreover, in Africa, social problems are as difficult as technical problems. Apart from oilseeds, several colonial territories plan to expand cotton, coffee, and tobacco production for export. The Union of South Africa expects to develop sugar production until there is again an export surplus. No further expansion of fruit for export is contemplated but more oilseeds will be grown for domestic use. North Africa is expanding cereals production to meet the needs of the rapidly increasing population and is expanding citrus for export. The Near East has ambitious irrigation proposals which it will take some years to bring to realization. Here, as in Africa, the technical and social difficulties are interlocked.

Looking at the world as a whole, 1950/51 is likely to see Europe and North America making such adjustments in agricultural production as their economic situations require, the U.S.S.R. forging rapidly ahead, but few other regions embarking on any radical program of development. Lack of domestic funds, technical knowledge, and foreign equipment are the principal hindrances in underdeveloped countries. If the traditional rhythm of slow agricultural development is to be broken and if any appreciable change in the world's malnutrition is to be effected, then steps of a far more decisive character are needed. In this context the Technical Assistance Program proposed by President Truman acquires its true significance. By bringing extra advice to the underdeveloped countries, it should be possible to lay the basis for national agricultural services without which no modernization of farming can be expected, and at the same time to prepare conditions more favorable to the granting of international loans which these countries urgently need for their larger land development projects.

INTERNAL DEMAND

Changes in internal demand for foodstuffs relate primarily to industrial countries. In underdeveloped countries, where 15 percent of the population lives in towns and the remainder are farmers or neighbors of farmers, such a phrase means very little. However, even in these countries, to the extent that new industries are developed and cities grow in size, there will be an increasing demand for food in marketed form and for foods of different kinds. For example, in Latin America the movement of population from rural to urban areas involves a change from maize to wheat consumption. Furthermore, in most underdeveloped countries, population is still growing fairly rapidly. This will maintain a strong demand for food. On the other hand, efforts at industrialization generally create inflationary situations which restrict the purchasing power of consumers.

In industrialized countries consumer demand seems likely to remain high. Even if the food subsidies, so significant at present in several countries, were to decline, and even if the United States recession were to continue, demand would remain high because of the high levels of real income. But there will be consumer resistance to high prices; it has been noted already in several countries. In cases where agricultural production costs are too rigid to permit appropriate price reductions, consumers may switch to other products. There is, for example, the possibility of a switch from butter to margarine, from one type of meat to another, or from meats to fish. The demand for a more varied diet which characterizes high levels of real income should, however, help to maintain the prosperity of the livestock industries in most countries.

Real incomes are planned to rise at a rapid rate in Eastern Europe and the U.S.S.R. and there is likelihood of substantial recovery from the present low levels in Germany and Japan. Elsewhere, changes will be more gradual, but if real incomes fall seriously anywhere, administrative techniques and experience exist which make it possible to introduce quickly special programs, such as stamp plans, to stimulate consumption.

The demand for clothing and other textiles is governed by much the same factors as the demand for food, except that it is more sensitive and is likely to be affected sooner; an example being the recent decline in United States consumer demand. In Europe, since clothes rationing was abandoned, demand and supply are being equalized by selling the available supply at high prices. If real incomes have to fall in some countries, consumer pressure will increase on the cheaper lines—for example, on cotton and rayon rather than on wool and linen.

The demand for forest products is even more sensitive. In the United States the recession has quickly affected purchases of lumber and pulp. In Western Europe, where the supply consists largely of licensed imports, the level of demand is the decision of the government. The tendency may well be to continue to give low priority to imports of lumber, pulp, and paper while foreign exchange continues scarce. Germany and Japan will soon increase their imports again, but elsewhere, in other regions, changes will be insignificant.

EXTERNAL DEMAND AND SUPPLIES

Great interest attaches to the future of international trade in farm products. This is an especially difficult topic on which to formulate definite views, since international trade in many cases is a marginal factor representing a very small fraction of total

production. Moreover, the volume of international trade depends on influences in other sectors of the economy. Experience also shows that governments are more loath to establish export or import goals than production goals.

Those underdeveloped countries which have reported to FAO indicate
an intention to reduce food imports—not one of them suggests any expansion; and
an intention to expand agricultural exports.

These two tendencies are believed to be true of most of the nonreporting countries and cover a wide range of commodities and a substantial majority of the world's population.

Examples of countries intending to expand agricultural production in order to dispense with imports are Brazil for wheat, Chile for livestock, Central America for maize and rice, India for cereals and jute, Indonesia for rice. Examples of countries planning to expand their exports are Mexico for sugar and oilseeds, Ecuador for rice, East Africa for oilseeds, Burma and Thailand for rice, the Philippines for sugar, Eastern Europe for livestock products, and North Africa for fruit.

These intentions are easily understood. Underdeveloped countries want to import equipment for industrialization. Many of them hope to obtain foreign loans, but these at best would cover only part of their needs. They do not have enough foreign exchange to buy all they need for economic development. Thus, if they are now importing food—and, in the case of India, for example, food is at present one-half of the total imports—they will try to reduce this item. On the other hand, they will endeavor to export more, and their exports are about 80 percent agricultural and mineral products. Of course, a number of these countries have plans which will not be completely fulfilled but, even if only partially successful, the general tendency to increase exports and reduce imports would, if multiplied all around the world, produce considerable economic disturbance.

Superimposed upon these difficulties, most underdeveloped countries face to a greater or lesser degree a dollar problem, and some of them have a sterling problem too.

Considering next the Anglo-Saxon food exporters, little change is expected in the volume of exports from Australia and New Zealand, except over a much longer period. Canada, however, faces immediate difficulties because there are limits to the extent to which it can accept payment in anything else but dollars.

The United States is in a special position. Its imports of agricultural products consist mainly of raw materials or tropical and subtropical foodstuffs. Few of these, such as coffee, enjoy a comparatively stable market; the majority are sensitive to the level of business activity—for example, cocoa, wool, and wood pulp. Against the import of temperate zone foodstuffs, U. S. agriculture is likely to remain protected.

In assessing U. S. agricultural exports, the elements to be considered include the agricultural policy of price supports, coupled with acreage control, the level of domestic consumption, and the availability of dollars in importing countries. Except during the two world wars, exports have been traditionally a small element in United States agricultural production. This production has expanded over the past 40 or 50 years at a rate which just covered the growth in population and the slow growth in per caput consumption. Since 1939, however, agricultural production has jumped to an altogether new high, part of the increase being absorbed in domestic consumption and part in greatly expanded exports. Assuming that the newly acquired farming tech-

niques have come to stay, it would be necessary either to sustain the present high level of exports and consumption or, if either fails, to cut back production to match the size of the market. Consumption or export subsidies would, of course, delay and cushion any necessary adjustment.

In Europe, the agricultural exports of the eastern and northwestern countries which collapsed during the war are now recovering but will not have fully recovered by 1950/51. Eastern Europe, instead of exporting cereals, will be competing with Northwestern Europe in the export of livestock products. Most of the countries with large fishing fleets are likely, in 1950/51, to have difficulties in the export of their products. By contrast, lumber and pulp exports from Eastern Europe and Scandinavia should find a ready market in Western Europe.

As regards Europe's imports, the official plans indicate very little change in total value. Some shift is contemplated from bread grain to coarse grain. More rice may be imported and less sugar; more fats and less meat. Current efforts to switch supply sources from dollar to non-dollar areas will not have progressed very far by 1950/51. The dollar problem principally concerns cereals, cotton, and tobacco. (Dollar sugar will be less urgently needed by 1950/51.) It will still be necessary for Europe to obtain substantial quantities of these three commodities from dollar areas. As to current proposals for devaluing European currencies, it is not possible to predict how far such a step would ease the financing of imports.

This brief survey of the outlook in the principal regions of the world may also be considered from the point of view of the principal commodities. In bread grains, Europe's and the Far East's 1950/51 imports should be below the current level, especially if rice prices decline. Supplies of both bread and coarse grain should be ample for international trade even if planned acreage reductions in the United States fully materialize. However, Europe may not be able to afford dollars for the quantities of coarse grain it has planned to import. It therefore attaches importance to the possibilities of expanded exports from Argentina, the U.S.S.R., and other soft-currency sources.

A recovery of rice exports should bring prices down, which may prevent a surplus from developing.

Sugar is the one commodity in which a burdensome surplus seems sooner or later inevitable. Europe will import less than prewar; Far Eastern exports will recover and new exporters, such as Mexico, have entered the market, so that Cuba's large export surplus will no longer be fully wanted.

While it is difficult to make any projection for such a complex group of commodities as fats and oils, it appears that exports from Africa and the Far East are expanding at a speed which will make the European market progressively easier and may result in a fall in prices. The United States will have large quantities of lard to dispose of but may become an importer of flaxseed and linseed oil.

International trade in meat is almost entirely regulated for periods farther ahead than 1950/51 by United Kingdom contracts with Australia, New Zealand, Argentina, and several European countries.

Fish prices are already falling and the principal countries intensify their fishing activities each year. Difficulties in export are likely to develop when tropical countries begin to create fishing industries of their own.

Coffee is one of the few commodities where a comparative shortage is likely to persist through 1950/51. The enormously increased United States consumption can be met by current output only so long as European consumption remains substan-

tially below prewar. New plantings in Latin America will not bear significant fruit until after 1950/51.

Cotton is primarily a question of the level of United States consumption and of dollar shortage. Stocks may accumulate in the United States while cotton is eagerly sought for in soft-currency countries.

Wool supplies promise to be in rough equilibrium in 1950/51; if United States import demand recovers appreciably, the supply of fine apparel wools may be rather tight.

Supplies of lumber may accumulate in North America, owing to reduced domestic demand and the virtual disappearance of exports because of dollar shortage. Western Europe may increase its imports from Eastern Europe. Wood-pulp consumption in the United States and Canada is expected to recover from its present recession but it is not certain that United States imports from Scandinavia will be resumed at the level of 1947/48. Eastern Europe will seek to manufacture pulp and paper products rather than export pulpwood to Western Europe.

Considering the whole field of agricultural, fisheries, and forest products, the 1950/51 position is likely to be one of more ample supplies than at present. Prices should therefore be lower than they now are, and in cases where they are upheld by government support, there may be pressure for more subsidies. Prices are likely to fall much less in non-dollar markets even if the sterling area and other related countries undertake devaluation.

Surpluses of various kinds may begin to accumulate. There may be structural shifts—natural rubber no longer wanted in prewar volume because of the synthetic substitute, sugar no longer wanted because of recovery from wartime devastation. There may be commodities, such as wheat and tobacco, which countries want but cannot buy because of dollar shortage, and there may be bad forward estimating evidenced by overplanting as, for example, citrus fruit. There may be government price-support programs and import duties which maintain production artificially at excessively high levels.

The counterpart to surpluses is inability to pay. This also takes various forms. It may be a low-income group within a country, or an outburst of unemployment, or a shortage of dollars, or the chronic low purchasing power of an underdevelped country.

At the time of writing, a group of economic experts is working in FAO on commodity trade problems connected with emergent surpluses, and a special report has been issued on this subject.

APPENDICES

A. Agricultural Products—Foods

1. GRAINS

Review of 1948/49 Season

IN COMPARING the 1948 cereals harvest with that of 1947, the salient facts are an increase of nearly 50 percent in European production of bread grains and of nearly 10 percent in Asian production; a decrease of over 20 percent in production of bread grains in South America, principally in Argentina, where the weather was unfavorable; an increase of 40 percent in the production of coarse grains in North America due to favorable weather. Reports on the U.S.S.R. indicate effective recovery of production.

The international trade in grains during the year ending 30 June 1949 is estimated at around 36.2 million metric tons, which is the largest annual movement since 1931/32 when a total of 39.8 million tons was recorded. (The record was 41.2 million tons in the 1928/29 season.) Of the 1948/49 total, 26.6 million tons consisted of bread grains (wheat and rye) and 9.6 million tons of coarse grains. The bread grain figure was almost identical with that of 1947/48 and only slightly below the record of 27.8 million tons in 1928/29. The coarse grain movement, on the other hand, while larger than in other years of the past decade, was still well below the level of the 1920's and 1930's.

Tables 17 and 18 show world grain trade by source and destination during the past two seasons.

In 1948/49, Canada and the United States supplied 75 percent of the bread grain and 54 percent of the coarse grain export. Over 50 percent of the world wheat shipments (including flour) originated from the United States. While Canada, Australia, and the United States increased their exports of bread grains in 1948/49, Argentina exported only slightly over one-half as much as in the previous year. A similar situation developed in respect of coarse grains, where increased exports from the United States and Canada more than compensated for the large reduction in exports from the U.S.S.R. and from Argentina which, in the case of the latter country, occurred despite the existence of very large stocks of maize.

The decline in European imports of bread grain, comparing 1948/49 with 1947/48, was offset by increased imports into Asia. As regards coarse grains, North

TABLE 16.—WORLD PRODUCTION OF GRAINS, PREWAR, 1947, AND 1948[1]

Region	Bread grains			Coarse grains			Total grains		
	1934-38	1947	1948	1934-38	1947	1948	1934-38	1947	1948
	(*Million metric tons*)								
North and Central America	28.2	47.9	47.6	81.2	95.2	134.6	109.4	143.1	182.2
Europe[2]	61.4	36.8	54.3	54.9	43.4	50.2	116.3	80.2	104.5
U.S.S.R.[2]	63.6	...	...	34.9	...	...	98.5	...	...
Asia	41.3	39.5	44.3	33.0	32.7	34.6	74.3	72.2	78.9
Africa	3.8	3.2	3.7	8.9	9.5	9.0	12.7	12.7	12.7
South America	8.5	9.2	7.2	17.0	16.1	14.9	25.5	25.3	22.1
Oceania	4.4	6.1	5.3	0.8	1.5	1.3	5.2	7.6	6.6
TOTAL (excl. U.S.S.R.)	147.6	142.7	162.4	195.8	198.4	244.6	343.4	341.1	407.0

[1]For Southern Hemisphere, 1947/48 and 1948/49.
[2]Postwar boundaries.

TABLE 17.—GRAIN EXPORTS (INCLUDING FLOUR) 1947/48 AND 1948/49

Source	Bread grains		Coarse grains		Total grains	
	1947/48	1948/49 (prel.)	1947/48	1948/49 (prel.)	1947/48	1948/49 (prel.)
	(*Million metric tons*)					
Australia	2.8	3.3	0.4	0.5	3.2	3.8
Argentina	3.1	1.7	4.0	2.25	7.1	3.95
Canada	5.9	6.15	0.1	0.9	6.0	7.05
United States	13.2	13.8	2.1	4.3	15.3	18.1
Others (incl. U.S.S.R.)	1.9	1.65	2.1	1.65	4.0	3.3
TOTAL (incl. U.S.S.R.)	26.9	26.6	8.7	9.6	35.6	36.2

TABLE 18.—DESTINATIONS OF WORLD GRAIN EXPORTS (INCLUDING FLOUR), 1947/48 AND 1948/49

Destination	Bread grains		Coarse grains		Total grains	
	1947/48	1948/49 (prel.)	1947/48	1948/49 (prel.)	1947/48	1948/49 (prel.)
	(*Million metric tons*)					
Europe	19.8	17.7	6.7	6.7	26.5	24.4
North and Central America	1.0	0.8	0.3	0.9	1.3	1.7
South America	1.1	1.1	0.1	0.1	1.2	1.2
Asia	4.0	5.8	1.4	1.6	5.4	7.4
Africa	0.8	0.9	0.2	0.3	1.0	1.2
Oceania	0.2	0.3	–	–	0.2	0.3
TOTAL	26.9	26.6	8.7	9.6	35.6	36.2

TABLE 19.—SELECTED GRAIN PRICES IN NORTH AMERICA: WEIGHTED AVERAGE CASH PRICES FOR REPRESENTATIVE MARKETS

Period	Wheat				Maize	Rye	Barley	Oats
	No. 2 Northern Winnipeg[1]	No. 1 Dark N. Spring Minneapolis	No. 2 Hard Winter Kansas City	No. 2 Red Winter St. Louis	No. 3 Yellow Chicago	No. 2 Minneapolis	No. 1 Feed Fort William	No. 2 CW Fort William
	(*U.S. dollars per bushel*)							
Prewar (1935/36-1939/40)	0.91	1.15	0.96	0.93	0.72	0.64	...	...
January 1948	3.23	3.20	3.03	3.12	2.71	2.76	1.28	0.97
July 1948	2.46	2.43	2.19	2.25	2.14	1.78	1.19	0.86
January 1949	2.30	2.35	2.25	2.29	1.43	1.63	1.10	0.77
July 1949	2.01	2.38	2.00	1.87	1.40	1.45	1.16	0.51

[1]Average of daily cash quotations.

and Central America substantially increased their imports, the situation in the other continents being little changed.

The 1948/49 season was largely one of transition from food scarcity conditions to a working equilibrium between supplies and effective demand. During the July-September quarter (1948) supplies were still tight, most countries being on a day-to-day basis, with ration controls until the new harvests were available. With new grain crops in hand and a large production in Europe of other foodstuffs, especially potatoes, to supplement cereals, most countries relaxed or abolished consumption restrictions—such as admixtures of coarse grains with bread grains, high extraction rates, bread rations, farm delivery quotas, etc. This helped to maintain an active import demand for wheat, notwithstanding the sizable increase in the 1948 harvest. Rebuilding of commercial stocks of bread grains in importing countries was rather limited on account of the dollar shortage. The general improvement of the world supply/demand position was such that the international allocation of coarse grains and rye was discontinued in December 1948, and of wheat and flour in April 1949.

Recent increases in production have brought about a decline in the prices of cereals in countries maintaining a system of free prices. The drop has been particularly marked in North America.

In Europe, no such movement has occurred. In fact, in many leading countries, wheat prices for the 1948/49 season were fixed at higher levels than those of 1947/48. The same is true in Japan. In the case of coarse grains, however, some declines have occurred, as shown in Table 20.

TABLE 20.—SELECTED GRAIN PRICES, EUROPE AND JAPAN

Period	Wheat				Rye	Barley		Oats	Maize
	France	Japan	United Kingdom[1]	Yugoslavia	Poland	Denmark	Hungary	Belgium	Italy
	(*In national currency per 100 kg*)								
Jan. 1947	1,078	340	18/7	...	1,900	43.00	37	310	1,600
Jan. 1948	1,833	758	22/1	400	3,500	64.25	69	325	3,500
July 1948	1,833	1,777	23/6	412	3,000	51.00	71	515	3,500
Jan. 1949	2,275	1,777	25/-	412	2,000	45.75	70	344	4,500
June 1949	2,275	[2]2,167	25/11	412	...	43.50	...	328	4,500

[1]Per 112 lb.
[2]Provisional price, 1949 crop.

Outlook for 1949/50

While it is still too early to make very definite forecasts regarding the 1949 world grain harvests, present information points to some decline from the 1948 level in all grains except possibly rye, which is largely dependent upon the harvest in the Soviet Union. For wheat the decline may be about 10 percent in North America and 5 percent in Europe. In Asia the position is uncertain, but there may be some drop. For maize, barley, and oats, some decline from last year's big crops in North America is currently forecast without compensating increases for other producing areas. Compared with a year ago, grain harvests as good or better now appear in prospect for most of Northern and Central Europe while less favorable conditions, especially for wheat, are noted in parts of Western, Southern, and Southeastern Europe. Countries

reporting the largest declines for wheat from last year are France, Spain, Rumania, Greece, and the United Kingdom.

The outlook for the Soviet Union is still uncertain. Wheat area, though still below prewar levels, is reported to be above that of a year ago, and with normal weather conditions some increase over 1948 production could result; little change is indicated for other grains. In Turkey a sharp decline in all grain harvests is reported; wheat, the principal grain crop, is currently estimated at less than half the 1948 outturn. Drought conditions in the important plateau producing region have reduced yield prospects.

For the Southern Hemisphere, little information is yet available regarding the next grain harvest. Some increase in wheat in Australia and Argentina is expected, however, and large outturns of maize in South Africa and of maize and barley in Argentina, where reduced harvests were reported this past season. Net changes in world production of the various grains seem unlikely to be significantly affected by Southern Hemisphere output unless the area and yields are sharply different from those of 1948/49.

International trade in grains in 1949/50 is expected to continue at a high level, provided the payments difficulties of importing countries are not appreciably aggravated, and may be near the 36.2 million tons estimated for the past cereal year. On the basis of the present production outlook, bread grain shipments of 25 to 27 million tons, or about the same level as in the 1948/49 season, would appear necessary if present bread consumption levels—especially in Europe—are to be maintained. Coarse grain shipments of 10 to 11 million tons, or slightly larger than in the 1948/49 season, might be expected unless currency problems impose new restrictions. Still larger shipments of all grains would be required if stock rebuilding were to be carried out to any significant extent in deficit countries.

North America may again account for around 75 percent of the total wheat movement and possibly 50 percent of the coarse grain shipments. Some increase over the small 1948/49 Argentinian exports of both bread grains and coarse grains seems likely. With reduced wheat harvests reported for Rumania and Turkey, even smaller quantities might move from "other sources" in 1949/50 unless offset by larger exports from the Soviet Union or North Africa.

The International Wheat Agreement will affect sales prices of a substantial proportion of the quantity traded internationally. The maximum price under the Agreement, $1.80 per bushel, is slightly below recently prevailing prices in North America. As most wheat in the Agreement comes from dollar sources, the ceiling in prices will somewhat reduce dollar requirements for wheat imports and thus aid importers experiencing dollar exchange difficulties. The Wheat Agreement, together with bilateral trade deals with nonagreement sources, and additional quantities to be covered by United States financing, especially for military occupation areas, account for the bulk of the world trade in wheat.

No significant increases in carry-over stocks for the world as a whole are in prospect for 1 July 1950 and some reductions may even be recorded. The margin of existing or prospective stocks in 1950 over minimum working levels in the four exporting countries represents only 15 to 20 percent of the current world trade in wheat while stocks in many importing countries are still low.

Outlook for 1950/51

Europe's bread grain program for 1950 calls for a 5-percent increase in area over 1948 and a 10-percent increase in production, which would restore output to about the 1934-38 level.[1] In view of the fact that, despite a higher goal, the seeded area in 1949 was little changed from 1948 and that yields in 1948 were good owing largely to unusually favorable weather, these 1950 targets for area and production seem optimistic. Moreover, about one-half of the programmed increase in bread grain production is scheduled for Eastern Europe, where such an expansion would not necessarily be accompanied by an increase in exports to Central and Western Europe. Europe is therefore unlikely to be able to reduce its bread grain imports in 1950/51 as much as it planned to do, assuming that present consumption levels and extraction rates are to be maintained.

As regards other cereals, substantial increases in area and production of barley and mixed grains are planned for Western and Northern Europe, while a decrease in maize area is scheduled for Eastern Europe. Increased imports of coarse grains have been programmed, perhaps optimistically, for Europe as a whole.

In the Far East, rice also has to be considered. A small increase in wheat output is programmed, notably for India and Japan, and a more considerable increase for rice, particularly in India and the rice-exporting countries. While the full effect of these programs is likely to appear later than 1950/51, rice prices may be expected to fall relative to cereal prices, which might stimulate deficit countries to replace part of their wheat and maize imports by rice imports.

In Australia and Canada no substantial changes are anticipated. In the United States a reduced output of wheat and maize is the goal. On this assumption, and assuming no significant stock change, bread-grain exports would be 20 percent and coarse-grain exports 33 percent below the 1948/49 level.

Exports from the U.S.S.R., Argentina, and other smaller sources of supply are a matter of great uncertainty. Several indications suggest that exports, both of wheat and coarse grains, may expand somewhat. This question assumes importance because these are the major cereal exporters, apart from Australia, which do not require payment in dollars.

Altogether the importing countries will continue to depend on the dollar area for some 70 percent of their wheat and nearly half their coarse grains, and there seems no possibility of other sources of supply expanding soon or rapidly. This being so, the volume of world imports, while depending in part on the rate of agricultural expansion in the Far East and Europe, will depend mainly on the state of the world dollar problem in 1950/51. Wheat will, of course, have a high priority on the list of imports, and coarse grains a rather lower priority, although Europe by then will have large livestock numbers to feed. Because of the considerable carry-over stocks of coarse grains anticipated for next summer in the United States, larger exports than those projected could be made if needed. Wheat stocks, however, which provide the only apparent flexibility in the world bread grain outlook for 1950/51, are not likely to be abnormally large.

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[1]Such goals, of course, assume normal weather and growing conditions and a continuation of present price policies; the actual results may be higher or lower, depending upon developments in the intervening period.

Chart 7.—Area and Yield of Wheat and Maize in the United States, 1880-1949

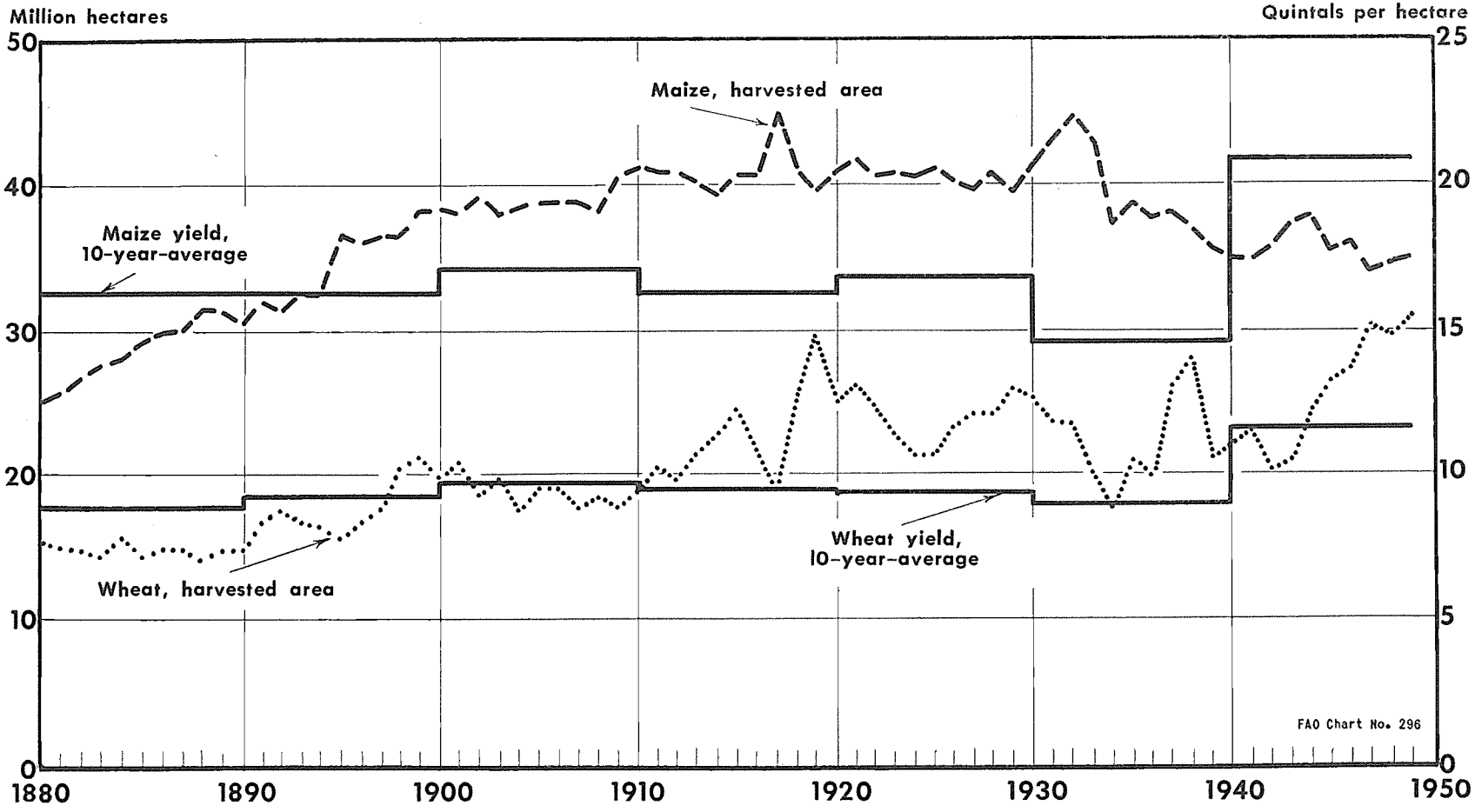


TABLE 21.—LONG-TERM TRENDS IN GRAIN PRODUCTION[1]

Harvested area in million hectares
Yield in quintals per hectare
Production in million hectare-tons

BREAD GRAINS[2]

5-year Average	Argentina			Australia			Canada			United States		
	Area	Yield	Prod.	Area	Yield	Prod.	Area	Yield	Prod.	Area	Yield	Prod.
1909-13	6.1	6.6	4.0	3.1	8.0	2.5	4.1	13.3	5.4	20.0	9.7	19.4
1914-18	6.8	6.6	4.4	4.2	7.1	3.0	6.0	11.4	6.9	23.5	10.0	23.5
1920-24	6.5	8.4	5.4	4.0	7.5	3.0	9.3	10.5	9.8	26.2	9.2	24.1
1925-29	7.9	8.2	6.5	5.2	7.2	3.7	9.7	12.5	12.1	25.0	9.4	23.4
1930-34	7.7	9.0	6.9	6.2	8.2	5.1	10.8	9.0	9.7	23.1	9.0	20.7
1935-39	6.7	9.4	6.3	5.3	8.8	4.7	10.7	8.2	8.7	24.7	8.8	22.0
1940-44	6.0	11.2	6.6	4.1	7.6	3.1	9.5	12.5	11.8	23.2	11.3	26.2
1945-48[3]	5.4	10.4	5.6	5.2	8.7	4.6	10.2	10.1	10.3	28.9	11.8	34.1

5-year Average	Danube Basin[4]			Other Europe (excl. U.S.S.R.)			World (partial)[5]	
	Area	Yield	Prod.	Area	Yield	Prod.	Area	Prod.
1909-13	5.8	11.2	10.5	42.1	13.2	51.7	99.0	106.7
1914-18	8.4	10.8	7.8	29.2	12.0	35.1	97.1	95.8
1920-24	7.7	11.0	7.0	33.5	12.2	40.8	105.8	105.9
1925-29	9.0	10.8	9.7	36.6	13.4	49.2	117.8	123.7
1930-34	9.5	10.5	10.0	38.1	14.3	54.3	122.1	127.7
1935-39	10.2	12.0	12.2	37.6	14.6	54.9	124.6	132.6
1940-44	8.4	9.5	8.0	31.0	13.8	42.8	110.4	120.7
1945-48[3]	7.5	8.7	6.5	29.7	12.3	36.4	115.4	118.0

COARSE GRAINS[6]

5-year Average	Argentina			Australia			Canada			United States		
	Area	Yield	Prod.	Area	Yield	Prod.	Area	Yield	Prod.	Area	Yield	Prod.
1909-13	4.4	13.0	5.7	0.5	11.4	0.6	4.6	14.7	6.8	60.4	14.3	86.1
1914-18	5.1	11.1	5.6	0.5	9.4	0.5	5.9	13.1	7.7	63.6	14.1	89.7
1920-24	4.2	14.7	6.2	0.7	10.7	0.7	7.4	12.6	9.4	61.7	14.9	91.8
1925-29	5.0	17.9	8.9	0.7	8.2	0.6	7.0	12.1	8.5	61.1	14.7	89.7
1930-34	5.7	17.7	10.1	0.8	8.3	0.6	7.1	10.4	7.4	61.3	12.6	77.1
1935-39	5.7	15.5	8.9	1.0	7.5	0.8	7.2	10.2	7.3	56.4	14.0	79.1
1940-44	4.5	17.4	7.8	1.0	6.8	0.7	8.2	13.7	11.3	59.3	16.4	97.3
1945-48[3]	4.1	16.7	6.8	1.2	8.5	1.0	7.8	11.4	8.9	56.0	18.6	104.2

5-year Average	Danube Basin[4]			Other Europe (excl. U.S.S.R.)			World (partial)[5]	
	Area	Yield	Prod.	Area	Yield	Prod.	Area	Prod.
1909-13	6.6	12.7	8.4	33.5	15.0	50.4	135.5	185.7
1914-18	10.0	12.0	12.0	22.9	13.6	31.1	129.3	171.2
1920-24	11.6	10.1	11.7	27.3	13.5	36.8	137.9	186.2
1925-29	12.9	11.5	14.8	27.6	15.3	42.1	145.9	196.9
1930-34	13.7	12.0	16.4	27.2	15.7	42.7	149.7	186.4
1935-39	13.6	12.3	16.7	26.4	16.1	42.5	145.2	189.8
1940-44	11.0	10.8	11.9	22.6	15.6	35.2	141.8	195.4
1945-48[3]	10.6	10.2	10.8	21.7	14.3	31.0	140.8	194.5

[1]Through 1939 the data are based on post-World War I boundaries; from 1940 on post-World War II boundaries. Those areas previously a part of European countries now included in the Soviet Union had, immediately before World War II, the following average area and production of grains: Bread grains: area 5.2 million hectares; production 5.7 million metric tons. Coarse grains: area 5.0 million hectares; production 4.9 million metric tons.

[2]Wheat and rye.

[3]4-year average.

[4]Bulgaria, Hungary, Rumania, Yugoslavia.

[5]Excluding U.S.S.R., China, Manchuria, Iran, and Iraq.

[6]Barley, oats, and maize.

Long-Term Trends in Grain Production and Trade

The principal features of bread-grain production are:

In the following section the broad historical movements in grain production and trade are reviewed to provide a clearer understanding of the present world grain situation. Tables 21 and 22 summarize the statistics of production and trade over a 40-year period for the principal producing and trading regions of the world.

1. An expansion of about 25 percent in world output between 1909-13 and the thirties, a decline during World War II, and an increase over the prewar level in 1948.

2. A large expansion in the United States during and after each world war, achieved on the first occasion by an increase in area and on the second by an increase in area and in yield (see Chart 7).

3. A rapid increase in Canada between 1910 and the mid-twenties and relative stability thereafter (see Charts 8 and 9).

4. A steady expansion in Argentina up to World War II, due largely to increasing yields; a reduced output in the last few years.

TABLE 22.—LONG-TERM TRENDS IN GRAIN EXPORTS (GROSS)

In million metric tons

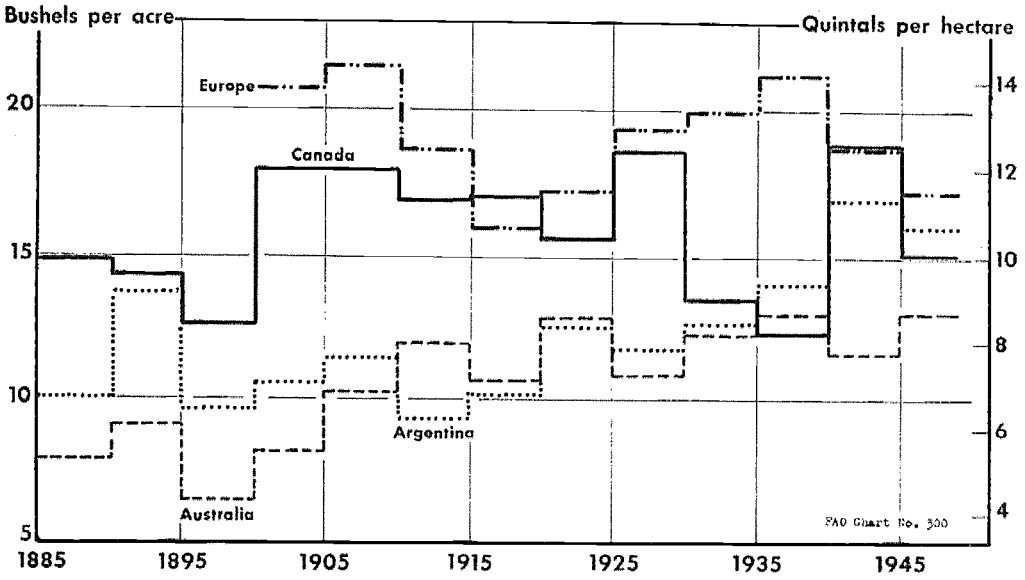
5-year Averages[1]	Argentina			Australia			Canada		
	Bread grain	Coarse grain	Total grain	Bread grain	Coarse grain	Total grain	Bread grain	Coarse grain	Total grain
1909/10-1913/14	2.3	3.6	5.9	1.4	0.05	1.4	2.6	0.3	2.9
1920/21-1924/25	4.1	3.9	8.0	2.5	0.05	2.5	6.5	0.8	7.3
1925/26-1929/30	4.4	6.0	10.4	2.3	0.03	2.3	8.5	0.9	9.4
1930/31-1934/35	4.1	7.6	11.7	3.5	0.05	3.6	6.1	0.4	6.5
1935/36-1939/40	3.4	6.3	9.7	2.7	0.08	2.8	5.0	0.5	5.5
1945/46-1948/49[2]	2.1	2.7	4.8	2.1	0.30	2.4	7.1	0.6	7.7

5-year Averages[1]	U.S.A.			Danube Basin[3]			U.S.S.R.		
	Bread grain	Coarse grain	Total grain	Bread grain	Coarse grain	Total grain	Bread grain	Coarse grain	Total grain
1909/10-1913/14	2.9	1.4	4.3	3.6	2.4	6.0	5.3	5.5	10.8
1920/21-1924/25	8.0	2.6	10.6	0.6	1.8	2.4	0.5	0.2	0.7
1925/26-1929/30	5.0	1.5	6.5	1.4	2.2	3.6	0.7	0.5	1.2
1930/31-1934/35	1.7	0.3	2.0	1.2	2.6	3.8	1.8	0.9	2.7
1935/36-1939/40	1.5	1.3	2.8	1.9	1.3	3.2	0.8	0.4	1.2
1945/46-1948/49[2]	12.2	2.9	15.1	–	0.2	0.2	0.8	0.3	1.1

5-year Averages[1]	Others			World		
	Bread grain	Coarse grain	Total grain	Bread grain	Coarse grain	Total grain
1909/10-1913/14	1.8	0.5	2.3	19.8	13.8	33.6
1920/21-1924/25	0.1	1.0	1.1	22.3	10.3	32.6
1925/26-1929/30	0.7	2.2	2.9	23.0	13.3	36.3
1930/31-1934/35	1.2	1.4	2.6	19.6	13.3	32.9
1935/36-1939/40	1.4	2.5	3.9	16.7	12.4	29.1
1945/46-1948/49[2]	0.5	0.6	1.1	24.8	7.6	32.4

[1]July-June year.
[2]4-year average.
[3]Bulgaria, Hungary, Rumania, Yugoslavia.

Chart 8.—Wheat Yields in Argentina, Australia, Canada, and Europe, 1885-1948



5. Some expansion in Australia in the period 1925-34 and fair stability thereafter except for contraction during World War II, when export outlets were limited.

6. In Europe a slow increase (due to improving yield, especially in Western and Central Europe) over the entire period, interrupted by significant declines during and after the two wars.

7. For the U.S.S.R. a drastic reduction after World War I, subsequent recovery, rapid progress, serious devastation again in World War II, followed by another recovery.

The principal features of bread-grain trade are:

1. A doubling of world exports between 1885-90 and 1909-13 as the Canadian prairies and Argentina were developed for wheat; expansion in the twenties, decline in the thirties, and a very high level since World War II.

2. Elimination of India, Russia, and the Danube countries as exporters by World War I, the two latter recovering in part, only to be eliminated again in World War II.

3. Rise of Argentina, Australia, Canada, and the United States as the "Big Four" in the export trade after World War I, United States exports subsequently declining again only to re-emerge larger than ever after World War II; a fall in Argentina's exports from the beginning of this war.

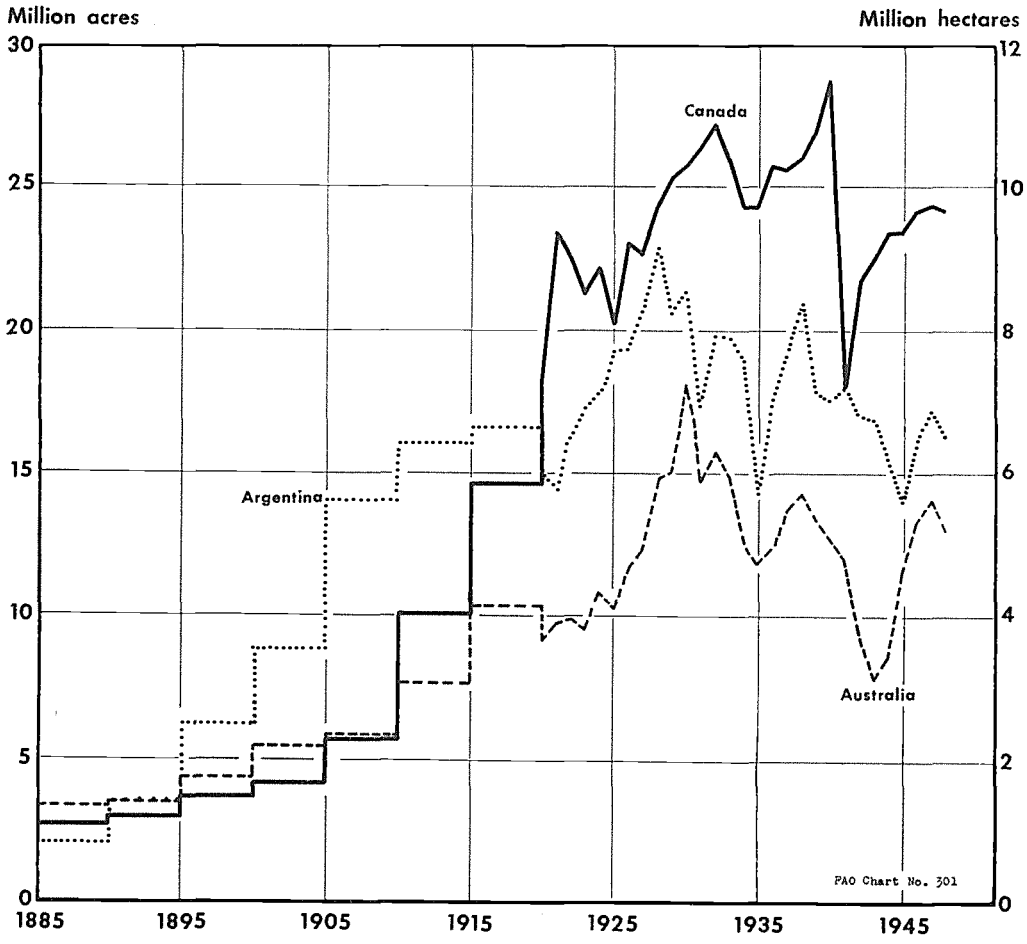
4. An increase in Europe's imports during the twenties to 3-4 million tons (25-33 percent) above the 1909-13 level; a dropping back below this level in the late thirties; a rise to new heights after World War II.

5. The appearance of the Far East for the first time as a substantial importer of bread grains after World War II.

The principal features of coarse-grain production are:

1. Gradual expansion in world area and production, interrupted during World War I and the depression of the thirties.

Chart 9.—Wheat (Sown) Area in Argentina, Australia, and Canada, 1885-1948



2. Tremendous expansion in the United States during the forties resulting from increased yield (see Chart 7).

3. In Argentina an expansion up through the early thirties; comparative stability thereafter until the forties, when there was a significant decline; increase in yields per hectare until the late twenties (see Charts 8 and 9).

4. In Europe, except for the declines during the two war periods, relatively little change in area or production.

The principal features of world trade in coarse grains are:

1. Slow recovery after World War I of Europe's imports, which is the principal demand, to the 1909-13 level; slight decline in the latter thirties; in 1945-48, imports at little more than half the prewar level.

2. A fall during the interwar period to 1.5-3 million tons in exports from [illegible] countries which, before World War I, exported ab[illegible]

3. The filling of [illegible]

extent, by Canada and from 1925 onward by Argentina, which came to contribute more than 50 percent of world exports but with great fluctuations from year to year.

4. Gradual decline in United States exports as a result of increased domestic demand and later a succession of drought seasons; some expansion after World War II to narrow the gap caused by the great reduction in Russian, Danubian, and Argentinian exports.

5. Decline in Canada's exports from 1 million tons in the twenties to half this volume in the thirties; large exports during World War II to the United States, and subsequently a falling back to the prewar volume.

Considering the world as a whole, the volume of grain exports has been remarkably stable over the past 40 years. Within this framework, however, there have been many shifts in the roles of individual exporting countries, the most remarkable flexibility having been shown by the United States which has twice expanded its exports enormously to meet a great need. In respect of production, the most striking feature in the world picture has been the increased yields per unit of area in the United States over the past 10 years. To a lesser extent the same has happened in Argentina over a longer period in respect of wheat, but nowhere else are significant and substantial trends discernible in either area or yield.

2. RICE

REDUCED PRESSURE of import demand on the relatively low exportable supplies is the most significant development in the world rice situation for the current year.

High prices of rice in the face of declining prices of wheat in the world markets, in combination with the low purchasing power of rice consumers, have tended to shift some of the Far Eastern import demand in the past three years from rice to cheaper food grains. The slow rate at which abandoned rice lands have been restored to cultivation in some of the exporting countries contrasts with the expansion of area under food crops in the importing countries. In some of the latter, however, rice production has apparently failed to increase in the same proportion as the planted area.

The programs and projections of the food-deficit countries of the Far East, which currently account for 80 percent of world rice production and trade, call for expansion in area both of rice and of other food grains, and in some instances also higher yields per hectare. According to the programs reported by governments (and projections for those that have not reported) world export supplies of rice in 1950/51 will be more than one-third greater than in 1948/49. The rice-importing countries, however, do not expect to increase their rice imports appreciably over 1948/49. Thus there is a possibility that large stocks of unsold rice may pile up in the Asiatic exporting countries unless a reasonable parity of export prices of rice and other competing cereals is restored in the near future. But there are also several factors that might prevent complete achievement of the projected increase in exportable supplies, including a continuation of disturbed political conditions in some countries, failure to obtain sufficient fertilizer and other production requisites, and in some cases inability to increase transportation facilities.

Current Position

World production and consumption of rice have not yet reached the prewar level. Despite an increase of 3 percent over the prewar area under rice, world production in 1948/49, estimated at 144 million tons in terms of paddy, is 2 percent below the prewar average. Production has exceeded the prewar level everywhere except in Europe and Asia. In Asia, though total production (estimated at 135 million tons) shows an increase of 2 million tons over the previous year, it falls short of the prewar average by 7 million tons (equivalent to nearly 5 million tons of cleaned rice). Since the reported area under rice in Asia has more than recovered the prewar level, the estimated deficit in production is perhaps open to question. Not only do the systems of crop reporting in Asiatic countries usually lend themselves to an underestimation of production, but the probability of such underestimation is greater under existing conditions of shortage, one of the major contributory factors being the tendency of the rice growers to understate yields in order to reduce their liability to deliver grain surpluses to the government at controlled prices.

As compared with prewar, the 1948/49 rice area in India has increased by 10 percent, whereas the estimated production shows a decline of 2 percent. In Pakistan, likewise, the percentage increase is higher in area than in estimated production. The rice economy of South China has been strengthened by the recovery of production in the rice-surplus province of Taiwan (Formosa). However, recent floods and political developments in Central and South China may have changed the picture for that

TABLE 23.—ESTIMATED WORLD AREA AND PRODUCTION OF RICE, PREWAR, 1946/47, 1947/48, AND 1948/49

Region	Area				Production (paddy)			
	1934/35-1938/39	1946/47	1947/48	1948/49	1934/35-1938/39	1946/47	1947/48	1948/49
	(*Million hectares*)				(*Million metric tons*)			
Far East	79.7	77.6	79.1	80.0	140.5	129.9	132.1	133.7
Near East	0.6	0.7	0.8	0.8	1.3	1.8	2.0	2.1
Europe (excl. U.S.S.R)	0.2	0.2	0.2	0.3	1.1	0.8	0.9	1.1
North America	0.4	0.6	0.7	0.7	1.0	1.5	1.6	1.7
Latin America	1.3	2.5	2.4	2.3	2.0	4.0	3.9	3.6
Africa and Oceania	1.5	2.3	1.9	1.9	1.5	2.1	2.0	2.0
WORLD TOTAL (excl. U.S.S.R.)	83.7	83.9	85.1	86.0	147.4	140.1	142.5	144.2

TABLE 24.—INTERNATIONAL TRADE IN RICE (MILLED BASIS), 1934-38, 1947, 1948, AND RECOMMENDED ALLOCATIONS FOR 1949

Region	1934-38		1947		1948		FAO allocations recommended, 1949	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
	(*Thousand metric tons*)							
Far East[1]	8,076	6,267	1,609	1,942	2,367	2,815	2,615	2,828
Near East	125	52	198	33	337	55	348	87
Europe (excl. U.S.S.R.)	183	1,262	0	44	29	126	148	380
North America	68	31	445	21	384	17	465	20
Latin America	94	364	294	438	346	294	217	277
Africa and Oceania	18	397	18	76	21	170	20	47
Unspecified	–	–	–	10	–	7	–	174
TOTAL	8,564	8,373	2,564	2,564	3,484	3,484	3,813	3,813

[1]Includes estimated rail- and river-borne trade between India and Pakistan.

country. Rice production in Japan, Malaya, and the Philippines has exceeded the prewar level, and a substantial recovery is also reported from Indonesia and South Korea. Production of other food grains in many of these rice-deficit countries has increased at a relatively faster rate than rice. The reported production of wheat, maize, barley, and oats in 1948 in the rice-deficit countries of Asia as a whole is greater by more than 3 million tons than the prewar volume. Since the continent of Asia has stopped exporting wheat as it did in prewar years and is now importing on a substantial scale, it is estimated that the total supply of these food grains in the rice-deficit countries has exceeded the prewar availability by about 9.5 million tons. Statistics on production of millets (including sorghum) are not available for many countries, although these hardy grains are important sources of food calories in some parts of Asia.

Postwar recovery of rice area and production in the exporting countries of Asia has been comparatively slow, one of the major limiting factors being the inadequacy of incentive payments to growers either in cash or in kind. In Burma and Indo-China the restoration to cultivation of rice lands abandoned during the war continues to be retarded by political unrest and civil disturbances. In Thailand conditions for expansion are relatively favorable. Production is continuing to expand in Egypt, although rice competes with cotton for the limited land and water resources.

Rice cultivation in the United States and other surplus-producing countries of the Western Hemisphere appears to have reached its postwar peak. Difficulties of disposing of exportable supplies at remunerative prices have apparently led to a restriction of rice area and production in Brazil. The tendency of the Far Eastern import demand to shift from rice to cheaper food-grains exportable from the hard-currency areas and the emergence of many prewar rice-importing countries of Latin America as self-sufficient units have set a problem of agricultural adjustment for the major rice-surplus areas of the Western Hemisphere. These countries are now faced with the alternative of substantially reducing rice production costs or of diverting rice lands to other export crops.

World trade in rice in 1948 improved considerably over the previous year; but total exports, amounting to 3.5 million tons, were still 60 percent below the prewar average. Supplies available for export in 1949 show only a slight increase over the declared export availability in the previous year. Total export availability from Southeast Asia (Burma, Indo-China, and Thailand), estimated at 2.6 million tons in 1949, is appreciably larger than the reported shipments from these countries in the previous year, but falls short of their prewar annual exports by 3 million tons. In addition, Korea (which formerly exported 1.2 million tons) is hardly exporting at all, while Taiwan's exports (formerly 600,000 tons) are now part of China's "indigenous" production. Because of the relatively higher prices and balance-of-payment problems, shipments of rice from the Western Hemisphere in 1949 may be considerably less than the declared export availability of nearly 0.7 million tons. Exportable supplies of rice from Italy in 1949, estimated at 148,000 tons, show a gain over the reported shipments in 1948. Since international allocation recommendations provide for exports of 0.4 million tons to Europe and 0.5 million tons to other non-Asiatic destinations, the rice-deficit countries of the Far East may receive in 1949 not more than 2.9 million tons, or about the same quantity as in 1948. This represents a decrease of 3.4 million tons or 54 percent from the prewar net imports, mainly affecting India and Japan.

The critical shortage of rice over a protracted postwar period has forced prices to very high levels. Export prices have been advanced faster in the low-cost producing areas of Southeast Asia than in the high-cost producing countries of the Western Hemisphere. This has resulted in some narrowing of the price differentials among rice-exporting countries, though United States and Latin American export prices are still the highest.

In exporting countries of Asia, since the prices paid to growers are fixed at a relatively low level in line with domestic rice prices, the high prices charged by governments for rice exports have increased government revenues at the expense of the consumers of imported rice. Indeed, in the deficit countries of the Far East without heavy subsidy payments by governments, imported rice is at present far beyond the reach of most needy consumers. To give an instance, the landed cost of Burma rice at Calcutta, which averaged £6.5 per metric ton in 1938, rose to £45.5 in 1948. In order to equate the retail sale prices of domestic and imported rice, the Indian Government paid a subsidy of £12.5 per metric ton of rice imported. The price differentials between domestic and imported rice in India have tended to increase in 1949 as the inflationary pressure on domestic food prices is being checked.

Export prices of rice in 1948 were generally six to seven times as high as in 1934-38. Because of the shortage, rice prices have risen more sharply in recent years than in the years following World War I, while the inflationary pressure on commodity prices in general was less severe in 1948 than in 1920. Or again, as compared with the export prices ruling in the depression period of the thirties, the 1948 prices

TABLE 25.—RICE PRICES IN SELECTED EXPORTING COUNTRIES

Country	Description	1936-40	1948	First semester 1949
		(*U.S. dollars per 100 lb. export quality*)		
U.S.A.	Long grains, 35 percent broken, f.o.b. New Orleans	3.00	12.70	8.60
Brazil	Japanese 1st grade, f.o.b. Rio Grande do Sul	2.50	8.60	8.55
Burma	Small mills special, f.o.b. Rangoon	1.47	6.84	6.84
Indo-China	Round white, 25% broken, f.a.s. Saigon (excl. export tax)	1.66	6.96	6.96
Thailand	White No. 1, 35% broken, ex mills Bangkok (excl. export tax and cost of gunnies)	1.35	6.30	6.30

SOURCE: Office of Foreign Agricultural Relations, U. S. Dept. of Agriculture (excepting Burma rice prices).

TABLE 26.—PRICES OF RICE AND WHEAT, PREWAR, 1947, 1948, AND 1949

Date	Burma rice (Small mills special, f.o.b. Rangoon)	Canadian wheat (Basis No. 1 Northern in store, Port William/Fort Arthur—exportable to non-mutual aid countries)
	(*U.S. dollars per metric ton*)	
Prewar	32.4	35.2
1947	132.2	103.7
1948	150.7	95.5
1949 (Jan.-June)	150.7	80.5
1949 (July)	150.7	74.9

showed a tenfold increase. As Table 26 shows, the price spread between rice and wheat in the world markets, which had widened to an unprecedented extent in the first half of 1948, has widened further still with the declining trend of wheat prices since the middle of the year.

This resulted in greater consumption of wheat and coarse grains in the rice-deficit countries. Imports of cereals other than rice into the Far East have risen to the record total of 7 million tons in 1948/49. If the price disparity between wheat and rice continues, imports of wheat and coarse grains into the Far East may be equally heavy in 1949/50.

Long-term Trends and Future Outlook

No world production figures of any reliability are available over a long series of years. However, various evidence suggests that between 1909-13 and 1934-38 production probably increased by about 12 to 15 percent. World War II caused a severe setback to production in Burma, China, and Indo-China and an increase of 70 percent in the Western Hemisphere. Yields per hectare showed no discernible trend up to World War II except in Japan, where they increased steadily; they have declined during the postwar years in some countries, notably India. The Indian yield is now half that of the United States, one-third that of Japan, and one-quarter that of Italy.

Some of the major deficit countries of Asia are now aiming at national self-sufficiency in their planning of agricultural production. Similar programs initiated under a different set of circumstances during the economic depression of the thirties seriously reduced import demand for rice in Indonesia, the Philippines, and some other areas. However, an expansion of import demand in Ceylon, India, Malaya, and France, stimulated by low prices prevailing at that time, helped to maintain the level of rice exports from Burma, Indo-China, and Thailand.

For many decades before the war, rice production in Asian countries other than Japan was expanded by extending the planted area rather than by improving traditional cultural practices. The potentialities for further extension of the rice area in many Asian countries are by no means exhausted. The area under rice in India and Pakistan has increased by 3 million hectares over prewar, though much of this expansion has been brought about by diverting cultivated land from nonfood crops. In the rest of Asia there are 3 million hectares of prewar rice lands yet to be brought under the plow, chiefly in Burma, China, and Indo-China. But the fact that Japan raised the hectare yield of rice by more than 50 percent in the course of four decades has inspired provisions for a substantial increase in yields by similar methods in all recent long-term plans for expansion of rice production in the deficit countries.

The production programs of the rice-deficit countries of the Far East envisage an increase of 2 million tons in indigenous rice supplies within the next two years. This modest increase in rice output by 1950/51 is feasible even on the basis of the existing planted area, provided that the hectare yields in the Indian subcontinent are partially restored to the prewar levels. The programs also envisage an increased output of about 1 million tons of wheat and about the same quantity of other cereals. Total imports in the Far Eastern countries in 1950/51 may amount to 3 million tons of rice as against 3.6 million tons of wheat. The prospective supply situation in the rice-deficit countries is shown in Table 27.

TABLE 27.—SUPPLIES OF RICE AND OTHER CEREALS, RICE-DEFICIT COUNTRIES OF THE FAR EAST[1]

Item	Rice (cleaned basis)			Wheat, maize, barley, and oats		
	Prewar	1948/49	1950/51 (Targets and projections)	Prewar	1948/49	1950/51 (Targets and projections)
	(*Million metric tons*)					
Production	85.8	2.5	84.6	61.6	64.8	66.3
Imports	+4.5	+2.8	+3.0	+1.3	+7.0	+4.0
Exports	—0.2	–	–	—0.6	–	–
TOTAL AVAILABLE SUPPLIES	90.1	85.3	87.6	62.3	71.8	70.3

[1]Excluding millets. Prewar production of millets, sorghum, and other miscellaneous coarse grains in the Far East is estimated roughly at 36 million tons.

In 1950/51 total supplies of rice, wheat, and maize available to the Far East (after allowing for exports and imports) might be 158 million tons compared with 152 million prewar. Even allowing for some expansion in millets, about which little is known, this would not restore the per caput grain availability in the Far East to prewar levels. Moreover, in countries lacking transport facilities, an increase in agricultural production is not synonymous with increased availability of food. Because populations migrated on a vast scale in recent years from surplus to deficit areas and from rural areas to urban centers, the shortage of rice and other food grains has varied in its intensity from country to country and from one part of a country to another. Without still higher production or increased imports, food consumption in 1950/51 in many urban and rural areas of the Far East may not be above the low levels of 1948/49.

International trade in rice, which grew from 4.7 million tons in the early twenties to 8.2 million tons in the late thirties, is unlikely to recover very rapidly (India, China, and Japan, which absorbed more than half of the prewar world exports, are together importing 3 million tons less than prewar). However, by 1950/51, exports from Southeast Asia should increase by 1 million tons, or more than one-third, while further increases are expected from Egypt and the Western Hemisphere. On the import side, the deficit countries of Asia are striving to reduce their dependence on imports; Europe may take less than half its prewar average of 1 million tons, of which a substantial proportion was used as animal feed on account of its cheapness.

There remains the question whether, in the event of a material reduction in rice prices, the deficit countries of Asia would shift some of their import demand from wheat and coarse grains to rice. Asian countries have been forced to import over 7 million tons of cereals other than rice, mainly from hard-currency areas, in 1948/49 as against 1.2 million tons prewar. As the export availability of rice from Southeast Asia increases, and a reasonable parity between export prices of rice and wheat is reestablished, a substantial substitution of rice for wheat in Asian imports is likely to occur. Ceylon, China, India, and the Philippines, together with Hong Kong and Malaya (through the United Kingdom), are obligated under the International Wheat Agreement to take from 1.5 to 2 million tons of the cereal annually for four years as compared with their current imports of 4 million tons. Japan, at present importing less than 2 million tons, is not so obligated, being a United States Government responsibility, but will depend on United States shipments. The possibility of substantial supplies of unsold rice accumulating in the exporting countries is therefore bound up with the prospective price relationship between rice and other cereals in the world markets.

Should rice prices begin to decline, the high-cost exports will naturally be affected first; in fact, some of the surplus-producing countries of the Western Hemisphere are already in difficulties. The Asian low-cost producers are in a position to make up much of the reduction in their receipts from rice exports by increasing the volume of rice shipments.

3. SUGAR

THE YEAR 1949 marks a turning point in the postwar history of sugar. The period of sugar shortages, which began in 1942, has ended. Furthermore, the 1948 crop provided indications of the nature of the prospective sugar problem—indications which the 1949 crop is likely to substantiate. Table 28 shows the distribution of world sugar production by continents, as compared with prewar.

One of the outstanding features of the 1948 production picture was a marked increase in European output. The 1948 crop (excluding the U.S.S.R.) of close to 6.9 million metric tons (raw value) exceeded the 1934-38 average and it was more than 2 million tons above the 1947 output. The greater domestic production, as compared with the past few years, enabled many of the European importing countries to increase consumption. They became less dependent on imported supplies, and especially on dollar area supplies.

Another feature of the 1948 production picture was the continued production lag in some of the major prewar exporting countries outside the Western Hemisphere. Of the major Far Eastern exporters, Taiwan (Formosa), the Philippine Islands, Java, and Madura, which before the war used to export about 2.3 million tons—only the Philippines made substantial recovery; and even Philippine exports in 1949 were only about half of prewar. However, the production in other major Far Eastern exporting areas—Australia, Fiji, the Hawaiian Islands—was practically the same as in the last prewar years.

Moreover, Western Hemisphere production more than compensated for the decline in Far Eastern supplies. Although the 1948/49 Cuban production of 5.2 million tons was lower than that of the previous year (reduction in Havana and Matanzas provinces), it was still nearly double the average crops of 1930-39. No less significant was the production increase in Brazil and Mexico. Taking the Western Hemisphere as a unit, production increased from about 9.0 million tons in 1934-38 to 13.2 million tons in 1948/49. Table 29 sets forth the changes, as compared with prewar, in the production and exports of the major sugar exporting countries of the world.

Indications are that notwithstanding the substantial increase in world production, carry-over stocks at the end of 1949 will not be burdensome. Consumption increased in many areas—even in the eight or ten European countries which still rationed sugar —and such stock increases as will have taken place will not be burdensome and will not weigh heavily on the market. The large 1948 crop had the inevitable effect on prices, and fluctuations at the beginning of the year were considerable; but high European demand, made effective through ECA financing, and a substantial purchase of

TABLE 28.—SUGAR PRODUCTION BY CONTINENTS (RAW VALUE)

Continent	1934-38	1947/48	1948/49
	(*Thousand metric tons*)		
Africa	1,170	1,439	1,485
Asia	9,230	7,613	8,204
Europe (excl. U.S.S.R.)	6,498	4,439	6,694
North and Central America	6,900	10,897	9,962
South America	2,133	3,158	3,274
Oceania	1,834	1,545	1,962
World total (beet)	7,967	6,373	8,228
World total (cane)	19,798	22,718	23,353
WORLD TOTAL (excl. U.S.S.R.)	27,765	29,091	31,581

TABLE 29.—SUGAR PRODUCTION AND EXPORTS OF MAJOR EXPORTING COUNTRIES, PREWAR AND 1947/48

Country	Production		Exports	
	1935-39	1947/48	1935-39	1947/48[1]
	(*Thousand metric tons*)			
Cane Sugar Exporters				
Brazil	1,051	1,720	20	254
Cuba	2,888	6,056	2,664	6,189
Dominican Republic	445	422	336	344
Peru	406	483	297	321
Netherlands Indies	1,313	91	1,100	60
Philippines	1,022	452	806	[2]252
Mauritius	291	350	282	340
Australia	811	613	397	143
British Guiana	190	171	182	145
Trinidad and Tobago	134	118	133	81
Barbados	121	58	89	82
Reunion	83	95	75	5
Jamaica	108	196	92	176
Mozambique	72	79	66	[3]49
Union of South Africa	452	533	199	[3]10
Fiji	130	142	131	144
Puerto Rico	884	1,003	793	1,013
Hawaii	894	790	884	[2]714
Mexico	330	650	0	100
TOTAL OF ABOVE	11,625	14,024	8,646	10,422
Beet Sugar Exporters				
Czechoslovakia	654	[4]351	213	98
Germany	1,925	[4]782	8	–
Hungary	126	69	20	–
Poland	497	[4]550	81	161
TOTAL OF ABOVE	3,202	1,752	322	259

[1]September 1947-August 1948.
[2]Calendar year.
[3]Preliminary.
[4]Postwar boundaries.

Cuban sugar by the United States Government for distribution in Germany and Austria stabilized the world market in the spring of 1949 at about 4 U.S. cents a pound. It is significant that from 1 October 1948 to 31 May 1949 the United States Government made available, through ECA alone, a total of $141 million for the purchase of sugar and related products.

The slowness of Far Eastern exporting countries to rehabilitate their prewar production and exports has given the Western Hemisphere producer another year of relative prosperity. While indications are that the price of 4 cents a pound which pre-

vailed on world markets was not greatly above the cost of production, allowing for the increased cost of other foods and industrial goods, the large quantities of sugar produced and exported made possible a relatively high degree of prosperity in the sugar islands. Most of the shortfall of about 425,000 tons in the Philippine quota shipments to the United States in 1949 was allocated to Cuba, as well as the shortfall in the U.S. domestic production. In addition, Western Hemisphere countries had a much larger share of the European markets than in prewar years.

Cuban exports (see Table 30) to countries other than the United States during the crop year September 1947/August 1948 totaled 3.2 million metric tons, as compared with an average of about 1 million tons in 1938/39. These exports will be considerably lower during the current year, but still substantially above the prewar average.

Unfortunately, the 1949 equilibrium is obviously a precarious one and present indications are that, on the balance, its continuation during 1950 cannot reasonably be expected. Although it is too early to assess the 1949 crop, indications are that total world production will be higher than in 1948. In this connection it must be borne in mind that the price and market effects of changes in supply or demand (and especially in the supply of, or the demand for, marginal "dollar" sugar) are likely to be out of proportion to the quantities involved. While European countries will be able to utilize dollar resources made available through ECA to purchase indispensable sugar imports, crop prospects indicate that Europe's own domestic production may be about 300,000 tons higher than last year. A slightly larger crop is indicated in the United States. The continued efforts to increase production in overseas territories of European countries, notably in the French Union and in British colonial territories, are beginning to bear fruit, and supplies from these soft-currency areas will probably be higher. More important still, perhaps, is the anticipated increase in Far Eastern production.

The production potentialities of the Far East must of course weigh heavily in any analysis of the outlook for 1950/51 and beyond. It is reasonable to assume that both Java and the Philippines will contribute substantially more to world exports than during the current year. While further increases in area and production in Europe are likely to be comparatively small, the programs submitted by Western European countries to OEEC do contemplate production increases. Nor can it be

TABLE 30.—CUBAN SUGAR EXPORTS, 1938/39 AND 1947/48 (RAW VALUE)

Country	1938/39	1947/48
	(*Metric tons*)	
United States	1,606,114	2,951,788
United Kingdom	670,529	871,884
France	92,126	135,820
Belgium	118,215	141,928
Netherlands	27,323	219,659
Norway	20,268	10,872
Sweden	11,177	20,055
Switzerland	21,882	71,001
Canada	1,365	157,206
Central and South America	17,152	57,364
Africa	33,752	35,990
U.S. for refining and re-export	22,706	30,034
Other exports	14,949	[1]1,485,575
TOTAL	2,657,558	6,189,176

[1]Includes 654,267 for Germany, 465,805 for Japan, and 175,111 for Italy.

TABLE 31.—WORLD PRODUCTION OF CANE AND BEET SUGAR (IN TERMS OF RAW SUGAR), 1853/54 TO 1935-39

Year	Total	Cane	Beet
	(*Thousand metric tons*)		
1853/4	2,483	2,282	201
1863/4	2,952	2,517	435
1873/4	4,530	3,290	1,249
1883/4	7,296	4,860	2,436
1893/4	9,817	6,006	3,811
1903/4	12,545	6,666	5,879
1913/4	19,615	10,744	8,871
1925-29	26,700	18,100	8,600
1930-34	27,100	17,800	9,300
1934-38	30,065	19,798	10,287

SOURCE: *Report on the Sugar Beet Industry at Home and Abroad.* U.K. Board of Trade, 1931, for pre-World War I figures.

assumed that world consumption will keep pace with the production increase and maintain the market equilibrium of 1949. On the contrary, the policies to increase production, domestically and in overseas dependent areas, are motivated by the desire to conserve foreign exchange, and especially dollar exchange, notwithstanding the fact that such sugar is more costly than imported "free" sugar (sometimes almost double the price of Cuban sugar).

Except in the United States, no major economies in beet-sugar production have been developed during the past decade or more. In the United States a number of developments—especially the improvements in mechanical harvesting—have reduced production costs; but improvements in varieties of beets themselves have been comparatively small during the past decade. It is doubtful whether all of the mechanical developments could be applied to the smaller beet fields of European countries.

Long-term Trends

Some of the developments during 1947-49 indicate an intensification of the trends and policies that undermined the world sugar market between the two world wars and that led to the steep decline in prices which produced poverty and unemployment in most of the major exporting countries.

The nineteenth century was characterized by steady and continuous growth in the production of both cane and beet sugar. Stimulated by government bounties, beet-sugar production expanded rapidly during the last quarter of the nineteenth century and the first decade of this century, especially in Europe. But cane-sugar production moved almost as rapidly. The removal of some bounties to beet sugar and improvement in methods of cane-sugar manufacture and of cane cultivation and breeding enabled cane to forge ahead rapidly during the decade before World War I. Although production more than doubled between 1893 and 1913, increasing from 9.8 million tons to about 19.6 million tons, prices remained relatively stable. The average price of raw sugar in public warehouses in Cuba fluctuated between 2.4 and 2.8 cents a pound. In only three years between 1900 and 1914 did the average price decline below 2 cents a pound.

The equilibrium was decisively upset by World War I. Denied access to its prewar supply sources in Germany and Austria, the United Kingdom had to turn to Cuba to fill the gap. Cuban production was expanded also to meet unprecedented requirements from the United States and to offset the decline in production in France and other European countries. By the end of World War I, Cuban production had doubled. In the meantime, production in the Far East also began to climb rapidly. At the turn of the century Java produced about 800,000 tons of sugar (raw value); production doubled in 20 years, and by 1928 it exceeded 3 million tons. After World War I European beet production recovered rapidly and cane production increased in the United States protected areas. Technical improvements brought about great increases in the per hectare yield of sugar in Hawaii, Java, and Fiji; there was little change in Cuba. Table 31 shows the development of cane and beet production between 1853/54 and the beginning of World War II.

While production expanded rapidly in sugar-exporting areas, far-reaching changes were taking place in sugar-importing countries. Programs to increase domestic production were launched everywhere. The increase in European beet production has been pointed out; no less significant similar policies were pursued in other areas. India, which had provided a market for close to a million tons of Java sugar annually, extended protection to domestic industry, which soon replaced imports. During the period 1934-38, total imports into India declined to about 100,000 tons a year. In Asia as a whole, annual imports dropped from 2.3 million tons during 1925-29 to about 700,000 tons during 1934-38.

It was inevitable, under the circumstances, that prices should decline and stocks accumulate. Indeed, the price of sugar fell to less than 1 cent per pound during 1931-33, as compared with an average of 2.5 cents in the period 1885-1914. The cheapest producing areas had to institute production controls, which were only partly successful in alleviating the situation, since high cost producing countries continued to expand domestic production. The International Sugar Agreement stabilized the position without improving it.

History has been repeating itself during the last few years. During World War II, as during World War I, Cuba greatly expanded production to supply sugar for the United Kingdom and the United States, which had lost its Philippine supplies. At the same time, production began to increase in other Western Hemisphere countries. The demand for Western Hemisphere supplies remained at a high level until 1949. However, as after World War I, European beet production has recovered; indeed, as pointed out previously, efforts to assure self-sufficiency are greater than ever. While production expanded rapidly in the Far East after World War I, efforts have been made since World War II to expand production in the colonial overseas territories. It is only the failure of some of the Far Eastern producers to regain their prewar production levels that has forestalled a collapse of the sugar market until now.

Restrictions on international trade in sugar promise to become more severe than they were in prewar years. Even in the last prewar year, when the International Sugar Agreement was in operation, requirements for "free" world supplies (that is, markets not protected by preferences or other special arrangements) amounted to only slightly more than 3 million tons as compared with world production of over 30 million tons. The tendency in the postwar years has been to reduce further the free market requirements. The major "bloc" which emerged between the wars in the world sugar trade has become more significant.

First, from the standpoint of magnitude, is the United States market, with a consumption of 6.5 to 6.8 million tons. (It should be pointed out parenthetically that United States per caput consumption has not recovered to the prewar level notwithstanding the enormous increase in national income, although it is too early to say whether this represents a change in the national consumption pattern.) Under the Sugar Act of 1948, definite quantities of the United States market continue to be reserved to domestic and off-shore producers, including Puerto Rico, the Virgin Islands, Hawaii, and the Philippines, while Cuba is assigned over 90 percent of the remaining import requirement. Imports from other areas thus become residual quantities (70,000 tons out of an import of 4.8 million tons in 1947/48). In point of fact, United States takings from free market supplies would be even smaller had no ceiling been placed on domestic production.

The second large trading unit is the British Commonwealth and related territories, which account for some 3.2 million tons. Because of increased production and rationed consumption within the United Kingdom, this area is currently taking about 950,000 tons from the free market, compared with nearly 1.3 million tons prewar. Commonwealth policy, however, aims at gradually achieving greater self-sufficiency within the area and eliminating the need to import so much from outside.

The French Union, which consumes some 1.2 million tons, formerly took 225,000 tons from other sources. Planned increase in production in France itself, as well as in some colonies, would eliminate that import. Likewise some smaller countries which import "free" sugar are expanding domestic output.

On the supply side, not only Cuba but other countries, such as Mexico, Brazil, Poland, Denmark, have increased supplies to offer on the free market. The Philippines plans a much larger export than prewar, though its preferential quota in the United States market diminishes each year, according to treaty. Java and Taiwan (Formosa) plan to recover their export business. The inescapable conclusion is that within a short time a larger than prewar supply of "free" sugar will be placed on a smaller than prewar "free" market.

Under such a threat of burdensome surplus, it is easy to say that a new International Sugar Agreement should be negotiated, but as yet the governments are not clear as to what provisions such an agreement should contain. For behind any outward forms there remain the real problems of (a) sharing equitably the burdens of any readjustments necessary, (b) helping countries to find alternative lines of production and export, and (c) progressively stimulating sugar consumption in areas where it is still very low.

4. FATS AND OILS

EXPANSION OF FATS AND OILS PRODUCTION, already noted in last year's *State of Food and Agriculture*, continued through 1949, bringing the total world supply up to about the prewar level. Improvement has been general, except in Southern Europe. On a percentage basis, the greatest gains have been made in Indonesia and Africa; on a tonnage basis, in North America and the U.S.S.R. The progress achieved, however, has not eliminated substantial differences as between countries or continents. Thus,

TABLE 32.—INDIGENOUS PRODUCTION OF FATS AND OILS, POSTWAR COMPARED WITH PREWAR
(Calendar year availability as oil)[1]

Producing area	1947	1948	1949
	(*Prewar = 100*[2])		
Whaling (all areas)	66	69	70
Europe:			
North and West	69	81	87
Central	45	48	55
South and East	82	99	84
U.S.S.R.	52	64	76
America:			
United States and Canada	141	146	157
Argentina	87	70	81
Other	120	127	134
Africa:			
North and South	97	103	117
Other	96	105	112
Asia and Oceania:			
China (including Manchuria)	82	86	87
India and Pakistan	93	93	95
Indonesia and Malaya	53	65	83
Philippines	167	130	132
Australia and New Zealand	89	94	94
Japan	20	37	47
Other	84	98	101
TOTAL	88	94	99

[1]Some allowance has been made for seasonal movement of oilseeds from farm to processor and for changes in carry-over, particularly in the case of the highly seasonal olive oil crop.
[2]The prewar period relates mainly to 3-5 years ending in 1938; for China, however, 1931-37 has been taken, and for most of the Americas, 1935-39.

only Africa, the Philippines, and the Western Hemisphere (except Argentina) have a production higher than prewar. In the occupied areas of Central Europe and Japan, 1949 production reaches only half the prewar level.

As a result of the improved supply position, exports in 1949 are likely to increase by 9 to 10 percent over the 1948 volume. The Western Hemisphere (160,000 metric tons), Africa (90,000), and Indonesia (90,000) will contribute the most to this increase. Nonetheless, total world trade in fats and oils is still about 30 percent below the prewar average. Striking differences between the regions emerge; only the Philippines and North America are exporting substantially more than prewar. (U.S.-Canadian exports now roughly balance their imports.)

China, Manchuria, India, and Pakistan, which together exported 1.2 million metric tons (oil equivalent) prewar, may in 1949 export about 200,000 tons. Malayan, Indonesian, and British Pacific exports have fallen from 870,000 to 510,000 tons over the same period, and European exports (mostly to other European countries) from 600,000 to 230,000 tons.

In the "edible, soap" group of fats[1] the 1949 exports may be 10 percent above 1948 and 74 percent of prewar. Copra exports were slightly above the prewar total; groundnut exports 57 percent of prewar. On the other hand the tonnages of soybeans, cottonseed, sesame seed, and sunflower seed and oil likely to be exported in 1949 vary

[1]This covers all fats and oils except "special technical," i.e., linseed, castor, oiticica, tung, and perilla.

according to products from 20 to 35 percent of the prewar totals. Animal and marine fats should increase slightly over 1948, total exports reaching 70 percent of prewar, the shortfall being particularly in whale oil and butter.

In the "special technical" group, exports will be slightly higher than prewar for all the smaller items, but exports of linseed (shipped as seed), which dominates the picture, may be only 27 percent of prewar despite a large increase in 1949 as compared with 1948.

Taking together all seeds and oils of vegetable origin, the 1949 exports in the form of seed are about 69 percent, while those in the form of oil are 88 percent of prewar. This fact illustrates the increased seed-crushing activity in exporting countries.

As Table 34 shows, supplies available for consumption per person during 1948 were still substantially below the prewar level in a number of countries.

The improvement during 1949 raised the level of supplies in most of the countries where consumption had been most reduced. Nevertheless, the progress achieved is still quite inadequate, and the shortage of fats remains one of the most important food problems for several European countries. It may be noted that Europe during and since the war has cut back more on fats and oils for industrial than on those for edible use.

TABLE 34.—PER CAPUT SUPPLIES OF VISIBLE FATS AND OILS AS PERCENTAGE OF PREWAR, SELECTED

Source	1947	1948	1949
	(*Prewar = 100*)		
Europe (incl. U.S.S.R. and Turkey)	20	38	38
United States and Canada	268	306	330
Latin America	70	52	68
Africa	76	92	100
Oceania	68	77	80
Asia	45	46	50
(Philippines)	(181)	(125)	(126)
TOTAL	60	65	70

[1]In Tables 33 and 34 "prewar" refers in most cases to 1934-38, though for a few countries to other periods. Excludes re-exports, unprocessed or processed.

TABLE 34.—PER CAPUT SUPPLIES OF VISIBLE FATS AND OILS AS PERCENTAGE OF PREWAR, SELECTED COUNTRIES

Under 50 percent	50 to 75 percent	75 to 90 percent	90 to 100 percent	About 100 percent	Over 100 percent
Germany	Austria	Australia	Brazil	Cuba	Argentina
Japan	Czechoslovakia	Burma	Canada	India	Belgium and Luxembourg
	Denmark	Finland	China	Mexico	Ceylon
	Italy	France	Indonesia	New Zealand	Eastern Europe
	Netherlands	Fr. N. Africa	Spain	Pakistan	Egypt
	U.S.S.R.	Greece	Sweden	Portugal	Ireland
		Norway	Switzerland	Turkey	Malaya
		Poland	Thailand	Uruguay	Philippines
		U.K.	U.S.A.[1]		Union of South Africa

[1]Using 1937-41 as the prewar period of comparison. (Using 1935-39, there would be an increase of 3 percent.)

In the United States, by contrast, total edible supplies have increased 10 percent since 1935-39 and industrial supplies 30 percent.

In spite of an apparent world-wide shortage of fats and oils a change can be noted in the price trend from previous inflationary levels both in the internal markets of particular countries, notably the United States, and also in respect of products entering international trade, such as copra, groundnuts, and linseed. Some decline in the prices of the principal fats and oils took place between the beginning and the middle of 1949. This is reflected in the price index of vegetable fats and oils imported by the United States, which has fallen from 252 in December 1948 to 195 in July 1949. In the summer of 1948, heavy consumer restocking in the United States diminished, and was replaced by a growing consumer resistance. There were marked price declines in Philippine copra and Argentine linseed oil. Prices of domestic fats on the American market between 1 January and 1 June 1949 fell by 17 percent, but the drop was much larger for inedible tallow (49 percent) and lard (29 per cent), which had no price supports.

A large and probably major part of the supplies moving to Europe consists of colonial oils and oilseeds, which are largely controlled and marketed on a government-to-government basis, either at nominal prices or on special terms of trade, exchanging consumer goods for imported fats. Although precise data are not available, it is understood that the price levels of this large tonnage do not show the same inflationary increase over prewar as characterized the so-called "open" markets, and similarly may have remained steadier during the fluctuations of recent months.

It appears clear that a buyer's market is developing in some areas, e.g. in the United States and Europe, where, in the face of declining prices, difficulty is being experienced in moving supplies produced or purchased during the high-price period of 1948. One explanation of this apparent paradox of statistical deficits and market surpluses for some products is the stringent limitation of dollar and other hard-currency resources in soft-currency importing countries which normally absorb 70 percent or more of world export supplies.

Despite the fact that United States prices are now much lower than those in most other markets, there is little sign that the soft-currency importing countries feel justified in using more than a small proportion of their available dollar resources to buy fats from the dollar areas, even where fat consumption is well below prewar per caput levels and where some easing of austerity in this direction would be welcome. With the continuing and unsolved dollar-deficit problem, the prospects at present are that the demand for "dollar" fats on the part of the soft-currency countries will continue to be weak, even in cases where demand for soft-currency fats may still be well in excess of such supplies as are "freely" available. It may be that buyers in the importing countries, in anticipation of some further decline in dollar prices, are postponing or limiting their purchases from these sources, as well as awaiting clarification of the ECA position for the fiscal year 1949/50 so that some resumption or increase of purchases might possibly occur later in the year. On the other hand, as fats and oils prices still show a larger relative increase over prewar levels than most agricultural commodities, the high inflation caused by acute scarcity will probably be followed in due course by a corresponding readjustment downward.

TABLE 35.—PRODUCTION TRENDS IN PRINCIPAL VEGETABLE FATS AND OILS[1]

Class of fat	1909-13	1924-28	1929-33	1934-38[2]	1947-49[2] (estimate)
	(*Thousand metric tons, oil equivalent*)				
Herbaceous or bush crops:					
Groundnuts	1,150	1,975	2,480	2,240	2,425
Soybeans	620	1,645	1,865	1,275	1,530
Cottonseed	1,555	1,845	1,835	1,475	1,300
Rape and mustard	1,625	1,275	1,295	1,030	1,180
Linseed	940	1,265	1,185	1,110	930
Other	860	1,345	1,485	1,650	1,875
Tree crops:					
Coconuts[3]	385	800	915	1,870	1,825
Palm kernels[3]	145	240	250	350	340
Palm oils[3]	120	215	280	690	535
Olive oil	590	750	850	1,000	930
Tung and other nuts[5]	45	85	95	170	330
TOTAL	8,035	11,440	12,535	12,860	13,200

[1]In most cases the 1909-13 averages, and in many cases the averages for later periods, are very rough estimates.
[2]Adjustments have been made in these two periods but not in the earlier periods for unreported production, seed and waste, direct use of nuts as food, and seasonal movement and changes in carry-over.
[3]Production for domestic consumption is included only in 1934-38 and 1947-49. Net exports are shown for other periods.

TABLE 36.—TRENDS IN EXPORTS OF FATS AND OILS[1]

By Class of Fat

Class	1909-13	1924-28	1929-33	1934-38	1947-49 (estimate)
	(*Thousand metric tons, oil equivalent*)				
Liquid edible[2]	1,103	1,496	1,714	1,664	778
High lauric[3]	536	1,075	1,178	1,430	1,236
Semihard and marine[4]	510	750	973	1,303	911
Butter, margarine, lard, etc.	580	790	820	715	508
Technical[5]	550	809	804	850	462
TOTAL	3,279	4,920	5,489	5,962	3,895

By Regions

Region	1909-13	1924-28	1929-33	1934-38	1947-49 (estimate)
	(*Thousand metric tons, oil equivalent*)				
Europe (incl. U.S.S.R.)	456	505	562	601	176
U.S. and Canada	560	468	352	152	459
Latin America	309	688	692	752	479
Africa and Near East	498	844	904	1,065	959
India and China[6]	852	1,179	1,343	1,196	234
Other S.E. Asia and Pacific	396	877	1,014	1,438	1,028
Australia and New Zealand	118	157	214	258	217
TOTAL (excl. whaling)	3,189	4,718	5,081	5,462	3,552

[1]Excludes re-exports processed or unprocessed.
[2]Cottonseed, groundnut, soybean, rape, sesame, sunflower, olive, etc.
[3]Copra, coconut oil, palm kernels and oil, babassu nuts and oil.
[4]Palm and marine oil, tallow, etc.
[5]Linseed, castor, tung, oiticica, and perilla.
[6]Including Pakistan, Manchuria, and Korea.

Long-term Trends and Outlook for 1950/51

Between 1900 and 1939 the demand for fats and oils expanded markedly, particularly in the industrialized countries of Western and Central Europe, the United States, and the British Dominions. The increase in supplies was obtained partly through expanded production in these advanced countries, but the principal source has been imports from East Asia, the tropics, and Argentina. Between 1909-13 and 1934-38 consumption in the developed countries may have increased by about 55 percent (population by 25 percent), while consumption in the rest of the world (mostly underdeveloped countries) increased by about 35 percent (population by 20 percent). Per caput consumption has not regained the prewar level in either group considered as a whole.

Table 35 summarizes the changes in the production of certain fats and oils over the past 40 years. Statistical data on animal fats are too incomplete in the earlier periods to be included in the table. The products listed represented only 54 percent of world production in 1934-38, but covered by far the greater part of the quantities entering into international trade. Despite these limitations, the table shows that certain basic changes have occurred.

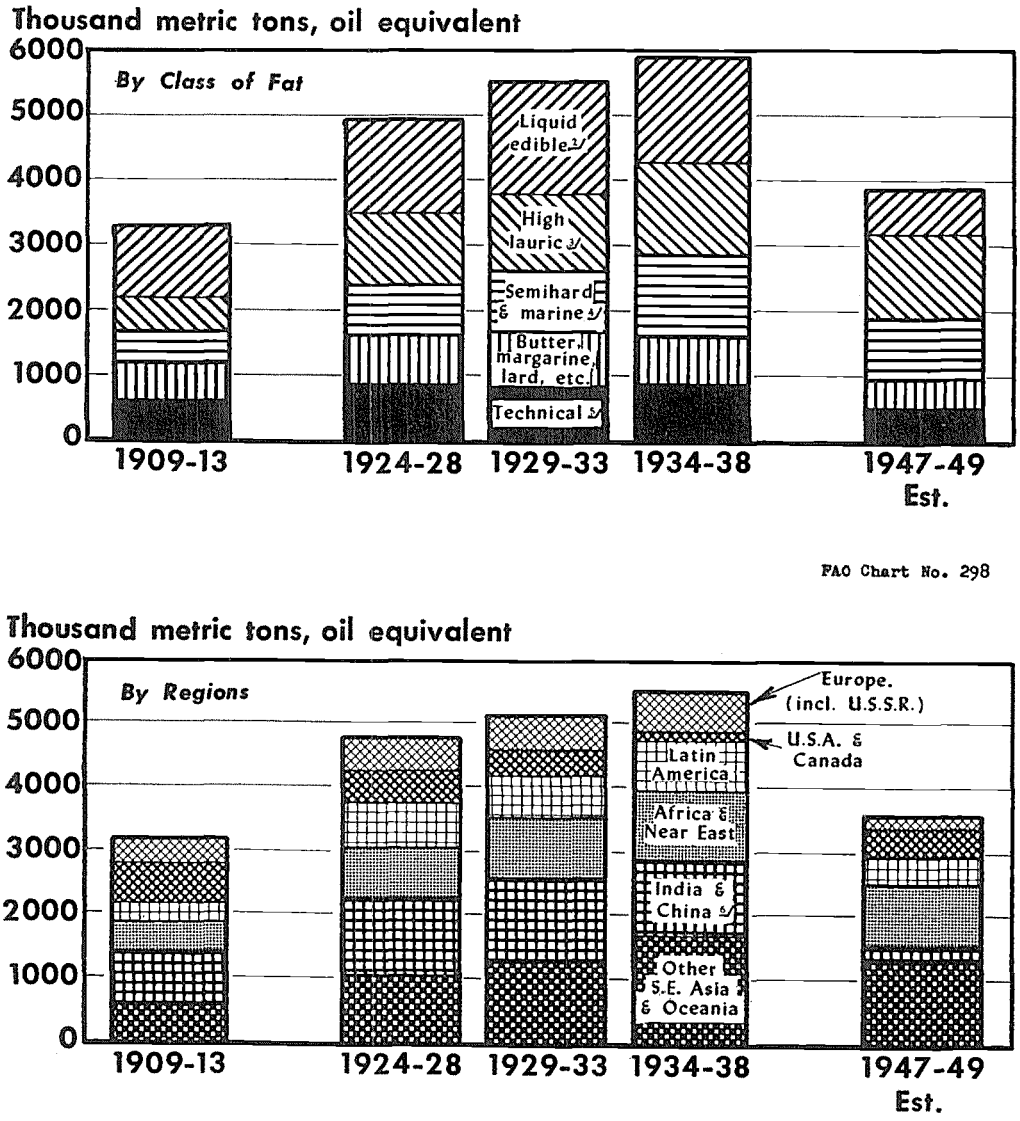
The greatest increase between 1909 and 1939 was in tree crops (copra, palm kernels and palm oil, olive oil, tung nuts, and babassu kernels), especially in coconuts (copra) and palm oil. Among the herbaceous and bush crops there is a large increase in groundnuts and soybean output, relative stability in cottonseed and flaxseed, and a decrease in rapeseed and mustard seed.

Table 36 and Chart 10 summarize the trends in exports by classes of fats and by sources of supply. Within the liquid edible group, the period 1909-38 saw a large expansion of groundnuts and soybean exports, while cottonseed, rapeseed, sesame. sunflower, etc., remained static or declined. As regards oils produced in the tropics or subtropics, exports and production show the same trend, since the production is overwhelmingly for export. Thus the "high lauric" exports, copra and palm kernels, registered a large expansion up to World War II, notably in the Philippines, Indonesia, Malaya, Ceylon, and central Africa. The same applies to palm oil (semihard). The expansion in marine oils consists of whale oil from the Antarctic and fish oil (mainly herring) from the North Pacific and North Atlantic,. Exports of butter, lard, other processed fats, and the technical oils expanded only moderately.

Considering exports by regions, the table demonstrates clearly that the great increase in output came chiefly from the Far East, Africa, and Latin America. Exports from the United States and Canada steadily declined until World War II. The Far Eastern export has, as already mentioned, been the most drastically reduced by World War II and, to a lesser extent, the export from Europe and Latin America has also declined. This has affected respectively the "liquid edible," the "butter-margarine-lard," and the "technical" groups, in each of which the 1947-49 exports were actually below the 1909-13 level.

Table 37 and Chart 11, showing retained imports by principal areas, emphasize the great importance of Europe in the trade and particularly of Germany and the United Kingdom. However, Europe's share in world imports declined somewhat—from 80 percent in 1909-13 to 70 percent before and after World War II—while the imports of the United States significantly increased. The United Kingdom is the only very large purchaser that is now importing again on the postwar scale.

Chart 10.—Trends in Exports of Fats and Oils[1]



[1]Excludes re-exports, processed or unprocessed.
[2]Cottonseed, groundnuts, soybeans, rape, sesame, sunflower, olive, etc.
[3]Copra, coconut oil, palm kernels and oil, babassu nuts and oil.
[4]Palm and marine oil, tallow, etc.
[5]Linseed, castor, tung, oiticica, and perilla.
[6]Including Pakistan, Manchuria, and Korea.

The outlook for 1950/51 depends substantially upon the state of demand in the two main consuming areas, Europe and the United States.

Europe's production of butter and slaughter fats is expected to be some 20 percent higher than in 1948/49. Its oilseed production is unlikely to expand much further than at present. National plans envisage an increase in imports of perhaps 400,000 tons (oil equivalent), principally from dependent overseas territories and

TABLE 37.—TRENDS IN RETAINED IMPORTS OF FATS AND OILS IN COUNTRIES AND REGIONS[1]

Imported into:	1909-13	1924-28	1929-33	1934-38	1947-49 (estimate)
	(*Thousand metric tons, oil equivalent*)				
Europe					
Germany	715	1,124	1,143	1,130	150
United Kingdom	989	983	1,119	1,215	1,185
Other	938	1,445	1,663	1,680	1,370
United States and Canada	202	574	703	937	630
Other areas	400	636	673	780	511
TOTAL	3,244	4,762	5,301	5,742	3,846

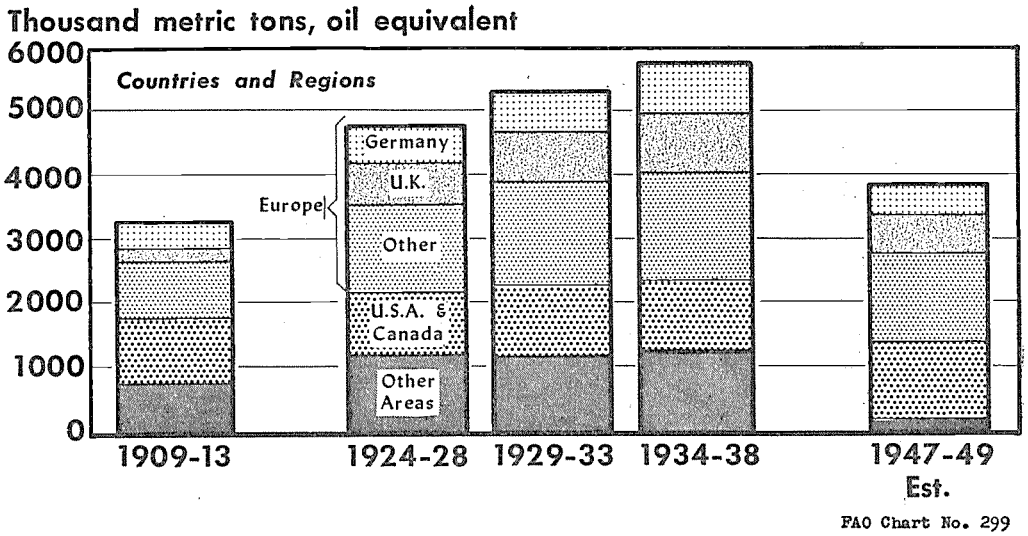
[1]Excluding (prior to 1947-49) castor, tung, oiticica, and perilla, for which the available information is insufficient.

the Far East. If these programs are fulfilled, total supplies will be more than 15 percent larger than in 1948/49. The major portion of the increase may go to Germany.

In the United States the outlook is for a decline in output of vegetable oilseeds and tallow and a substantial increase in production of lard. This may mean larger imports of linseed and linseed oil and will certainly mean much larger export availabilities of lard. Through ECA financing the United States should be able to find markets for a large part of its exportable surplus of lard and other fats, the prices of which are already considerable lower than corresponding prices in the soft-currency area.

Most other areas of the world produce chiefly for export and look either to the United States or the European market. Exports from the Far East should continue to recover gradually and those from Africa to expand somewhat. Accepting payment in soft currencies, these countries should have no difficulty in marketing all they may have available, though probably at prices lower than in the past four years. Difficulties will be encountered by high-cost producers and those requiring payment in dollars for their exports. The Philippines exemplifies this type of difficulty. Argentina has

Chart 11.—Trends in Retained Imports of Fats and Oils[1]



FAO Chart No. 299

[1]Excluding (prior to 1947/49) castor, tung, oiticica, and perilla, for which insufficient information is available.

had trouble in disposing of its export surpluses, but recent evidence suggests that it may be increasingly prepared to accept lower prices and softer currencies.

The over-all impression for 1950/51 is one of an easier supply situation, lower prices, and more advantageous buying terms. Increases in consumption may be slight in the high-consumption countries and more marked in Germany, Japan, and other areas still consuming at a rate significantly below the prewar level.

5. LIVESTOCK PRODUCTS

Production and Feed

PRODUCTION OF LIVESTOCK PRODUCTS in the major producing areas of the world changed very little in the first three postwar years. In Europe bad weather conditions and shortages of fertilizers and other farm requisites for feed production retarded livestock recovery. The severe drought of 1947, which affected most of Western and Central Europe, reduced livestock numbers and made recovery slow in 1948 in spite of good crops and good grazing conditions. As a result, Europe's output of meat and milk in 1948 stood at only 63 and 73 percent, respectively, of prewar.

In North America production has declined from the high levels attained during the war, but output of livestock products, particularly meat, remains considerably above the prewar level. Meat output in 1948 surpassed the prewar average by about one-third in the United States and by about 40 percent in Canada. Milk production in both countries, although lower than in 1947, was about 10 to 12 percent over prewar levels. In the principal livestock countries of South America production of meat and milk in 1948 was also considerably above prewar. In Oceania, it was still near the prewar averages.

Because of better feed conditions, output of animal products is expected to increase in 1949 in all major producing areas of the world. Preliminary indications point to a larger output of meat and milk in nearly every European country, in North and South America, and in Oceania, with the most important gains in Europe. In the United States total supply of concentrates in 1949/50 is expected to be about 8 percent greater than in the preceding year. In spite of a small increase in total animal units, particularly a larger pig crop, feed concentrates per animal unit will be about 5 to 6 percent above the record level of 1948/49, or about one-fourth higher than in the period 1937-41. A slight decrease in the hay supplies is expected, but the amount available per roughage-consuming animal unit is not likely to be much different from last year, when supplies were favorable.

The situation is likely to be much the same in Canada, where the number of feed-consuming animal units has been reduced by heavy shipments of cattle to the United States in 1948. In the South American countries and Oceania, livestock production is highly dependent on grazing; conditions in 1949 have been such that small increases in output are expected.

TABLE 38.—PRODUCTION OF MEAT, MILK, BUTTER, AND CHEESE, SPECIFIED AREAS, PREWAR,[1] 1947, 1948, 1949, AND 1950/51[2]

Area	MEATS[3]					MILK[4]				
	Prewar	1947	1948	1949 (estimate)	1950/51 (estimate)	Prewar	1947	1948	1949 (estimate)	1950/51 (estimate)
	(*Million metric tons*)									
Europe (excl. U.S.S.R. and Turkey)	12.2	7.7	7.7	8.5	10.0	102.7	70.7	75.6	82.8	93.4
Western and Central	7.8	5.0	4.8	5.4	6.5	72.0	52.8	56.5	62.1	69.8
Eastern and Mediterranean[5]	4.4	2.7	2.9	3.1	3.5	30.7	17.9	19.1	20.7	23.6
United States and Canada	8.5	12.3	11.3	11.5	11.7	54.6	63.1	61.2	62.4	63.0
Argentina, Brazil, Chile, Peru, and Uruguay	4.9	5.3	5.1	5.3	5.3	7.8	10.0	10.1	10.4	...
Australia and New Zealand	1.5	1.5	1.5	1.6	1.6	10.0	9.5	9.9	10.0	10.2
	BUTTER					CHEESE				
	(*Thousand metric tons*)									
Europe	1,670	1,041	1,142	1,260	1,440	1,490	950	1,100	1,185	1,385
Western and Central	1,300	870	946	1,040	1,180	835	525	645	690	810
Eastern and Mediterranean[5]	370	171	196	220	260	655	425	455	495	575
United States and Canada	1,144	904	844	940	930	344	591	539	604	586
Argentina, Brazil, Chile, Peru, and Uruguay	90	140	135	150	...	100	170	175	180	...
Australia and New Zealand	377	297	321	325	320	120	136	131	130	130

All prewar data adjusted to postwar boundaries.

[1]"Prewar" refers to 1934-38 for most countries, but for a few it refers to an average of three to five years between 1934 and 1939.

[2]The 1950/51 figures are based on country estimates where available; FAO estimates are used for other countries.

[3]Meat is in terms of carcass weight and includes beef, veal, pork, lamb, and mutton. Lard is excluded but offal is included. Meat equivalent of live animals exported is excluded.

[4]Milk from cows.

[5]Bulgaria, Czechoslovakia, Greece, Hungary, Italy, Poland, Portugal, Rumania, Spain, and Yugoslavia.

In Europe the 1948/49 feed supply (excluding grazing and green fodder) amounted to 130 percent of 1947/48 and 83 percent of prewar. This improvement was almost entirely the result of increased indigenous production. Net imports of coarse grains were at approximately the same level as in the preceding year, but still one-third below prewar. Oil-cake and -meal imports were 18 percent above 1947/48 but 53 percent below prewar. Some increase in 1949/50 is likely in European imports of oil-cake and -meal, but little change is expected in the volume of coarse grain trade.

Europe's supply of feed concentrates per animal unit rose from 65-70 percent of the prewar level in 1947/48 to 90-95 percent in 1948/49. During the first half of 1949, pastures were excellent in many of the Western and Central European countries and milk production was high. Lack of rain in some areas in the summer of 1949, and during the early part of the year in the Mediterranean countries, has reduced hay and fodder root crops; but for the year as a whole the feed situation in Europe is likely to be good, at least when compared with the average of the preceding postwar years.

Trade

Meat exports from the principal exporters were about 83 percent of the 1947 level and only 53 percent of the high volume reached in 1944. This decline occurred primarily because of reduced shipments from Argentina and the United States. In

TABLE 39.—NET TRADE IN MEAT, BUTTER, AND CHEESE, SPECIFIED AREAS, PREWAR,[1] 1947, 1948, AND 1950/51

+Net imports
—Net exports

Country	MEAT[2]				BUTTER[3]				CHEESE[4]			
	Prewar	1947	1948	1950/51 (estimate)	Prewar	1947	1948	1950/51 (estimate)	Prewar	1947	1948	1950/51 (estimate)
	(*Thousand metric tons*)											
Europe (excl. U.S.S.R. and Turkey)	+1,420	+1,650	+1,350	+1,055	+295	+173	+207	+165	+83	+191	+140	+105
Western and Central	+1,510	+1,610	+1,265	+1,035	+305	+164	+203	+155	+107	+190	+145	+115
Eastern and Mediterranean[5]	—90	+40	+85	+20	—10	+9	+4	+10	—24	+1	—5	—10
United States and Canada	—49	—328	—103	—77	—2	—5	+3	—22	—9	—104	—52	—45
Argentina, Brazil, Chile, Peru, and Uruguay	—980	—995	—810	—840	—8	—11	—15	—20	—2	—10	—12	—12
Australia and New Zealand	—561	—674	—615	—651	—240	—205	—223	—205	—97	—112	—101	—105

[1]"Prewar" refers to 1934-38 for most countries, but for a few it refers to an average of three or more years between 1934 and 1949.
[2]Meat is in carcass weight and includes beef, veal, pork, mutton, and lamb. Lard is excluded, but offal is included. Meat equivalent of live animals exported is included.
[3]Product weight.
[4]All types, excluding cottage cheese.
[5]Bulgaria, Czechoslovakia, Greece, Hungary, Italy, Poland, Portugal, Rumania, Spain, and Yugoslavia.

both countries lower production of meat and increased domestic demand reduced exports. The reduction was primarily felt by the United Kingdom, where 1948 imports were only 74 percent of the 1947 volume. Some of the continental European countries, notably Spain, Belgium, and the Netherlands, increased their imports significantly over 1947, and the imports of the United States were five times larger than in the preceding year. Butter exports increased in 1948, the largest gains being made by Denmark and the Netherlands. Cheese trade fell by 15 percent, and the trade in concentrated milk also declined.

During 1949 some increase in trade is expected. Butter exports are likely to increase relative to cheese. Meat export gains are expected to come primarily from South America and such European countries as Poland, the Netherlands, and Denmark. It should be noted, however, that the United Kingdom, which normally acquires the bulk of the meat exports, obtained about 20 percent less meat in the first six months of 1949 than in the corresponding period of 1948.

Most of the trade in livestock products is conducted through bilateral trade contracts. The United Kingdom, the predominant importer of these foods, has agreements with the major exporters which assure it virtually all exports from Oceania and a high proportion of these from Denmark, Poland, the Netherlands, and the South American countries. Denmark and Argentina, although under contract to sell the major portion of their exports of animal products to the United Kingdom, have contracts with numerous other countries to cover the remainder of their exportable supplies.

The new contracts which the United Kingdom has negotiated during the past year are for longer periods than formerly. Its present agreements with Australia and New Zealand run for the seven-year period ending in 1955. Its agreements with Denmark cover bacon for four years and butter for six years. The contracts with Argentina and Poland are for five years, and that with Ireland for four years. In all of the principal agreements the prices (and frequently the quantities) are subject to annual determination. In some of them, however, restrictions are placed on price changes from year to year. For example, the United Kingdom's contracts with Denmark limit the price change in any one year to 7.5 percent of the prices in effect in the preceding year; and in the U.K.-Irish agreement the prices to be paid for Irish cattle are tied to the U.K. domestic price.

The comparative rigidity of contracts, together with the fact that prices agreed to are frequently influenced by economic factors other than price relationships, has resulted in sharp contrasts between the various export prices for a single product. A competitive world price in the usual meaning of the term, therefore, does not exist. This is shown by the figures in Table 40.

There was some reduction in the price spreads between 1948 and 1949. The narrowing of beef prices paid by the United Kingdom was brought about by a cessation of buying in Canada and the purchase of very small quantities in Denmark; in the case of bacon, butter, and cheese, by an increase in the 1949 prices paid to Australia and New Zealand while other prices were held constant. More notable are the changes in prices for the 1949/50 season. Denmark has accepted a 16-percent price decrease on sales of butter to the United Kingdom, whereas Australia and New Zealand have been granted the maximum increase permitted by their contracts—7.5 percent—on butter, cheese, and meat. The remaining differences in butter prices are not much greater than can be explained by differences in freight and insurance costs.

TABLE 40.—CONTRACT PRICES PAID BY THE UNITED KINGDOM FOR MEAT, BUTTER, AND CHEESE, 1948, JUNE 1949, AND 1949/50

MEAT

Exporter	Good quality carcass beef			Good quality carcass lamb			First quality bacon		
	1948	June 1949	1949/50 contract	1948	June 1949	1949/50 contract	1948	June 1949	1949/50 contract
	(*Pence sterling per lb.*)								
Argentina	[1]9.5	10.4	10.4	[1]14.0	...	...	...	...	...
Uruguay	7.9	...	...	...	...	...	...	...	...
Australia	5.3	5.8	6.2	7.8	8.7	9.4	10.9	[2]10.8	11.6
New Zealand	5.0	5.9	6.3	8.8	10.4	11.2	10.1	12.0	12.9
Canada	15.8	...	...	...	...	...	21.4	21.4	...
Denmark	[3]15.5	...	...	...	...	...	24.1	24.1	[4]24.1
Ireland	...	...	...	...	...	...	24.1	24.1	...

Exporter	BUTTER			CHEESE		
	1948	June 1949	1949/50 contract	1948	June 1949	1949/50 contract
	(*Pence sterling per lb.*)					
New Zealand	22.0	25.2	27.1	12.5	14.3	15.4
Australia	21.8	25.0	26.9	12.2	14.1	15.2
Denmark	34.4	34.4	28.9	...	...	...
Canada	...	...	...	17.9	17.9	...

... No contract, or price unknown.
[1]Approximate price including allowance for lump-sum payment.
[2]Price subject to further revision.
[3]Average export price, to all markets.
[4]Price through December 1949; for calendar 1950 the price agreed upon is 23.3 pence per pound.

The variation in meat prices, even after the price increase accorded to Australia and New Zealand, will be quite large. A part of this, particularly in bacon prices, will be because of quality differentials.

Prospects for 1950/51

The outlook for production of animal products is closely associated with feed prospects. The better crop and grazing conditions in 1948 and 1949 in most of the major livestock-producing areas have provided an excellent base for livestock expansion. If reasonably good weather conditions prevail, rapid gains can be expected, particularly in the areas where 1948 production was substantially below prewar. Table 38 shows projections for 1950/51 for broad areas in relation to production and trade in previous periods. These estimates are based on official forecasts where available, and on FAO estimates in other cases.

In general the non-European countries project only small increases in output by 1950/51. These countries in 1948 and 1949 were near or above the prewar level of output, and production is not expected to increase rapidly. The United States, for example, has tentatively estimated that meat producion in 1950/51 will be only 3 to 4 percent over the 1948 level in spite of the extremely favorable feed situation existing in the first half of 1949. Official estimates for Canada, Australia, and New Zealand also show that only small increases are expected in the output of meat and milk in 1950/51. Although no official estimates are available for the Latin American countries, increases in the next two years are not likely to be large.

The European countries are trying to expand production of livestock products in order to restore the prewar level of consumption as rapidly as possible. Increases projected for 1950/51 are consequently large, and many of the official estimates seem optimistic,[1] particularly with respect to meat. But while the planned increases are in sharp contrast with the rate of gain in the first three postwar years, their accomplishment would still leave Europe's output of meat at 82 percent and of milk at 90 percent of the prewar averages.

According to the projections, a somewhat higher proportion of milk will be used for manufacturing in 1950/51 than in recent years. Many countries have removed or relaxed restrictions on the use of milk and on butter and cheese consumption. Some additional demand for fluid milk may arise, however, as a result of improvement in methods of handling and distributing in many of the Central and Eastern European countries.

Whether the European goals can be reached will depend on indigenous feed production and imports of feed. In 1948/49 about 50 percent of the world's imports of coarse grains came from Canada and the United States. A lack of dollar exchange may curtail European imports of these feeds, so the output of animal products may not increase as rapidly as planned. Improvement in the volume of feeds available from Eastern Europe and the U.S.S.R. may also be slower than hoped for.

Indications point to some expansion in international trade in livestock products during the next few years. Exports from non-European countries in 1950/51 are likely to be not greatly different from the 1948 level. The United States and Canada combined expect lower net exports of meat and cheese in 1950/51 than in 1948. Canada may have as much as 17,000 tons of butter available for export in 1950/51 (compared with net imports in 1948) because margarine can now legally be manufactured and sold in Canada, which may somewhat reduce the consumption of butter. In Australia and New Zealand, only small changes in export supplies are expected by 1950/51, with exports of all livestock food products at a lower level than in 1947. Some small increase in exports of meat, butter, and cheese seems likely from the South American exporting countries, but no official estimates are available.

In European countries the production and trade estimates for 1950/51 indicate that exports are expected to increase significantly, whereas imports are expected to advance only slightly. In this event, export availabilities of livestock products would exceed import requirements. The meat situation is shown in Table 41.

European exporting countries propose to have net exports in 1950/51 about 476,000 tons above the 1948 volume whereas European importing countries propose to import only 165,000 tons more than in 1948.[2] There is, of course, serious question that the plans or projections for European meat trade will materialize. For example, the European exporting countries are expected to have a lower volume of meat production in 1950/51 than in the prewar period. If this group of countries were to reach their prewar rate of meat consumption—even assuming that their production goals are reached—they could not have net exports in excess of 440,000 tons.

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[1]Available official forecasts for 1950/51 for European countries show a 48-percent increase in meat and a 28-percent increase in milk over the 1948 output. FAO projections for European countries not submitting forecasts show a 22-percent increase in meat and a 20-percent increase in milk over 1948 production.

[2]Not all of the projection figures shown above are official estimates. The import and export volumes for the largest European trading countries are, however, official projections. FAO estimates for others are based chiefly on conditions in 1949.

TABLE 41.—PROJECTED MEAT EXPORTS AND IMPORTS FOR 1950/51 COMPARED WITH 1948

(+) *Net import requirements*
(—) *Net export availabilities*

Region	1948		1950/51 projection	
	(*Thousand metric tons*)			
European exporting countries	— 164		— 640	
Denmark		— 76		— 250
Ireland		— 106		— 200
Poland		— 25		— 50
Netherlands		+ 20		— 40
France, Yugoslavia, Hungary, Turkey		+ 23		— 100
European importing countries	+1,500		+1,665	
United Kingdom		+1,259		+1,320
Belgium		+ 75		+ 60
Germany and Switzerland		+ 47		+ 145
Italy, Spain, Greece		+ 60		+ 100
Others[1]		+ 59		+ 40
Argentina, Uruguay, Brazil, Mexico	— 900		— 900	
Canada and United States[2]	— 103		— 777	
Oceania	— 615		— 651	
Non-European importing countries[3]	+ 275		+ 325	

[1]Czechoslovakia, Finland, Austria, Portugal, Sweden, Norway, Luxembourg.
[2]Excludes meat equivalent of dairy stock and breeding animals exported to the United States from Canada.
[3]U.S.S.R. and Chile, plus miscellaneous countries which add up to about 210,000 to 215,000 tons.

On the other hand, if the European importing countries in 1950/51 were to achieve their meat production targets (90 percent of prewar) and if they were to reach the prewar rate of meat consumption, their import requirements would be 2.3 million tons rather than the 1.7 million tons projected. (This example excludes the German Bizone, where consumption is expected to continue far below prewar.)

The targets and estimates reveal that countries propose to hold consumption below prewar levels in order to have quantities of meat for export or to avoid large imports of meat. But this is likely to be possible only if artificial restrictions on consumption are maintained. Otherwise, the effective demand for livestock products would probably be near or above the prewar level since real income per person is already above the prewar average in some European countries and is expected to be above prewar in nearly all of them by 1950/51.

A large part of the theoretical surplus of meat in 1950/51 is due to the very low import target set by the United Kingdom. This target, which is equivalent to about 73 percent of prewar imports, seems extremely pessimistic in view of (a) the United Kingdom's projection for indigenous meat production in 1950/51 (18 percent below prewar); (b) its expected higher real income per person (5 to 10 percent above prewar); and (c) its long-term meat contracts.

The United Kingdom's long-term meat contracts alone would indicate that imports will exceed the import target. In addition, the United Kingdom will undoubtedly obtain certain quantities of meat from various countries with which it has no trade agreements. The fact that nearly all of its meat purchases can be made in non-dollar countries lends weight to the thesis that consumption rates may be higher than the target levels of production and trade imply.

For butter and cheese the discrepancies between possible export availabilities and import requirements are not so large as for meat. Here again, however, the European countries tend to project large exports and small imports. For example, the Netherlands and Denmark, the two largest European butter exporters, plan by 1950/51 to be back near the prewar volume of exports, although this will require a lower per caput consumption of butter than prewar. The United Kingdom, on the other hand, proposes to import only 298,000 tons as against 486,000 tons prewar.

A realistic examination of possible supplies relative to prospective purchasing power would indicate that meat and dairy products may still be in short supply generally by 1950/51 and that import requirements, in spite of goals to the contrary, may exceed export availabilities, particularly in view of the fact that the dollar areas are involved only in a small way.

In the United States and Canada the demand for livestock products at current prices may decline, but so will prices. Total consumption, therefore, is likely to be as high as, or higher than, in 1948. Neither of these countries, however, is expected to be an important factor in the European meat or butter trade in 1950/51.

6. CITRUS AND DRIED FRUITS

Citrus Fruits

THE STEADY EXPANSION which characterized citrus fruit production during the interwar period has persisted through and beyond World War II in the Western Hemisphere and Africa. European and Near Eastern output, however, is still below prewar levels. Output has risen rapidly in the United States, the world's leading producer, but the 1948 crop was much damaged by the severe winter in California and Texas. The predominant producer of limes, Mexico, has increased its production to three times the prewar level.

Statistics on the number of citrus trees of bearing age or even on orchard area are unsatisfactory for most countries, but all available figures indicate continuing expansion. In the United States the area under oranges has increased from 200,000 hectares prewar to 232,000 hectares in 1948.

World trade in citrus products has increased steadily since the end of the war, but total exports are still considerably below the prewar level. Only for grapefruit has the trade fully recovered.

The picture, however, is rather different in different countries. Exports of oranges and tangerines from the United States, Italy, the Union of South Africa, and Algeria have considerably surpassed the prewar export levels, but exports from Brazil, Spain, and Israel in 1948 were below the prewar volume.

Grapefruit exports from the United States have more than doubled as compared with prewar, while Israel's exports have declined, particularly in 1948 when war conditions seriously affected Israel's citrus production and trade.

The chief exporter of lemons, Italy, shipped only 140,000 tons in 1948 as against 213,000 tons prewar, but the proportion of exports to production was only slightly below the prewar figure of 62 percent.

TABLE 42.—WORLD PRODUCTION OF CITRUS FRUIT

Type of fruit	1934-38	1945	1946	1947	1948	1945-48 average	1945-48 as % of 1934-38
	(*Thousand metric tons*)						(*Percent*)
Oranges and tangerines	7,120	8,060	8,400	9,010	8,500	8,492	119
Grapefruit	1,140	2,350	2,240	2,370	1,750	2,178	191
Lemons, limes, etc.	990	1,160	1,190	1,200	1,050	1,150	116
TOTAL	9,250	11,570	11,830	12,580	11,300	11,820	128

TABLE 43.—PRODUCTION OF CITRUS FRUIT BY REGIONS

Region	1934-38	1945	1946	1947	1948	1945-48 average	1945-48 as % of 1934-38
	(*Thousand metric tons*)						(*Percent*)
	Oranges and Tangerines						
Europe	1,470	1,200	1,000	1,350	1,400	1,240	84
North and Central America	2,510	3,850	4,210	4,100	3,800	3,990	159
South America	1,690	1,620	1,700	1,790	1,740	1,710	101
Asia	910	760	750	1,010	720	810	89
Africa	450	550	570	670	660	610	136
Oceania	90	80	80	90	100	90	100
WORLD	7,120	8,060	8,310	9,010	8,420	8,450	119
	Grapefruit						
North and Central America	1,060	2,300	2,150	2,280	1,640	2,090	197
South America	–	–	–	10	10	10	–
Asia	60	30	60	60	40	48	80
Africa	20	20	30	20	20	23	115
WORLD	1,140	2,350	2,240	2,370	1,710	2,170	190
	Lemons and Limes						
Europe	440	300	340	380	350	340	77
North and Central America	360	600	590	550	390	530	147
South America	60	90	100	100	150	110	183
Asia	50	70	70	80	80	75	150
Africa	70	80	60	60	60	65	93
Oceania	10	20	20	20	20	20	200
WORLD	990	1,160	1,180	1,190	1,050	1,140	115

TABLE 44.—WORLD EXPORTS OF CITRUS FRUIT

Type of fruit	1934-38	1945	1946	1947	1948
	(*Thousand metric tons*)				
Oranges and tangerines	1,850	800	1,200	1,250	1,300
Grapefruit	130	90	135	160	130
Lemons and limes	280	80	95	120	150
TOTAL	2,260	970	1,430	1,530	1,580

Among the major citrus importers the United Kingdom and France increased their imports of oranges and lemons during 1948, but their imports are still below prewar.

Canada and Belgium imported less in 1948 than in 1947, but their imports have been much above prewar. Canada is now the most important outlet for United States exports. The shortage of dollars has limited the European market for United States citrus fruit, and the United Kingdom has completely closed down on all imports from the United States.

Spain, the most important exporter of oranges, has been able to make trade agreements with European importing countries which will dispose of its exportable quantities in 1949, in spite of Spain's high price level compared with other non-dollar suppliers. In general, European imports continue to expand, but during the first six months of 1949 the United Kingdom imported little more than half the quantity of oranges imported in the same period in 1948. This decline is largely in imports from Israel and may be interpreted as a result of the war in Israel rather than as a deliberate cut in the import program from areas outside the dollar region.

For the United States, where the citrus industry has been subject to much discussion in relation to future agricultural price policy, the export of fresh citrus fruit (except lemons) still represents the same proportion of production as in the prewar years.

The problem is, of course, whether United States exports can be maintained in face of the dollar shortage and whether the home market can absorb at remunerative prices its regular share of the production. This depends to a considerable extent upon the canning (including juice) industry, which now absorbs a substantially higher proportion of the production than before the war.

It is an indication of a market at least temporarily stabilized that the special Citrus Export Program, which had been in operation since 1 December 1948, was terminated early in May 1949. Under the provisions of this program benefit payments of not more than 25 percent of the f.a.s. price were made to United States exporters consigning fresh and processed citrus fruits and juices to certain European countries eligible to receive aid under the Foreign Assistance Act of 1948. Table 46 indicates price developments since 1938.

The price trend in importing countries may be illustrated by the c.i.f. prices for oranges imported into the United Kingdom (Table 47).

OUTLOOK

Forecasting of the marketing situation is difficult for any fruit crop subject to great fluctuation in yields. The 1 August 1949 crop report for the United States shows crop conditions below those of the same date last year and below the 10-year average. For the European crop, no reports are available. In South Africa, an appreciable increase in production is anticipated during the coming season, and in Israel the end of hostilities should improve both production and exports.

The European market will most likely absorb increasing quantities of citrus fruit, at least from non-dollar countries. With the recovery of industrial production in the citrus-importing countries, exchange between these countries and some of the citrus exporters may increase. Sweden and Belgium, which both increased their citrus im-

TABLE 45.—UNITED STATES PRODUCTION AND EXPORTS OF CITRUS FRUIT, PREWAR AND 1948

Type of fruit	Production		Export		Export as percentage of production	
	1934-38	1948	1934-38	1948	1934-38	1948
	(*Thousand metric tons*)				(*Percent*)	
Oranges and tangerines	2,284	3,244	150	220	6.6	6.8
Grapefruit	1,017	1,617	45	75	4.5	4.6
Lemons	322	314	16	5	5.0	1.4

TABLE 46.—AVERAGE PRICES RECEIVED BY FARMERS AT PACKING HOUSES IN THE UNITED STATES, 1938-48

Date[1]	Oranges	Grapefruit	Lemons
	(*U. S. dollars per box*)		
1938	0.76	0.31	1.48
1939	0.95	0.44	1.59
1940	1.18	0.43	1.20
1941	1.56	0.74	1.60
1942	2.47	1.15	2.47
1943	2.64	1.53	3.31
1944	2.69	1.64	2.75
1945	2.93	1.37	1.94
1946	1.55	0.86	2.67
1947	1.25	0.51	2.44
1948[2]	1.17	0.53	2.45

SOURCE: U. S. Department of Agriculture, *Crops and Markets*, vol. 26, page 83.

[1]Refers to crop season beginning in the year named.

[2]Only first part of season; the average for the whole season is likely to have been higher.

TABLE 47.—AVERAGE IMPORT VALUE OF ORANGES IN THE UNITED KINGDOM

Source of import	1938	1947	1948
	(*Pounds sterling per metric ton*)		
Palestine	12.34	37.00	36.05
South Africa	14.86	37.53	40.67
Spain	12.99	47.94	37.16
United States	12.77	38.54	38.00
Brazil	12.77	38.54	42.85
WEIGHTED AVERAGE	13.70	41.50	–

SOURCE: *Trade and Navigation Accounts of the United Kingdom.*

TABLE 48.—PRODUCTION OF MAJOR TYPES OF DRIED FRUITS

Type of fruit	1935-39	1945	1946	1947	1948
	(*Thousand metric tons*)				
Prunes	270.8	240.3	222.5	217.5	616.6
United States	213.2	212.1	194.1	184.4	1,523.6
Other	57.6	28.2	28.4	33.1	95.3
Raisins	462.9	471.6	438.2	469.3	197.5
United States	198.3	218.6	175.1	274.9	28.8
Other	264.6	253.0	263.1	194.4	420.3
Currants	187.2	56.8	71.8	89.1	202.3
Dried figs	260.0	201.5	185.5	215.4	218.0
Dates	502.7	562.9	613.8	593.4	193.9
TOTAL	1,683.6	1,533.1	1,531.8	1,584.7	165.1

ports during 1947 and 1948, may be cited as examples. The German market, which in prewar years was one of the most important, may slowly recover, partly at least because of the interest of Italy and Spain in obtaining certain German industrial products.

Considerable expansion of the European market should be possible if prices are reduced to a level that would put these products within reach of the lower-income groups. Much can be done to increase yields in the European orchards and to reduce production and distribution costs. The canning industry should be able to absorb substantial quantities for making juices.

The British Ministry of Food has recently made a 10-year contract with the British West Indies to produce concentrates and juice. A wide-scale expansion of the citrus area has been planned and equipment for juice production will be installed. It has been estimated that by 1953 the British West Indies will be able to produce about 170,000 tons of oranges. The prewar export to the United Kingdom was 7,000 tons. This development scheme is an indication of how the dollar shortage may cause geographical shifts in production.

Dried Fruits

Commercial production of dried fruits for the years 1945-48 was about 8 percent below the prewar volume, but the trend has been rather different for the individual varieties. Table 48 indicates an expansion in the output of dates, a rather stable production of raisins, and a decline in production of prunes, currants, and dried figs.

Dried fruit production was supported in some areas during the war by an extraordinarily high demand for army supplies and for dehydrated food to ship overseas. Prices rose proportionately more than for fruit in other forms. Increased exports from Australia, South Africa, and the United States compensated for the decline in exports from Greece, Turkey, Algeria, and Iran.

Since the war the exports from Mediterranean countries have been gradually recovering. The market situation seems favorable for dates and also for dried figs, at least from Turkey and Algeria, which are the two most important exporters.

Greece has obtained an agreement with Germany which reopens that important market. Recent reports, however, indicate that Greece was unable to market a part of the 1948 pack of raisins, currants, and dried figs before the 1949 season; moreover, the crops of these fruits in 1949 are reported to be larger than in 1948. Iran and Spain have had a carry-over of raisins, and Spain and Italy of figs. In Italy, low-grade figs have been used for feeding livestock, and Spain has considered establishment of a special exchange rate to stimulate fig exports.

Late in 1948 Australia made a five-year contract with the United Kingdom according to which U.K. will purchase the available Australian export surplus of dried raisins and currants up to £2.5 million. Supplies required for export to Canada, New Zealand, and other markets are excluded from the contract. Prices are fixed for the first two years, after which they will be reviewed annually. For the first year an annual export of about 40,000 tons of raisins and currants is expected. Argentina, which has developed an export of prunes, recently faced a reduced export demand, and the 1948/49 market opened with surpluses.

The United States during 1947 and 1948 increased its export of dried prunes and raisins above the prewar level. Extensive government purchases through the Com-

TABLE 49.—UNITED STATES PRODUCTION AND MARKETING OF PRUNES AND RAISINS

Fruit	U. S. production			Government purchase		Export		
	1934-38	1947/48	1948/49	1947/48	1948/49	1934-38	1947/48	1948/49 (estimate)
	(*Thousand metric tons*)							
Dried prunes	213.2	184.4	165.1	111.0	57.0	90.1	103.7	77.1
Raisins	198.3	274.9	202.3	107.0	54.0	54.0	112.1	49.9

modity Credit Corporation took place, and the stocks have been disposed of partly through school-lunch programs but mainly through the foreign-aid program; in 1948 some 189,000 tons of dried fruits were delivered to Germany.

An annual import into Germany of about 70,000 tons for 1949/50 and 1950/51 and of 100,000 tons for 1952/53 is anticipated, compared with 400,000 tons prewar. Unless more liberal dollar appropriations should be granted to Germany, the anticipated imports during the coming seasons will probably be chiefly from the Mediterranean region.

Whether the government support program in the United States will be continued is not yet clear, but the purchases in 1948/49 have been much below those of 1947/48. Unless special appropriations for shipping dried fruit are made in foreign-aid programs, the United States is unlikely to be able to market its surplus production in Europe. Whereas the main exports in prewar years went to the United Kingdom, Germany, France, Scandinavia, the Netherlands, and Belgium, most of these markets have lost their importance because of the shortage of dollars. The United Kingdom was the chief postwar market even up to the end of 1947, taking 30,000 tons of dried prunes and 25,000 tons of raisins annually. Since then, its imports of dried fruits from the United States have practically ceased.

The 1949 United States prune crop is estimated to be 33 percent above last year's and 20 percent above the average. The output of raisins likewise promises to be large. With this prospect of good crops and decreasing export outlet, the marketing situation in 1949/50 and thereafter promises to be difficult.

B. Agricultural Products—Fibers

NATURAL FIBERS used in manufacture include a large variety of materials of vegetable and animal origin. Of these, the following nine fibers of major economic significance were reviewed in last year's *State of Food and Agriculture* and are considered again this year: cotton, wool, silk, flax, hemp, jute, and the three major hard fibers—abaca, sisal, and henequen.

PRODUCTION

World production of fibers in 1948/49 was 10 percent larger than in the previous year and reached 93 percent of the average volume for 1934-38. World production of each of the major fibers other than abaca, jute, and silk was larger than in the previous season, but wool alone among the natural fibers reached the prewar level. Because of the predominant importance of cotton and of the United States as the largest cotton producer, the recovery of fibers output was strongly influenced by a bumper cotton crop harvested in the United States.

Nine-tenths of the world fiber production still consists of the natural fibers; the output of man-made fibers, however, has resumed a strong upward trend in the postwar period (see Table 50).

The Americas and Asia together contribute about 70 percent of world fiber output. In 1948/49 record yields of cotton and continuing high levels of rayon output raised North American production of fibers to 129 percent of prewar, accounting for more than one-third of the world total as compared with one-fourth before the war. In Asia, on the other hand, output of fibers in 1948/49 was at only 64 percent of the prewar level, reflecting low levels of cotton production, a poor jute crop in Pakistan, a reduced abaca output in the Philippines, and slow recovery from the drastically curtailed wartime production of hard fibers in Indonesia and of rayon manufacture and sericulture in Japan. Europe's share in natural fibers production is extremely small compared with its importance as a consumer of these raw materials. But the situation in the man-made fibers is different: European production has resumed a sharp upward movement, contributing more than two-fifths of the world output in 1948. Production of natural fibers in the Soviet Union is still considerably below prewar, because of a further decline in cotton production and the reduced size of postwar flax and hemp crops. Oceania, though of predominant importance as an exporter of apparel wool, continues to contribute the smallest continental share of world output by volume.

TABLE 50.—WORLD PRODUCTION OF FIBERS, PREWAR, 1947/48, AND 1948/49,[1] BY TYPES AND BY REGIONS

By Types

Fiber or fiber group	Quantity			Index		Distribution	
	1934-38	1947/48	1948/49[2]	1947/48	1948/49[2]	1934-38	1948/49[2]
	(*Thousand metric tons*)			(*1934-38 = 100*)		(*Percent*)	
1. Cotton	6,651	5,513	6,281	83	94	56	57
2. Wool (clean)	943	928	948	98	101	8	9
3. Raw silk	54	13	13	24	24	1	–
4. Flax	790	350	450	44	57	7	4
5. Hemp	454	267	345	59	76	4	3
6. Jute	1,875	1,568	1,391	84	74	15	13
7. Hard fibers[3]	522	456	483	87	92	4	4
8. Rayon filament yarn	446	595	706	133	158	3	6
9. Rayon staple fiber	186	308	417	166	224	2	4
10. Nylon[4]	–	20	30	–	–	–	–
TOTAL	11,921	10,018	11,064	84	93	100	100
Natural fibers (1-7)	11,289	9,095	9,911	81	88	95	90
Man-made fibers (8-10)	632	923	1,153	146	182	5	10
Mainly apparel and household (1-4 and 8-10)	9,070	7,727	8,845	85	97	77	80
Mainly industrial (5-7)	2,851	2,291	2,219	80	80	23	20
Region	By Regions						
Europe	814	776	970	95	119	7	9
U.S.S.R.	1,553	949	1,021	61	66	13	9
North America	2,998	3,139	3,870	105	129	25	35
Latin America	908	971	1,088	107	120	8	10
Asia	4,489	3,126	2,852	70	64	37	25
Africa	833	711	899	85	108	7	8
Oceania	326	346	364	106	112	3	4
WORLD	11,921	10,018	11,064	84	93	100	100

[1]Data for cotton, wool, and jute relate to production seasons; those for silk, flax, hemp, hard fibers, rayon, and nylon to calendar years.
[2]Preliminary figures.
[3]Abaca, sisal, and henequen.
[4]Approximate estimates.

A longer range perspective of world production of the major apparel fibers shows the growth of rayon's share in the fiber total and the collapse of silk (see Chart 12 and Table 51). For the first time since the end of the war, the volume of rayon production in 1948 exceeded the clean weight of the world wool clip.

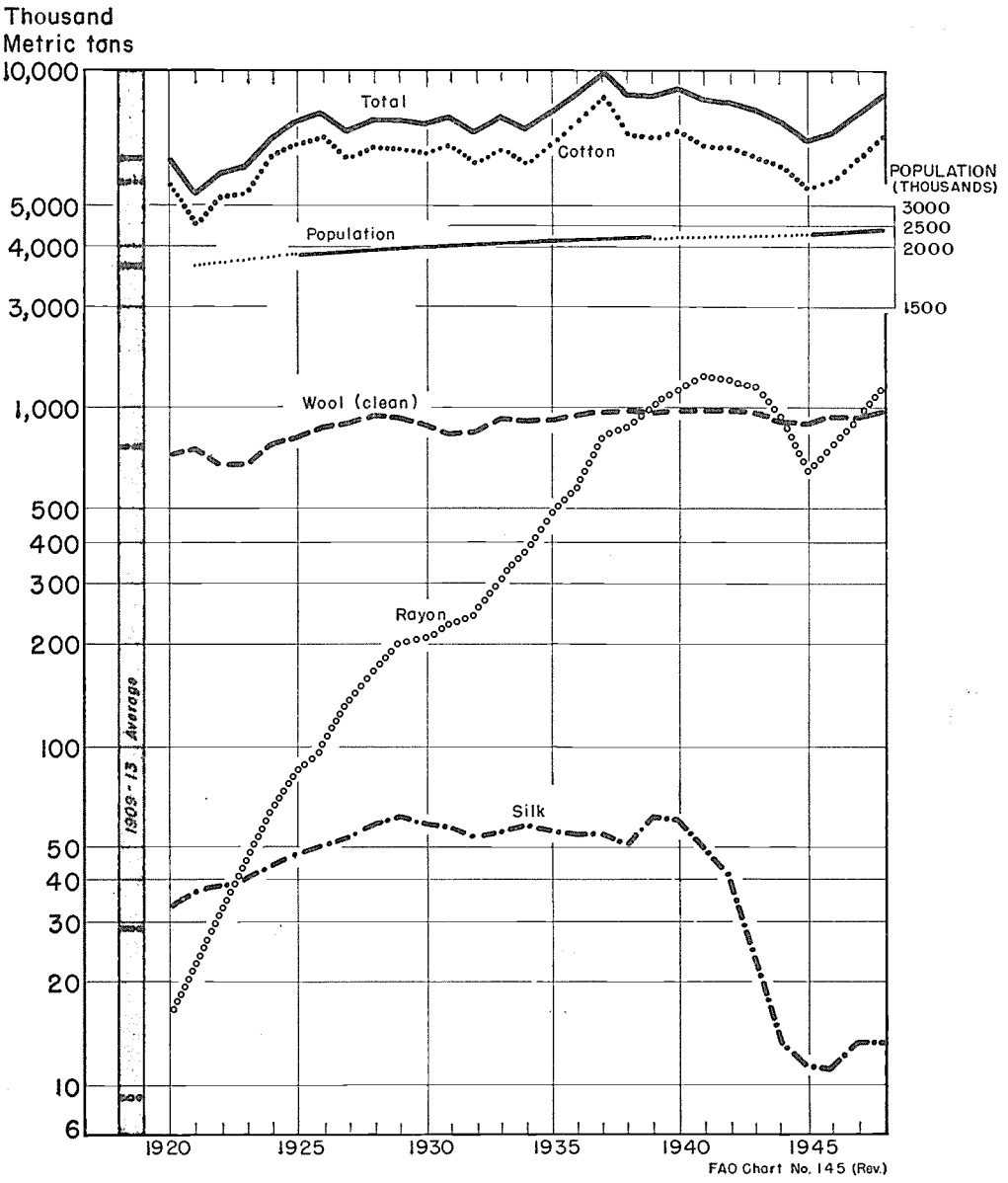
CONSUMPTION

During the first three postwar seasons, world consumption of fibers, while still appreciably below the prewar average, ran well in excess of current production (see Table 52). In 1948/49 the gap was narrowed. New supply of wool, jute, and silk had to be supplemented from stock, but cotton production exceeded consumption for the first time since the war. Usage of rayon was up sharply and consumption of all fibers, including synthetics, rose from 92 percent of the prewar average in 1947/48 to 94 percent in 1948/49.

Despite the rapid development and continuing expansion of textile manufacture in Latin America, Africa, and Oceania, the volume of natural fibers consumed in these three regions in 1948 accounted for only 7 percent of the world total. Both Europe and Asia consumed smaller shares than before the war, while the North American

Chart 12.—World Production of Major Apparel Fibers

1909-13 Average and 1920-48



share was much increased. Consumption of synthetic fibers, in particular in North America, was vastly increased, but Asia's share in world consumption fell from 25 percent prewar to 6 percent, largely because of the war damage to Japan's rayon industry.

The increased importance of the United States in the postwar world fiber economy is illustrated by the figures in Table 53. Any change in its textile activity will tend to have stronger effects on the world fiber market than before the war. The effects on cotton prices of a continuing economic recession in the United States in 1949/50

TABLE 51.—WORLD PRODUCTION OF MAJOR APPAREL FIBERS AND WORLD POPULATION, SELECTED PERIODS, 1890-1948/49[1]

Period	Cotton	Wool, clean	Silk	Rayon[2]	Total	World population[3]
	(*1909-13 = 100*)					
1890	58	87	41	...	62	85
1909-13	100	100	[4]100	100	100	[5]100
1924-28	125	112	172	1,200	125	108
1929-33	123	115	197	2,656	126	113
1934-38	143	123	186	7,022	151	118
1939-43	130	129	159	12,822	150	[6]121
1945/46	99	117	38	7,044	112	125
1946/47	101	122	38	8,433	117	128
1947/48	118	121	45	10,333	134	130
1948/49[7]	135	124	45	12,478	153	131
	(*Percentage distribution*)					
1890	80.0	19.7	0.3	...	100.0	
1909-13	85.3	14.0	[4]0.5	0.2	100.0	
1924-28	85.2	12.5	0.7	1.6	100.0	
1929-33	83.0	12.8	0.8	3.4	100.0	
1934-38	80.4	11.4	0.6	7.6	100.0	
1939-43	73.4	11.9	0.6	14.1	100.0	
1945/46	75.0	14.5	0.2	10.3	100.0	
1946/47	73.3	14.6	0.2	11.9	100.0	
1947/48	74.9	12.6	0.2	12.3	100.0	
1948/49[7]	75.1	11.3	0.2	13.4	100.0	

[1]Data for cotton and wool relate to production seasons; those for rayon, silk, and world population to calendar years.
[2]Rayon filament yarn and staple fiber.
[3]Population estimates are not entirely comparable for various years, owing to changes in statistical reporting and compilation.
[4]1911-15.
[5]1910-13.
[6]1939.
[7]Preliminary figures.

TABLE 52.—WORLD FIBER CONSUMPTION BY CONTINENTS, PREWAR, 1947/48. AND 1948/49

Continent	1947/48	1948/49 Prelim.	1934-38	1947/48	1948/49 Prelim.
	(*Index 1934-38 = 100*)		(*Percent of world total*)		
	Natural fibers[1]				
Europe	76	82	32	27	30
U.S.S.R.	51	60	14	8	9
North America	145	125	17	28	24
Latin America	166	171	3	5	5
Asia	80	79	34	30	30
Africa	315	338	–	1	1
Oceania	191	191	–	1	1
WORLD	89	89	100	100	100
	Synthetic fibers[2]				
Europe	116	139	49	40	37
U.S.S.R.	87	425	1	1	3
North America	348	407	23	53	50
Latin America	247	327	2	4	4
Asia	13	36	25	2	6
Africa	150	350	–	–	–
Oceania	250	400	–	–	–
WORLD	146	182	100	100	100

[1]Cotton, wool (clean), silk, flax, hemp, jute, and hard fibers.
[2]Rayon and nylon.

would be cushioned by the U.S. loan support program. No equally effective buffer would be available for wool and other fibers, of which the United States is a major importer. Lower receipts from wool sales to the United States would mean a serious loss of dollar earnings for the sterling area and for Argentina and Uruguay. Some weakening of demand, in the world wool supply-demand situation, however, may actually help to achieve balance especially in the market for fine merinos free of fault. During the first three and one-half years after the war the new clip supply had to be supplemented from stocks accumulated during the war, and these reserves are now nearing depletion.

In Europe, by far the largest share of fiber consumption is traditionally absorbed by the group of countries now participating in the European Recovery Program. The United Kingdom, the largest single user, expanded its textile exports in 1948 and also abolished clothes rationing, which had been in force since June 1941, though the end of rationing did not bring about any major change in domestic consumption because buying continued to be held down by the high cost of clothing relative to spendable incomes. However, the volume of textiles manufactured in the United Kingdom in 1948 still did not reach prewar levels. Shortage of textile labor continued to be a limiting factor, even though the number of workers employed increased appreciably in each successive postwar year. The tight labor situation, the high cost of new equipment, and the limited possibility of radical change in the often antiquated British textile machinery have focused attention on methods of increasing output per man-hour by redeployment of labor and by minor improvements of key equipment.

The French textile industry was greatly aided in 1948/49 by dollar funds made available for imports of cotton and sisal under the European Recovery Program, by sterling drawing rights granted to France under the Intra-European Payments Scheme, and by the continuation of special private revolving credits provided for purchases of raw wool. French consumption of cotton and wool reached 94 percent of the 1934-38 average in 1947/48 and 121 percent in 1948/49. In Belgium and Italy, consumption of major apparel fibers was appreciably larger in 1948/49 than before the war, but fell short of the exceptionally high levels attained in 1947/48. The drop in the volume of textile manufacture in these two countries was associated with general deflationary trends in their economies and with growing difficulties in their textile sales abroad. A number of Belgian workers who could not find employment at home migrated to the

TABLE 53.—THE UNITED STATES IN THE WORLD FIBER ECONOMY

	Production	Consumption	Exports	Imports
	(*U.S. as percentage of world total*)			
Natural fibers[1]				
1934-38	25	19	25	10
1947/48	29	29	14	18
1948/49[2]	33	25	28	17
Synthetic fibers[3]				
1934-38	20	21	-	16
1947/48	50	51	13	19
1948/49[2]	47	50	8	16

[1]Cotton, wool (clean), silk, flax, hemp, jute (including jute manufactures), abaca, sisal, henequen.
[2]Preliminary.
[3]Rayon filament, staple fiber, nylon.

United Kingdom, relieving the textile labor shortage there. The textile industry of western Germany fared much better than in earlier postwar seasons, owing to larger imports of raw cotton and wool and good recovery in the output of rayon filament and staple fiber. At the same time, the index of textile production in western Germany was still about one-half of prewar, compared with 106 percent for ERP-aided Europe excluding western Germany. Remarkable rates of expansion were achieved in some of the smaller countries, notably in the Netherlands and in the Scandinavian countries.

In the Far East, recovery continued at a slow pace in Japan and was at a standstill in China. Arrangements were continued for the supply of raw cotton to Japan, largely from the United States, by means of official and semiofficial dollar credits. Manufacturing capacity was increased by machinery repairs and by an improvement of the food supply in urban areas, which helped to bring more workers to the mills. But the main limiting factor was the difficulty of selling Japanese textiles abroad against dollars. Despite various arrangements to export textiles in the sterling area, dollars still have to be earned in order to meet the obligations under the revolving credits opened for the supply of raw cotton to Japan. With the stagnation of textile sales against dollars and low dollar earnings from other sources, the mechanism for supplying raw cotton could not function smoothly. Output of wool textiles also remained low, especially in worsteds, which require the finer types of wool as raw material. Recovery of Japan's rayon production has been retarded by a scarcity of caustic soda, sulphuric acid, and carbon disulphide. Production of sulphuric acid and carbon disulphide is limited by insufficient shipments of ore from the mining areas, and the output of caustic soda depends on coal and imported salt. Production of raw silk in Japan recovered to only about one-fifth of the 1934-38 volume.

In the Union of India, the desired expansion of cotton textile manufacture was limited by difficulties of raw materials supply. Before partition, India ranked as one

TABLE 54.—WORLD EXPORTS OF FIBERS, PREWAR, 1947/48, AND 1948/49[1]

Item	Index		Distribution			Exports/prod. ratio	
	1947/48	1948/49[2]	1934-38	1947/48	1948/49[2]	1934-38	1948/49[2]
By fibers	(*1934-38 = 100*)		(*Percent of world total*)			(*Exports as percentage of production*)	
Cotton	72	85	59	56	62	41	37
Wool, clean	120	108	12	19	16	57	61
Silk	8	19	–	–	–	69	54
Jute	55	36	17	12	7	41	20
Hard fibers	75	81	11	10	11	94	82
Rayon	157	241	1	3	4	9	12
TOTAL	76	80	100	100	100	43	36
By continents[3]							
Europe	120	189	2	2	3	14	20
U.S.S.R.	1,053	765	–	5	4	2	21
North America	44	91	25	14	28	38	27
Latin America	118	100	12	19	15	63	52
Asia	52	35	39	27	17	40	22
Africa	102	116	16	22	23	90	87
Oceania	123	126	6	11	10	91	104
WORLD	76	80	100	100	100	43	36

[1]Data for cotton, wool, and jute relate to production seasons; those for other fibers to calendar years.
[2]Preliminary.
[3]Cotton, wool (clean), silk, jute, hard fibers, rayon.

of the largest exporters of raw cotton. Since the establishment of the new frontiers, the Union of India has become a net importer of raw cotton while Pakistan now depends largely on supplies of finished textiles from abroad. The Bengal jute economy has also been divided in two as a result of partition, raw jute supply is concentrated largely in Pakistan, and the jute-manufacturing capacity in India is centered in the vicinity of Calcutta. While Indian exports of jute manufactures in 1948 were near prewar levels, raw jute shipments overseas amounted to little more than one-third of the prewar volume. The effects of the reduction in raw jute supplies in the world market have been felt most by the European industries, which have traditionally absorbed the bulk of jute fiber imports.

World consumption of hard fibers in 1948 recovered to 85 percent of the prewar rate. North America accounted for more than two-fifths of the total as compared with a third in the prewar period, while the shares of the other principal consuming regions—Europe and Asia—were correspondingly lower.

TRADE AND PRICES

Despite some slight expansion of world fiber shipments in each successive postwar season, the recovery of international fiber trade in the postwar period has been generally slower than that of either world production or consumption. In the long run, this development may be accentuated further by the increasing importance of synthetic textile raw materials which can be produced where they are wanted and are largely consumed in countries of origin. In the case of raw cotton, the lowered ratio of world exports to world production reflects in part the increased manufacturing use of raw cotton in certain major producing countries. A similar development has taken place in henequen; because a much larger share of the crop is being used in the Mexican industry and exported as finished goods, exports of henequen have dropped from 75 percent of total output before the war to 49 percent in 1948.

Three interrelated factors determine the importing countries' effective demand for fibers: (1) processing capacity, (2) expectations concerning effective demand for textiles at home and abroad, and (3) fiber prices and availability of foreign exchange for fiber imports. During the first three postwar seasons, shortage of foreign exchange was the most general obstacle, especially during the first three-quarters of the 1947/48 season, when UNRRA and other special credits had ended and United States aid had not yet been brought into effect. The general inflationary trend and the high rate of textile manufacturing activity in the United States contributed to a sharp rise in fiber prices which made the position of fiber-importing countries more difficult, especially in Europe, which takes two-thirds of world imports. In 1948/49 the situation was changing. The European Recovery Program and other credit arrangements made available to importers much more liberal direct and indirect supplies of foreign exchange; industrial activity was declining in the United States; and in a number of countries there was growing consumer resistance to high textile prices.

A large share of the world's cotton and some of the hard fibers can be bought only for dollars. Wool and jute, on the other hand, are predominantly shipped from sterling areas, and are important sources of hard-currency earnings for these areas; indeed a larger-than-prewar share of world shipments of wool, jute, and hard fibers continued to be directed to the United States until the end of 1948.

In 1948/49, cotton for export was scarce in Asia, stocks were low in Brazil, whereas in the United States dollar credits and large supplies led to the declaration of cotton as a surplus commodity under ERP. These facts account for the large share of U.S. cotton in Europe's total cotton imports.

As regards raw wool, direct European purchases against dollars were quite small, but European importers were aided indirectly by ERP funds through the medium of sterling grants made available to them under the Intra-European Payments Scheme. Special sterling credits for wool purchases were made available to France and Poland.

The Soviet Union supplied part of Eastern Europe's fiber requirements and at the same time bought fairly substantial quantities of cotton and wool in the world market. An interesting instance of triangular trade was provided by an Austro-Hun-

TABLE 55.—WHOLESALE PRICE INDICES OF MAJOR FIBERS IN SELECTED MARKETS, SPECIFIED PERIODS

Fibers and wholesale price indices	1946	1947	1948	Jan.-Mar. 1948	Jan.-Mar. 1949	Apr. 1949	May 1949	June 1949
	(*1934-38 = 100*)							
Cotton:								
United States, Middling $\frac{15}{16}$", 10 U.S. markets, average	273	308	302	304	292	295	294	293
Mexico, Middling $\frac{15}{16}$", torreon[1]	197	229	251	260	218	224	198	191
Brazil, Type 5, Sao Paulo[1]	191	231	272	252	306	298	283	281
India, Jarilla fine, Bombay[1]	245	239	341	313	338	338	338	338
Egypt, Ashmouni good, Alexandria[1]	...	268	422	450	338	298	298	278
Peru, Tanguis, Type 5, Lima[1]	191	205	259	222	...	...	...	257
Wool:								
Merino								
Australia, 64's average, clean basis, London[2]	153	236	368	324	401	339	347	358
United States, Territory staple 64's, 70's, 80's, clean basis, Boston	122	145	177	149	214	214	214	205
Crossbred								
Argentina, 56's, greasy basis, Buenos Aires[1]	114	152	185	163	...	...	...	...
New Zealand, 46's average, clean basis, London[2]	177	218	273	257	314	268	279	279
New Zealand, 56's average, clean basis, London[2]	182	206	234	232	284	248	240	240
Carpet								
East Indian, average white vicanere, greasy basis, Liverpool[2]	199	202	229	221	207	207	221	...
Silk: Japanese, 13/15 denier, White D grade, New York	...	276	158	158	158	158	158	158
Rayon:								
Filament, Viscose, 150 denier, U.S.A.	98	118	132	130	135	135	130	125
Stable Fiber, Viscose 1½ denier, U.S.A.	83	107	122	120	123	123	120	117
Nylon: 30 denier, 10 filaments, U.S.A.[3]	64	60	61	60	63	63	63	...
Jute: Indian, Native Firsts, New York	228	367	430	398	486	465	446	...
Abaca: Davao I, New York	[4]194	391	396	392	425	407	411	...
Sisal: British East Africa, No. 1, U.K.[2]	249	354	425	411	458	458	458	...
Henequen: Mexican, Grade A, U.S. port of entry	154	304	323	323	317	317	317	...
Wholesale Price Indices:								
United States: Wholesale prices, general (Bureau of Labor Statistics)	151	190	206	203	197	195	194	193
United Kingdom: Wholesale prices, general (Board of Trade)	182	199	228	224	229	235	240	240

[1]Indices based on quotations in U.S. cents per pound. Quotations in local currencies converted at International Monetary Fund rates.
[2]Indices for Dominion and carpet wool and for sisal are based on original sterling quotations.
[3]31 December 1939 = 100.
[4]11-month average.

garian barter agreement, concluded under ERP auspices, under which dollars out of Austria's ERP allocation were allotted to Hungary for purchases of United States cotton against shipments of Hungarian grain to Austria.

After Europe, the Far East has traditionally had the next largest demand for imported fibers, mainly to supply the raw material needs of Japan. In 1948/49 the volume of Asiatic fiber imports was less than half the prewar average, largely because of the difficulties in Japan already mentioned.

The scope and function of centralized competitive world fiber markets have been narrowed and changed, compared with prewar, by the strengthening of governmental control over trade and foreign exchange payments, enlargement of the state trading sector, and wide-scale adoption of barter deals. Nevertheless, the importance of centralized world fiber markets has reasserted itself to some extent since the war. The Joint Organization's system of determining the size of wool offerings and maintaining reserve prices has been combined with the sale at public auction of the predominant share of all wool entering the world market. The Raw Cotton Commission in the United Kingdom, which is responsible for all cotton purchases from abroad, follows the policy of adjusting domestic prices to spinners to changes in world market prices. Even in countries where foreign trade is entirely conducted by the government, as in the Soviet Union, part of the buying is transacted through private trading agents bidding in world market centers. Thus, prices quoted in competitive or semi-competitive world fiber markets continue to govern or influence the terms of trading for a large share of world fiber purchases, irrespective of whether these transactions are conducted on private or government account.

Prices of most types of apparel fibers declined in early 1949, but as of June 1949 they were still from two to three and a half times the 1934-38 average (see Table 55). Prices of U.S. Middling, which had dropped sharply during the third quarter of 1948, remained fairly stable from then on, oscillating within 1 to 2 cents above support levels. Quotations for Egyptian cotton, which in 1947/48 had risen out of proportion to those of other growths, fell back nearer into line during the 1948/49 season. The price of Indian cotton, on the other hand, might have risen sharply if ceilings had not been imposed by the Government of the Indian Union. The cost of merino wool rose sharply in 1948 and, after a drop from February to April 1949, rallied again in May at levels still nearly three and a half times the prewar average. Crossbred prices followed the downturn early in 1949 and, in the case of 46's, continued to decline from April to May.

By contrast, the price of rayon staple fiber in the United States is quoted at only 17 percent above the prewar average. Prices fixed for the sale of raw silk in the United States, the world's major silk market, were reduced sharply by SCAP at the beginning of 1948, and now stand at 158 percent of the prewar average. The price relationship between raw silk and rayon has thus been brought more nearly into line with that prevailing before the war.

Prices quoted for jute and for the major hard fibers have risen even more sharply, compared with prewar, than these other fibers and have dropped less.

In 1947, while unit values of raw cotton and wool imports into a number of major consuming countries were high compared with prewar, the unit values of their exports of cotton and wool textiles were very much higher (see Table 56). In 1948, however, the trend was reversed. In the United Kingdom, Belgium, France, and Japan, unit values of raw cotton imports were up sharply from 1947 levels while those of cotton

TABLE 56.—COTTON AND WOOL: INDICES OF UNIT VALUES AND PRICES[1]

I. Raw Cotton and Cotton Textiles

Country	1. Raw cotton (imports)			2. Cotton textiles (exports)			3. Ratio 1:2		
	1947	1948	1949[2]	1947	1948	1949[2]	1947	1948	1949[2]
	(*Indices of unit values: 1938 = 100*)								
United Kingdom	258	455	408	278	345	356	93	129	115
Belgium	319	333	...	328	268	...	97	124	...
France	308	377	...	447	424	...	69	89	...
Japan	254	465	...	435	439	...	58	106	...
	1. Raw cotton[3]			2. Cotton cloth[4]			3. Ratio 1:2		
	1947	1948	1949[5]	1947	1948	1949[5]	1947	1948	1949[5]
	(*Price indices: 1938 = 100*)								
United States	375	367	345	457	415	322	82	88	107

II. Raw Wool and Wool Textiles

Country	1. Raw wool (imports)			2. Wool textiles (exports)			3. Ratio 1:2		
	1947	1948	1949[2]	1947	1948	1949[2]	1947	1948	1949[2]
	(*Indices of unit values: 1938 = 100*)								
United Kingdom	171	225	286	200	239	255	86	94	112
France	193	274	...	326	306	...	59	90	...
Belgium	172	197	...	201	160	...	86	123	...

[1]Indices based on unit values in U.S. dollars converted at International Monetary Fund official selling rates except for French unit values for the period from 1 November - 31 December 1948, for which IMF average rates were used for all imports and for exports to soft-currency areas; Japanese postwar unit values computed from dollar trade returns as quoted in SCAP, *Japanese Economic Statistics*.

[2]January-April.

[3]Averages of quotations on ten markets for qualities of cotton consumed in each of 17 constructions of cloth.

[4]Average for 17 constructions.

[5]January-June.

textile exports rose less in the United Kingdom, much less in Japan, showed little change in France, and declined in Belgium. In the United States, the ratios of raw cotton prices to prices of finished cloth ex mill also increased between 1947 and 1949.

WORLD TRADE IN TEXTILES

Before World War II, exports from Europe and Japan provided nine-tenths of all trade in cotton textiles and more than nine-tenths of the trade in wool and rayon fabrics (see Table 57). The most fundamental change from the prewar pattern is the eclipse of Japanese exports, which in 1948 were still little more than one-tenth of the 1938 level for cotton textiles, less than one-fourteenth for wool textiles, and only 2 percent for rayon textiles. It had been hoped that the need for direct dollar payments would be substantially relieved by an arrangement with the sterling area which provided for the exchange of Japanese exports, mainly of textiles, against raw materials, especially salt, Australian wool, and Malayan rubber. Sizable quantities of Japanese cotton gray goods were shipped to the United Kingdom in 1948 and re-exported after further processing, mainly to colonial markets. However, Japanese purchases in the sterling area fell short of expectations, and in early 1949 the British Board of Trade suspended further imports of Japanese gray goods because they might "involve the

United Kingdom in a dollar commitment." Continuation of the trade will presumably depend on the outcome of negotiations now in progress for a new trade agreement with Japan for the trading year beginning 1 July 1949.

European textile exports in 1948 were back to about nine-tenths of the 1938 level for wool and rayon and four-fifths for cotton. Britain's exports of wool textiles were 14 percent larger than in 1938, and its shipments of rayon fabrics reached two and a half times the 1938 level. At the same time, exports of cotton textiles from the United States receded from the exceptionally high levels of 1947. In general, the recovery of world textile trade has been very much slower than that of textile manufacture.

In part, the lowered ratio of textile trade to manufacture, like the lowered ratio of fiber trade to consumption, reflects the industrial development in a number of countries such as Argentina, Brazil, and India, which replace imported textiles by goods processed in their own mills from home-grown fibers. Another major factor has been increased textile consumption in the United States, the bulk of which is home-produced and is thus not reflected in increased international trade. And textile purchases by countries which continue to rely on imports for the bulk of their consumption have been held down by the shortage of external purchasing power and the high prices of textiles.

TABLE 57.—WORLD TRADE IN TEXTILES, 1947 AND 1948 COMPARED WITH PREWAR

I. Exports

Source	Cotton textiles		Wool textiles		Rayon textiles		Cotton textiles		Wool textiles		Rayon textiles	
	1947	1948	1947	1948	1947	1948	1938	1948	1938	1948	1938	1948
	(*Index 1938 = 100*)						(*Percentage of world exports*)					
United Kingdom	45	63	91	114	181	255	19	19	33	47	7	29
Other Europe	72	90	68	68	63	53	24	35	48	40	33	29
Japan	12	12	4	7	1	2	45	10	19	2	56	2
Europe and Japan	35	44	64	73	34	37	88	64	100	89	96	60
North America	458	288	–	–	900	733	5	22	–	9	3	40
Latin America	2,700	1,500	–	–	–	–	–	3	–	–	–	–
Other	90	90	–	–	–	–	7	11	–	2	1	–
WORLD	63	61	84	81	62	60	100	100	100	100	100	100

II. Imports

Destination	Cotton textiles		Wool textiles		Rayon textiles		Cotton textiles		Wool textiles		Rayon textiles	
	1947	1948	1947	1948	1947	1948	1938	1948	1938	1948	1938	1948
	(*Index 1938 = 100*)						(*Percentage of world imports*)					
Europe	98	102	79	75	80	67	9	15	34	31	17	19
North America	240	153	117	133	300	300	2	5	9	14	1	5
Latin America	41	27	56	56	109	112	16	7	13	9	14	27
Asia	42	39	85	69	21	21	47	30	19	16	47	16
Africa	72	80	62	50	92	92	22	30	11	7	11	17
Oceania	79	90	83	83	103	107	4	6	8	9	10	16
Other	–	–	175	200	–	–	–	7	6	14	–	–
WORLD	63	61	84	81	62	60	100	100	100	100	100	100

TEXTILE CONSUMPTION

Postwar per caput levels of textile consumption are strikingly different from prewar in a number of countries. In Germany, Austria, Japan, and Indo-China, per caput consumption is only one-half or less of the prewar average. In Bulgaria, Denmark, Finland, Greece, Ireland, and Indonesia, it has declined by one-half to one-third. By contrast, it has increased by one-third or more in Poland, Portugal, Switzerland, Canada, the United States, Uruguay, Malaya, and British East and West Africa. It has also increased significantly in Belgium, France, and Sweden.

Chart 13 shows the inequality of textile consumption levels in different parts of the world. In 1938 the least favored tenth of the world's population consumed little more than 2 percent of all cotton, wool, and rayon textiles, while the most favored tenth consumed nearly 30 percent. In 1948 the inequality was even more pronounced.

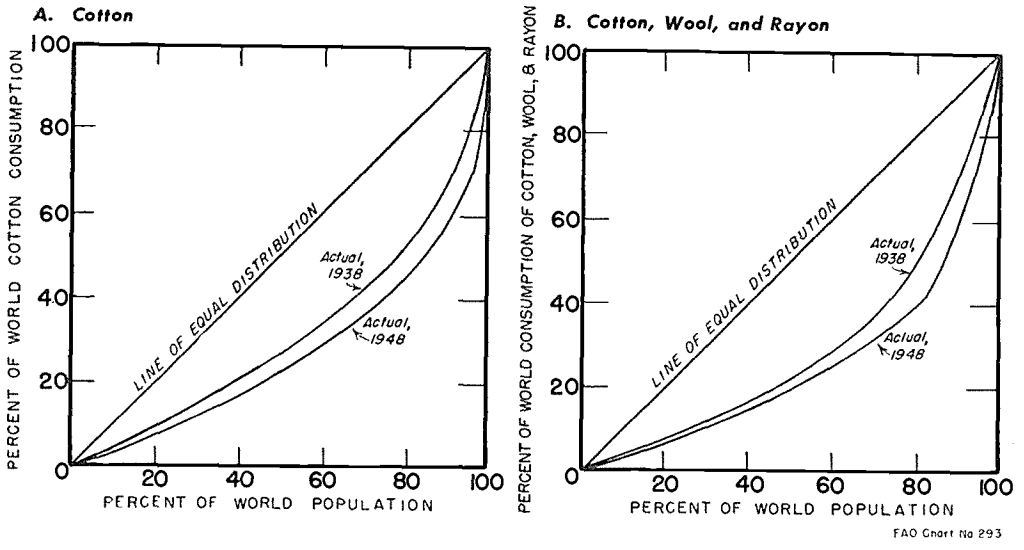
The United States, with 7 percent of the world's population, absorbed more than one-third of all cotton, wool, and rayon textiles consumed in 1948, and had the highest per caput consumption. Canada, Sweden, Belgium, and Switzerland came next (see Table 58). Together, these five high-income countries, accounting for just over 11

TABLE 58.—COTTON, RAYON, AND WOOL TEXTILES AVAILABLE PER PERSON, 1938, 1947, AND 1948

Continent and country	Total: Cotton, Rayon and Wool textiles			Continent and country	Total: Cotton, Rayon and Wool textiles		
	1938	1947	1948		1938	1947	1948
	(*Kg. per person*)				(*Kg. per person*)		
Austria	6.0	1.8	3.1	Cuba	4.8	4.6	3.9
Belgium	9.3	10.9	11.3	Ecuador	1.6	1.3	1.8
Bulgaria	4.5	2.6	2.9	Mexico	2.9	3.1	3.0
Czechoslovakia	5.1	6.3	6.6	Peru	1.9	2.3	2.3
Denmark	7.2	5.4	5.1	Uruguay	2.5	5.5	5.3
Finland	6.9	4.8	5.2	Venezuela	1.9	2.1	2.4
France	7.0	8.1	9.0	West Indies	3.5	3.1	2.4
Germany	8.2	2.5	3.7	LATIN AMERICA, TOTAL[1]	3.7	3.6	3.6
Greece	4.7	3.4	3.6				
Hungary	3.8	2.1	2.9	Burma	1.5	1.0	1.1
Ireland	4.4	4.2	3.3	Ceylon	2.6	1.2	1.2
Italy	4.2	5.7	4.4	China	1.7	1.4	1.4
Netherlands	8.2	7.6	8.7	India-Pakistan	2.2	1.9	2.1
Norway	6.2	7.0	6.2	Indo-China	1.1	0.5	0.5
Poland	2.8	3.3	4.0	Indonesia	0.9	0.6	0.6
Portugal	3.1	4.1	4.2	Iran	2.4	1.7	1.7
Rumania	2.6	1.7	2.0	Japan	9.1	1.6	1.5
Spain	2.4	3.2	3.2	Malaya	3.0	4.5	5.0
Sweden	9.0	12.5	11.5	Syria and Lebanon	4.6	3.8	3.6
Switzerland	7.5	12.3	11.2	Turkey	3.5	3.5	3.3
United Kingdom	12.4	10.3	10.9	ASIA, TOTAL[1]	2.3	1.5	1.6
Yugoslavia	3.3	2.6	2.4				
EUROPE, TOTAL[1]	6.3	5.5	5.8	Anglo-Egyptian Sudan	1.5	1.0	1.1
U.S.S.R.	3.7	2.3	2.5	British East Africa	0.9	1.1	1.3
Canada	8.4	13.6	12.0	British West Africa	0.6	0.8	0.9
United States	12.1	18.8	18.9	Egypt	3.1	2.9	2.9
NORTH AMERICA, TOTAL	12.0	18.4	18.3	Southern Rhodesia	3.4	2.8	2.2
				U. of S. Africa	3.2	3.2	2.9
Argentina	6.7	8.2	8.1	AFRICA, TOTAL[1]	1.5	1.3	1.3
Brazil	3.8	4.2	4.1				
British Guiana	2.6	3.3	2.4	Australia	8.5	8.4	9.7
Chile	3.8	4.3	3.4	New Zealand	5.5	6.9	6.7
Colombia	2.4	2.6	2.7	OCEANIA, TOTAL[1]	6.6	6.6	7.7
				WORLD TOTAL[1]	3.9	3.5	3.7

[1]Partially estimated by interpolation.

Chart 13.—Inequality of Textile Consumption Levels
1938 and 1948



percent of the world population, absorbed in 1948 nearly one-half of all textiles used in the world. At the other end of the scale, eight African and Asiatic countries (including China), accounting for 30 percent of the world's population, absorbed 9 percent.

OUTLOOK FOR 1949/50 AND 1950/51

The production outlook for the major fibers can be briefly summarized as follows:

Cotton. The world production outlook is dominated by the situation in the United States, where the planted area is reported to be 14 percent larger in 1949 than in 1948; given average weather, the crop may approximately equal the exceptionally high-yielding bumper harvest of the previous season. In most other cotton-growing areas, also, indications point toward some expansion of area. Unless growing conditions are poor, the world cotton crop may exceed the 1948/49 volume by 5 percent or more.

Wool. Production in the chief exporting countries has been stimulated by remunerative prices, but the downward trend of North American production shows no signs of being reversed. The world clip may be about 3 to 5 percent larger than in 1948/49, with a slightly more than proportionate increase of merino production.

Silk. World production in 1949 may reach from 25 to 30 percent of the prewar volume. In Japan, production is again expected to be about 10 percent higher than in the previous year. In Italy, although the drastic decline from 1947 to 1948 will probably be sharply reversed, output in 1949 is not likely to reach the 1947 volume.

Flax and Hemp. Further and possibly substantial increases in world production may occur, depending mainly on the degree of recovery in the Soviet Union. Nevertheless, output of both fibers, and especially of flax, will probably remain considerably below prewar levels.

Jute. According to unofficial reports, the area in Pakistan is 12.5 percent larger than in 1948/49, and the Indian area is larger by one-third. While early rains have lessened crop prospects, there seems to be at least a fair chance that the combined output of the two countries will be about 20 percent larger than in 1948/49, or about 90 percent of the prewar average.

Hard Fibers. Output in 1949 is expected to recover to within 5 percent of the 1934-38 average. Gains in sisal and henequen production should more than offset the prospective decline in abaca output.

Man-made Fibers. With added capacity and continuing expansion of output in most regions, world production of man-made fibers may again rise by more than 20 percent in 1949.

Aggregate output of major fibers in 1949/50 may be about 10 percent larger than in the previous season, with synthetics representing about 12.5 percent of the total as compared with an average of about 5 percent during the years 1934-38.

The 1949/50 outlook for world fiber consumption is largely influenced by economic prospects in the United States; if the recession goes no further, the level of consumption should recover somewhat from its recent decline. Moderate expansion may continue in a number of European countries and in Latin America and Asia. Imports of raw cotton and wool into ERP countries are planned at higher levels than the quantities imported in 1948/49. Sterling finances for fiber imports should not present major difficulties; the wool program will presumably be carried out, therefore, unless mill activity is depressed by declining demand for finished wool goods at home and abroad. As for cotton imports, sterling-area cotton, other than Egyptian, may again be rather scarce. At the same time, the hard-currency purchasing power of the ERP group will presumably be low, despite Marshall Plan aid. Japan's consumption of imported fibers hinges on its earnings from textile sales abroad, but there is little prospect that its textile sales against dollars will increase. General indications are that world fiber consumption will expand little in 1949/50, with cotton consumption dropping slightly from the 1948/49 level, wool consumption showing little change, and consumption of flax and hemp, jute, hard fibers, and synthetics increasing in approximate proportion to the increased output of these materials.

If these estimates are approximately correct, world fiber stocks in mid-1950 would be about as follows: Cotton stocks would be larger by about 25 percent than a year earlier, or equal to nearly eight months' consumption at the current rate, with a carry-over of U.S. cotton representing more than two-thirds of the world carry-over. Stocks of good apparel-type wool might be down to levels approximating those required for working capital. Reserves of other fibers would continue at generally low levels.

As to the outlook for 1950/51, indications point toward a continuation of all major production trends anticipated for 1949/50, except for a probable reduction of cotton area in the United States. In regard to consumption levels, the pace will be set again by general economic conditions in the United States and by the foreign

exchange situation in major fiber-importing countries. If industrial activity in the United States declines in 1950/51, the effects would be felt increasingly in other countries by that time. Low levels of U.S. imports and intensified competition of U.S. exporters would make it even more difficult for the rest of the world to earn the dollars required for their purchases of raw materials from hard-currency areas. On the other hand, if economic levels are high in the United States, and if some of the major obstacles to the smooth functioning of world trade can be overcome, world consumption in 1950/51 would almost certainly exceed prewar levels for all major apparel fibers except silk.

Looking farther ahead, the long-term prospects for the natural fibers are bound to be strongly influenced by the development of synthetic fibers and of new competing uses of other substitutes such as paper. The relation between prices of natural and synthetic fibers has changed in favor of the latter, compared with prewar. Moreover, foreign exchange considerations have prompted most of the major fiber-importing countries to give special attention in their long-term plans to the development of synthetic fiber industries.

As to production prospects, the amount of land and labor required per unit of cotton and other vegetable fibers may decrease, and the amount of capital per unit of land may increase. These developments may result from wider mechanization and from measures aiming at improved yields. Prospects of extending the world's sheep-grazing areas appear limited, but the carrying capacity of pastures can be improved, and there is still much scope for increasing the weight per fleece and improving the quality of wool produced in areas where pastoral methods are still primitive.

In a prosperous world, effective demand should be sufficient to absorb an expanded volume of natural fibers alongside increased quantities of synthetic materials, unless further drastic changes in price relationships and qualitative improvement of synthetics should fundamentally weaken the competitive position of natural fibers.

The decline in ratios of world fiber trade to fiber production and consumption, as well as the decline in the ratio of international textile trade to textile manufacture, may be expected to continue. These trends will be promoted by the growing importance of synthetic fibers, which can be produced where they are wanted, and by the continuing development of textile manufacture in countries producing the major natural fibers.

C. Fisheries Products

MANY UNDERDEVELOPED COUNTRIES are anxious to expand their fisheries. Such countries as Ceylon, China, Costa Rica, India, Pakistan, and Turkey have recently sought and obtained technical advice in this field, while some have placed orders abroad for equipment. Landings have already significantly increased in a number of minor producing countries, though not yet on a large enough scale to affect total world production.

In North America and Europe, catching capacity continues to increase, with emphasis on larger craft and improved fishing equipment. A decline in fish prices, which is envisaged in certain quarters, would create difficulties in countries where fisheries are expanding under relatively high production costs.

TRENDS IN QUANTITY PRODUCED

Landings in *Europe* in 1948 were about 700,000 metric tons greater than in 1947 and about 1.1 million metric tons above the prewar average (see Table 59). All countries of major importance except Germany surpassed their prewar output—Belgium, the Netherlands, Ireland, Denmark, Sweden, Poland, Iceland, and probably also the Faroes, by more than 50 percent, and Norway and France by 38 percent. Although a complex of factors have played their part, the increase in landings is due primarily to greater catching capacity.

The United Kingdom put 18 new long-distance trawlers into operation during 1948, and 40 additional vessels will start operations in 1949. Denmark launched 45 relatively large cutters in 1948 to replace some worn-out craft. A floating trawl recently invented in Denmark for fishing in the free water between the bottom and the surface of the sea is reported to be very efficient; it may well be the most important innovation in its field for many years. The Faroe Islands had 40 trawlers at the beginning of 1948, compared with 9 in 1939. Germany has acquired some trawlers by transfer from the United States; it has also programmed the building of 100 new craft, of which about 15 are under construction. The fleets of France, Ireland, the Netherlands, Norway, Portugal, and Spain have added several efficient new units. Since the cessation of hostilities several thousand echo sounders have been installed in the European fleet. Norway's long-term program envisages further investment equivalent to US $117 million in its fisheries industry during 1949-52. Of this amount, $40 million is planned for the construction of a number of small craft and

270 large vessels for deep-sea fishing and seal catching; $42 million for buildings and processing plants; $10 million for gear and equipment; and $25 million for repairs and maintenance.

During the winter season of 1948, weather conditions in northwestern Europe were very favorable, and Norway had unusually large landings of winter herring. Catches of cod along the Norwegian coast, however, were small, and other countries—the U.S.S.R. in particular—had a similar experience. There are signs of a downward trend in the abundance of cod in Arctic waters.

In 1949 conditions were less favorable, and catches for the first five to six months, especially of cod, were smaller than for the same period in 1948 (see Table 60).

Herring landings in Norway, though quite good, were considerably smaller than in 1948, and the winter herring fisheries in Iceland were a complete failure. A strike hampered the activities of Icelandic trawlers during the early part of 1949. Because of the decline in the North Sea yield per unit of effort, which is apparently due to excessive fishing, northwestern European countries are extending their activities to

TABLE 59.—LANDINGS OF FISH, PREWAR, 1946, 1947, AND 1948

Country	Average 1934-38[1]	1946	1947	1948	1948 as % of 1934-38
	(*Metric tons*[2])				(*Percent*)
Europe					
United Kingdom	1,162,100	1,031,900	1,138,600	1,195,700	103
Norway	1,055,700	933,300	1,205,300	1,454,100	138
France (1933-37)[3]	315,400	244,500	[4]306,600	[4]434,600	138
Iceland	268,900	368,200	477,200	464,700	173
Germany, Bizone (1938)[5]	669,000	264,800	279,800	380,200	57
Belgium and Luxembourg	39,900	74,000	81,200	[6]70,900	178
Faroe Islands	(30,000)	(60,000)	(70,000)	(80,000)	267
Denmark[7]	90,900	197,400	205,400	223,500	246
Netherlands	227,500	190,400	278,100	374,900	165
Sweden	116,000	183,900	163,400	[8]230,700	199
Finland (1933)	36,000	49,000	46,000	46,000	128
Ireland	10,500	21,100	18,300	23,100	220
Italy (1939)	120,000	160,200	132,500	[5]138,000	115
Spain (1940)	438,700	594,000	567,900	533,100	122
Portugal	245,500	285,600	282,700	271,200	110
Austria	(1,200)	(400)	(400)	(400)	33
Poland (1938)	[5](18,200)	23,300	39,500	48,200	265
TOTAL	4,845,500	4,682,000	5,292,900	5,969,300	123
North America					
United States of America (including Alaska)	1,927,000	1,996,000	2,345,000	2,040,000	106
Canada (excluding Newfoundland)	506,000	612,000	553,000	644,000	127
Newfoundland	[9]204,000	[9]377,000	[9]278,000	[9]375,000	184
TOTAL	2,637,000	2,985,000	3,176,000	3,059,000	116

NOTE: Figures in parentheses are estimates.
[1]Unless otherwise indicated.
[2]Round fresh weight unless otherwise indicated.
[3]Excluding shellfish.
[4]Metropolitan France only.
[5]Reported weight.
[6]Landings in Belgian ports 69,300.
[7]Faroe Islands and Greenland not included.
[8]Landings in Swedish ports 183,200.
[9]These figures are influenced by the fact that Newfoundland's landings are computed on the basis of exported quantities. The impossibility of providing for a carry-over of the 1947 production to 1948 for exportation accounts for a higher 1948 figure, while actually landings in this year were lower than in 1947.

more distant fishing grounds, for example the trans-Atlantic grounds. During 1948, seven Danish craft carried on experimental fishing off western Greenland, and during the summer of 1949 both Danes and Norwegians operated in inshore waters of Greenland. These and other recently developed activities will contribute to European landings of cod, but the results in 1949 will not counterbalance the net decline in cod fisheries in northwestern European waters. As the distant fleet catches mainly cod and haddock, the proportion of cod to choicer fish in the catch is likely to increase. Cod is not easily marketable in Northwestern Europe, whether fresh, frozen, salted, or dried. These countries, therefore, are likely to have an increased production of salted cod and related species for marketing in Southern Europe or in Latin America.

In *North America,* fishing activity is also expanding, but not as rapidly as in Europe. Total landings in the U.S.A. and Alaska in 1948 amounted to about 2.04 million metric tons. In the Pacific coast fisheries the outstanding features were the record catch of tuna and the decline in salmon and mackerel landings; the California pilchard catch showed only a slight increase over the low production level of 1947. On the Atlantic side, rosefish landings reached a new peak, and menhaden landings remained at a record level. Although the U.S. fishing fleet was augmented by new additions at three to four times the prewar rate, the total catch remained unchanged, largely because of the sharp drop in Pacific salmon and pilchard catches.

Newfoundland's confederation with Canada in 1949 joined two of the world's most important fish-producing countries. Both have comparatively small populations in relation to their fish production and both require export markets for their surplus. Canada (excluding Newfoundland) showed an increase in 1948 in both the Atlantic and Pacific coast production of demersal species. Landings of Pacific salmon and Atlantic herring declined but the Pacific herring catch showed a large increase.

In recent years, there has been considerable improvement in Canadian fishing craft and gear. In the marine fisheries, the number of boats over 40 tons has increased by about 2.5 times, and the number of vessels of over 20 tons has more than doubled. The number of small boats of the inshore type (under 10 tons) has decreased, while those from 10 to 20 tons have increased by 50 percent. Sailing vessels have been gradually fitted with gasoline or diesel motors, or replaced by boats thus equipped.

TABLE 60.—PRELIMINARY FIGURES, 1949 LANDINGS COMPARED WITH LANDINGS DURING THE SAME PERIOD IN 1948

Country	Period	Landings		1949 as percentage of 1948
		1948	1949	
		(*Metric tons*)		(*Percent*)
Canada[1]	January-May	192,199	159,130	82.8
Denmark	January-June	96,507	106,021	109.9
Iceland	January-May	233,393	140,950	63.1
Ireland[1]	January-May	10,995	4,132	37.6
Netherlands	January-May	54,104	50,058	92.5
Norway[2]	January-June	1,015,747	714,160	70.3
United Kingdom	January-June	478,189	461,130	96.4
TOTAL		2,081,134	1,635,581	79.0

[1]Sea fisheries only.
[2]Winter herring and cod only.

Newfoundland production of salted cod was less in 1948 than in 1947 because of excessively stormy weather and a serious shortage of bait for inshore and bank fisheries. The Labrador fisheries showed an improvement. In 1948 production of fresh and frozen fish showed an increase over 1947.

Available estimates show that the landings in *Latin America* increased from some 250,000 metric tons annually during the immediate prewar years to some 460,000 tons in 1947, or by more than 90 percent. On the basis of incomplete information, 1948 landings have been estimated at 490,000 tons.

World scarcity of fish and other food during World War II encouraged expansion of Latin American fisheries, and the production of salted products was developed in some countries to substitute for salted cod previously imported from Europe and North America. After the war, the traditional sources of supplies became available again, but local fisheries continued to expand.

The *Far East* is one of the most important fish-producing areas in the world. Production includes large quantities of salt-water fish, crustaceans, mollusks, and also fresh-water and brackish-water species. Research and development work in this area is being encouraged and co-ordinated by the Indo-Pacific Fisheries Council under the auspices of FAO.

In the non-self-governing British territories of the Far East—Malaya, Sarawak, North Borneo, and others—the British authorities are extending research and experimenting with new fishing techniques. Pakistan is formulating plans to expand its marine and inland fisheries and is encouraging fish-pond farming. Two fisheries research trawlers and six other craft are being sought for biological surveys and experimental fishing and plans are being made for the construction of a modern fishing harbor at Karachi. Thailand's production in 1948 was adversely affected by poor catches and by a heavy export duty. The duty has now been reduced, and an increase in production is expected. Malaya, an important producer, has made excellent progress in rehabilitating its fisheries to the prewar level of production. A resumption of its export trade in salted fish may be expected with the return of more settled conditions. Hong Kong has restored the productivity of its fisheries, but is facing serious difficulty in marketing its produce because of the unsettled economic conditions in southern China.

According to most recent statistics, Japan's production decreased from 2.8 million metric tons in 1947 to 2.6 million metric tons in 1948. Increased supplies of fishing requisites should have helped augment production, but sardine and herring stocks show great fluctuations and appear at present to be declining. A greater proportion of the catch seems to be used for human food than in the prewar years. Oil and meal production, which was substantial before the war, remains at a low level. The demarcation of fishing areas open to Japanese fishermen is an important limiting factor in Japan's production.

In *Oceania* production increased only slightly; general improvements continue in craft, gear, the training of fishermen, and methods of handling and utilizing the catch. The canning industry, developed during the war years, is experiencing difficulty in obtaining sufficient and regular supplies of suitable high-quality raw materials. Great interest is shown in the possibilities of pelagic fishing in these waters, mainly for tuna, to supply the needs of the canning industry.

The Union of South Africa (including the territory of Southwest Africa) and the Portuguese colony of Angola are practically the only *African* countries south of the Sahara with commercially important fisheries. In South Africa the trawler fleet was augmented by the acquisition of trawlers from Europe, including larger-sized trawlers from United Kingdom yards. In 1948 the fleet consisted of 38 steam and motor trawlers, as compared with about 25 vessels prewar. Trawl-caught landings in 1948 were double the prewar peak of approximately 18,000 metric tons. The production of pelagic species from the west coast of southern Africa continued to expand rapidly (60,000 tons compared with 10,000 to 15,000 tons prewar) to supply raw materials (pilchards in particular) for the newly established canning, fish-oil, and meal-reduc-

TABLE 61.—ANTARCTIC WHALING, SELECTED PERIODS, 1934/35 TO 1948/49

Period	Factory ships	Shore stations	Catching boats	Whales caught[1]	Oil production[2]
	(*Number*)				(*Metric tons*)
Average 1934/35-1938/39	28	2	212	36,355	464,300
1945/46	9	3	93	13,387	138,600
1946/47	15	3	147	25,593	328,500
1947/48	17	3	183	31,318	356,300
1948/49	18	3	211	[3]31,123	[3]373,500

[1]Includes blue, fin, humpback, sei, sperm, and other whales.
[2]Includes both whale and sperm oil.
[3]Preliminary figures.

TABLE 62.—PRODUCTION OF FISHERIES END PRODUCTS IN CERTAIN COUNTRIES, 1934-38, 1946, 1947, AND 1948

Item	1934-38	1946	1947	1948	1948 as percentage of 1934-38
	(*Metric tons*)				(*Percent*)
Fresh and frozen herring and related species, exports[1]	199,100	106,900	153,200	217,400	109
Fresh and frozen fish (excluding herring) exports[2]	141,500	291,400	306,000	373,000	264
Salted cod and related species, production[3]	239,600	194,900	253,100	203,800	85
Salted herring and related species, exports[4]	314,100	259,400	240,500	288,100	92
Stockfish[5]	25,300	13,200	15,000	8,500	34
Canned herring and related species[6]	182,000	237,700	229,500	220,100	121
Canned salmon[7]	202,300	130,700	156,500	133,300	66
Canned tuna[8]	23,900	42,000	51,600	61,700	258
Herring meal[9]	729,300	215,700	204,400	296,000	41
Herring oil[10]	[11]220,700	102,500	100,800	130,400	59
Whale and sperm oil[12]	508,300	160,600	369,800	397,600	78

[1]Belgium, Canada, Denmark, Finland, France, Germany, Iceland, Ireland, Netherlands, Newfoundland, Norway, Sweden, United Kingdom, and other countries.
[2]Belgium, Canada, Denmark, Iceland, Netherlands, Newfoundland, Norway, Sweden, and United States of America.
[3]Dried basis: Canada, Faroe Islands, France, Greenland, Iceland, Newfoundland, Norway, St. Pierre and Miquelon, Portugal, Spain, Italy, United Kingdom, and U.S.A.
[4]Canada, Iceland, Netherlands. Newfoundland, Norway, Portugal, Sweden, United Kingdom, and other countries.
[5]Norway and Iceland. Figures for Iceland are based on exports; those for Norway on production, 1946-48.
[6]Algeria, Canada, Denmark, France, French Morocco, Italy, Norway, Portugal, Spain, United Kingdom, and U.S.A. (including Alaska).
[7]Canada and U.S.A. (including Alaska).
[8]U.S.A. only.
[9]1935-39 average, except for Japan, where 1937 is used.
[10]Canada, Iceland, Japan, Newfoundland, Norway, and U.S.A. (including Alaska).
[11]1935-39 average, except for Japan, where 1934-38 average estimate is used.
[12]All whaling grounds.

tion plants on the Union's Atlantic seaboard. In the non-self-governing African territories of the United Kingdom, France, and Belgium, fisheries research stations are being established and experimental fishing craft are being introduced. A trawler ordered in the United Kingdom for Gambia was expected to start operations about the middle of this year. Southern Rhodesia, which has no access to marine fisheries, is giving attention to fish farming. Various colonial authorities are investigating the possibilities of productive fisheries in the rivers and lakes of East and Equatorial Africa.

WHALING

During the 1948/49 whaling season 1 floating factory and 28 catching boats were added to the Antarctic whaling fleet. The catch totaled 17,200 blue-whale units, of which 15,900 were processed by floating factories. The lower production of whale oil as compared with prewar years (see Table 61) is due to the international agreement limiting the pelagic catching of baleen whales to ocean areas south of 40 degrees south latitude. In 1949, threre was an increase of 17,000 metric tons over 1948 in the output of oil, explained by a higher yield of oil per blue-whale unit and also by a larger catch of sperm whales, which are not at presented protected by international agreement.[1]

The total number of floating factories is much smaller than before the war, but the size and efficiency of each unit is greater. Floating factories have increased in size until they now average 14,134 gross tons (compared with 12,669 gross tons in 1934-39). There are 10.6 catching boats per floating factory (1934-39: 7.1), and the catching boats average 398 gross tons (1934-39: 281) and 1,558 horsepower (1934-39: 1,043).

As the number of whales which can be taken in pelagic whaling is limited, the capacity of the whaling fleet is not likely to increase substantially. Declining prices for whaling products also tend to discourage further investment. The recent decision to open the whaling season on 22 December instead of 15 December and to carry on one week longer in April is expected to increase the oil output per blue-whale unit somewhat because the whales are fatter toward the end of the season.

Owing to the limitations on catching by factory ships, shore stations may be expected to increase their activities, since there is no limitation on the number of whales each station can take within the six consecutive months they are allowed to operate. Their contribution to the oil supply is likely to expand.

CHANGES IN OUTPUT OF END PRODUCTS

Table 62 gives data on prewar and postwar production of various fish products. Production of fresh and frozen herring increased substantially in 1948, owing to favorable weather conditions in the winter season; and production of fresh and frozen fish other than herring, which in 1947 had already more than doubled the prewar level, was greater by some 67,000 metric tons in 1948. The expansion was widely

[1]In calculating the total production of whale and sperm oil, it was assumed that the production at shore stations outside the Antarctic was the same in 1948 as in 1947. If there was an increase, which is likely, the total production may have exceeded 400,000 tons.

distributed among countries, but most marked in the United States. Production of salted cod and related species declined, a result of reduced landings of these species in Europe and the continued expansion in fresh and frozen products. These factors also explain the decline in stockfish production. Production of canned herring and related species remained high in 1948, largely because of the high level of production in North America.

The low level of herring meal and oil production results mainly from the great drop in Japanese output, which has hardly begun to recover. Other countries, and Norway in particular, are producing much more than before the war. In the Union of South Africa, for example, the production of fish oils is being expanded, and vitamin-oil production has become an important industry. Production of fish meal is also expanding in South Africa; the 1948 output, estimated at 15,000 tons, is sufficient to meet the domestic demand for meal as animal feed.

INTERNATIONAL TRADE

Table 63 indicates the export trend in six countries which account for 40 to 50 percent of the total foreign trade in fisheries products. In all countries which have made information available except the United States, fresh and frozen products repre-

TABLE 63.—EXPORTS OF FISHERIES PRODUCTS, 1938, 1946, 1947, AND 1948[1]

Country	Year	Total	Fresh and frozen	Salted, dried, or smoked	Canned	Crustaceans and mollusks	Other edible aquatic products	Fish oil	Fish meal and fertilizer
		(*Metric tons*)							
Canada	1938	163,400	49,900	42,400	28,400	9,000	—	14,200	19,500
	1946	236,900	106,600	49,000	67,800	11,500	ø	2,000	ø
	1947	216,000	92,200	44,000	69,100	9,800	ø	900	—
	1948	223,100	96,400	49,200	39,900	11,300	ø	4,600	21,700
Denmark	1938	56,600	[2]49,900	4,500	400	[2]	—	1,800	—
	1946	95,800	[2]82,300	12,700	300	[2]	—	500	—
	1947	99,100	81,800	15,400	1,500	ø	—	400	ø
	1948	103,100	79,900	16,900	2,600	2,500	—	1,200	—
Iceland	1938	147,900	17,400	80,200	ø	100	—	27,900	22,300
	1946	167,700	96,700	28,800	500	(—)	—	25,300	16,400
	1947	165,700	87,600	35,300	300	(—)	—	25,900	16,600
	1948	257,200	151,800	28,400	1,000	(—)	—	36,400	39,600
Netherlands	1938	195,500	20,700	76,700	600	46,100	—	[3]50,000	900
	1946	46,200	6,400	14,900	1,400	23,400	—	ø	100
	1947	123,200	12,800	48,800	6,500	46,600	—	7,200	1,300
	1948	119,300	13,400	48,900	5,300	44,100	—	5,200	2,400
Norway	1938	377,500	120,100	115,700	25,400	3,400	—	32,400	80,500
	1946	323,500	80,800	185,400	25,900	1,400	—	19,700	10,300
	1947	377,700	136,000	172,300	31,400	4,200	—	25,400	8,400
	1948	435,000	182,800	174,200	31,600	3,800	—	29,000	13,600
United States of America	1938	56,000	3,600	1,700	44,000	6,400	1,400	1,200	1,300
	1946	100,000	700	5,500	72,500	13,100	1,500	6,600	100
	1947	105,600	1,000	1,700	82,000	9,400	1,900	9,100	500
	1948	54,100	1,400	900	34,300	7,900	700	8,800	100
TOTAL FOR THESE COUNTRIES	1938	996,900	261,600	321,200	95,200	65,000	1,400	128,000	124,500
	1946	970,100	373,500	296,300	168,400	49,400	1,500	54,100	26,900
	1947	1,087,300	411,400	317,500	190,800	70,000	1,900	68,900	26,800
	1948	1,191,800	525,700	318,500	114,700	69,600	700	85,200	77,400

—Indicates nil.
øIndicates negligible.
[1]Some miscellaneous products are not included.
[2]Crustaceans and mollusks included with salted, dried, or smoked.
[3]Might include some whale oil.

sent a higher proportion of total fish exports than in the prewar period. Iceland increased its export of fresh and frozen products from 17,000 tons in 1938 to 88,000 tons in 1947 and 152,000 tons in 1948, while its exports of salted, dried, and smoked products declined from 80,000 tons in 1938 to 28,000 tons in 1948. In 1947 and 1948, the United Kingdom imported some 217,000 tons of fresh and frozen fisheries products, compared with 83,000 tons in 1938. Countries exporting fresh fish, however, fear a decline in their markets because of more fishing activity in the larger consuming countries. A decline in the United Kingdom's imports from 85,000 tons in January-March 1948 to 65,000 tons during the same period in 1949 may or may not indicate a development in that direction. It is clear, however, that Germany is still far from adequately supplied, and its imports of fresh and frozen products increased considerably during 1949; in January-March 1949, 126,000 tons were imported, compared with 77,000 tons during the same period in 1948.

Available data on eight exporting countries in the Northern Hemisphere reveal that the relative importance of markets has changed considerably since the prewar period. Measured in value, some 54 percent of Canada's exports of fisheries products in 1947 went to the United States, compared with 46 percent in 1938. During the same period Newfoundland's exports to Canada and the United States increased from 18 percent to 42 percent of the total value. This situation is partly due to a marketing pattern established during the war years and partly to the desire to expand the production of frozen products for the dollar markets. Canada has turned from its traditional sterling markets to the United States. In 1938 the sterling markets absorbed 41 percent of total Canadian exports of fish; in 1948 they took only 10 percent.

In Europe, the large exporters are trading more with the U.S.S.R. than in the prewar years. Iceland, which made no shipments to the U.S.S.R. in 1938, marketed 20.5 percent of its exports there in 1947 (but much less in 1948). For the Netherlands, shipments to the U.S.S.R. in 1938 amounted to only 1.4 percent of the export value; in 1947, to 10.6 percent. The corresponding figures for Norway are 0.3 percent in 1938 and 5.5 percent in 1947. The United Kingdom, however, which sent 8 percent of its fish exports to the U.S.S.R. in 1938, has imported fisheries products such as canned salmon and crab meat from that country since the war.

TRENDS IN PRICES AND MARKETING CONDITIONS

Fish prices in the United States during the first months of 1949 declined more rapidly than would be explained by the normal downward trend at this season, dropping about 15 percent below the prices for the corresponding months in 1948. Canadian wholesale fish prices declined only slightly and rallied again from April onwards. As regards canned salmon, the reduced size of the pack in the United States and Canada has helped to maintain prices in the face of declining European imports and may have strengthened the market for canned tuna.

Fish-oil prices declined in both the United States and Canada. From a level of 15 U.S. cents per pound for crude sardine oil (Pacific Coast) in the last part of 1948, they fell in 1949 to as low as 6 cents, but subsequently rose again. Marine-oil prices in Europe have also shown some decrease.

Little information on fish prices in Europe is available, since a large proportion of the fish is sold under trade agreements. The trends have been conflicting. Forward

sales of salted herring caught off Iceland during the 1949 summer season have been negotiated at prices below those of 1948. Similarly, export prices of iced cod and related species from Iceland and Norway in May 1949 were 4 to 5 percent below the level of May 1948. However, because cod landings fell off in 1948/49 and because a higher proportion of the catch was marketed in fresh and frozen form, prices in the salted cod market remained firm. On the whole, prices have declined for the cheaper qualities of fish and have remained high for halibut, lobster, and other more expensive products. This reflects the general improvement in European food supplies, which enables consumers to exercise greater discrimination in the kinds of fish they purchase.

The plans reported from many countries for increasing the catching capacity of their fishing fleets are likely to result in larger landings in the near future, with consequent effects on prices. Perhaps the severest competition will be felt in the United States market, in which several fish-exporting countries reckon upon earning much-needed dollars. Should fish prices drop to any considerable extent, difficult situations may develop for those countries which have rehabilitated their fishing fleets during the recent years of inflated prices.

As yet such developments have not occurred, and profits to producers continue relatively favorable. The 1949 annual report from Norway to FAO states that "the fishermen are one of the population groups which have increased their earnings most during the last ten years. From a standard of living which was dangerously low in the interwar period, the boom has improved the income of fishermen to such an extent that, in some cases, they are on a level with industrial workers."

D. Forest Products

THE CHIEF PROBLEM affecting supplies of forest products lies today in the field of international trade and is intimately tied up with maladjustments of international exchange. A shrinkage in the flow of dollars abroad due to general cuts in United States imports has caused other countries, notably the United Kingdom, to scale down their lumber imports from Canada and the United States and to seek supplies outside the dollar area. Production in softer currency countries capable of producing export surpluses has thus been stimulated, while stocks have tended to accumulate in North America. At the same time there has been a virtual cessation of United States purchases of wood pulp from Sweden, Finland, and Norway, which have depended heavily on pulp exports to balance their dollar trade. These countries produce over 60 percent of exportable world supplies of pulp, and the closure of American markets could result in a shift, temporary or permanent, to alternate markets.

World output of roundwood in 1949 is expected to be slightly below the 1948 estimate of 1,430 million cubic meters,[1] declines in North America and the Far East[2] probably more than offsetting gains in the Soviet Union, Europe, and the dependent territories of European nations, plus minor increases in Australia and New Zealand.

The features of the 1949 situation will probably be as follows: World lumber production will fall somewhat below the 1948 level, since the North American reduction will exceed increases elsewhere. A relatively large reduction will occur in pulpwood output, because stocks at pulp mills are high. Some of this timber will be diverted to the production of pitprops, which will be slightly over the 1948 level. The output of other products such as poles, sleepers (ties), and hardwood specialties will be at approximately the 1948 level. Total output of veneers and plywood may be somewhat larger than in 1948, but the total for wood pulp will drop below 1948, although some new mills will have come into production.

Domestic stocks of primary forest products in North America, normally representing three to nine months' production, are sufficiently large in relation to likely internal consumption levels to meet any deficit in production through the rest of 1949 and 1950. The change from a seller's to a buyer's market has caused relatively slight declines in internal prices. But the accumulated stocks may induce a selling drive that would result in a further fall in prices. This in turn could stimulate construction activities and paper consumption.

The over-all decline in forest output, if these forecasts are accurate, is likely to be moderate. It will be a decline in countries that could readily raise production in

[1]See FAO's *Yearbook of Forest Products Statistics, 1949* (in press).
[2]The decline in the Far East reflects disturbed political and social conditions.

keeping with an expansion in economic activity, and although there may be little change through 1950, reports of member governments to FAO show expectations of a recovery in output in 1951.

At this stage there will be a new force to reckon with—the re-emergence of both Germany and Japan as importing countries of major significance (and as exporters of manufactured products). Import requirements of Bizone Germany for 1950/51, as reported to FAO, are as follows:

	Thousand cubic meters
Sawn softwoods	366.1 (Around 80,000 standards)
Sawn hardwoods	58.8
Pitprops	720.0
Pulpwood	810.0
Veneer/plywood	3.8
Poles and piling	30.3
Other industrial wood	2.4
TOTAL	about 2,000

Japanese requirements for 1950 are reported to be in the order of 240,000 cubic meters of saw and veneer logs, but only about 5,000 standards of lumber. Before the war Japan imported about 300,000 standards of lumber annually. But it also drew on Korea and Manchuria for supplies, which were not classified as imports.

Looking much further ahead, if wood consumption levels of the underdeveloped countries were to approach the levels current, for example, in Switzerland or New Zealand, it would be necessary to double the present volume of world wood output.[3] The forests of the world, given reasonably good forest management, could progressively supply yields of this order. In fact, Canada, already the world's largest exporter of forest products, could more than double its present output.[4]

The declared policy of most governments today is to bring about the maximum use of forest resources, and not to let them lie idle and unused. This is the objective of the United States of America, the Soviet Union, the British Commonwealth, and Brazil, which in the aggregate hold responsibility for more than 85 percent of the world's productive forest area. But there is no evidence that the desired balance between consumer needs and production will come about of itself; the nations must continue to bring about an expanding world supply of diverse forest products for a growing world population.

TABLE 64.—INDICES OF LUMBER PRICES, 1946-49

Item	1946	1947	1948	1949 May
	(*1938 = 100*)			
U.S.A. (domestic)[1]	204	318	356	326
U.K. (imports)[2]	318	405	411	[3]397
Canada (exports)[3]	316	366	377	...

[1]All lumber.
[2]Sawn softwood.
[3]Average, Jan.-May.

[3]Progress in the underdeveloped countries is tied closely to industrialization. No country has ever attained success as an industrial nation without an ample, economical, and dependable supply of fuel. Many of the underdeveloped countries depend in large measure on wood for energy production. Wood is not an efficient fuel and in many areas must be brought from increasingly greater distances each year. It is evident that steps must be taken to develop alternative sources of energy.

[4]See *Proceedings of the Third World Forestry Congress*, No. 2, "Forest Resources and Human Needs for Wood."

SAWN LUMBER

During most of 1948 world output of softwood and hardwood lumber continued to show the upward trend characteristic of the postwar years. Production has increased from some 30.8 million standards in 1946 to around 39.4 million standards in 1947 and 41.3 million standards in 1948, a level above the prewar average. Roughly 75 percent of the world lumber output is represented by softwoods.

In Europe, during the latter part of 1948, the lumber markets were comparatively easy except for imports from hard-currency areas. Developments during the first half of 1949 indicate that supplies, at least of the higher grades, are again short. Evidence for this statement is the exceptional early close of export sales. By 1 July the Scandinavian countries had contracted for 90 percent of their proposed exports. Strong efforts have also been made by importers to conclude contracts with the U.S.S.R.

In North America, available supplies of both softwood and hardwood lumber appear to have exceeded effective demand in 1948 and the first half of 1949, a situation attributed mainly to the recession in economic activity.

On the whole, effective demand has been influenced in international trade by currency difficulties, and in domestic business by a general reluctance to buy in anticipation of a decline of prices. The downward price trend in the lumber industry has been considerably smaller than in the wood pulp and paper industries, and has so far resulted in a weakening of prices for lower grades only.

The following percentages, based on figures reported to FAO, indicate anticipated levels of lumber production for 1950 in countries covering about 80 percent of world output:

	Production in 1950 as percentage of 1948
Europe	103
U.S.S.R.	180
U.S.A. and Canada	94
Australia and New Zealand	109
Japan	85
WEIGHTED AVERAGE	112

EUROPE

Output of softwood lumber in Europe (excluding the U.S.S.R.) in 1948 was about 33.9 million $m^3(s)$[5] or 7.25 million standards, an increase of around 5 percent over the previous year. Output of sawn hardwood totaled 8 million $m^3(s)$, an increase of almost 10 percent.

At the beginning of 1948, urgent postwar needs for timber having already been met, the effective import demand for softwood lumber (including sawnwood equivalent of sawlogs) of the main deficit countries in Europe was set at 2.1 million standards, in the light of shortages of appropriate foreign currencies and other financial considerations. "Essential needs," defined by countries participating in the work of the Timber Committee of the Economic Commission for Europe as potential requirements, were estimated at a much higher figure—3.6 million standards.

By the end of the year Europe's gross softwood imports totaled 2.3 million standards, of which 1.8 million came from within Europe and 0.4 million (as compared with 0.8 million in 1947) from Canada and the United States. Thus the wide gap

[5] $m^3(s)$ = cubic meters (sawn), as distinguished from $m^3(r)$—cubic meters (round).

between supply and demand in the European timber situation, which seemed evident from the end of the war, changed into a temporary equilibrium in 1948. Because of the general easiness, the ECE Timber Committee recommended that no "buying limits" be set up for the importing countries in 1949.

But this equilibrium is an unstable one. Essential needs have not yet been met. In many countries, such as Belgium, the Netherlands, France, Italy, and Greece, building activity in early 1949 suffered a definite setback or came almost to a standstill. All European governments have still to cope with serious housing shortages.

Moreover, there is a major change in respect to Germany. Cessation of German exports of lumber and sawlogs after 1949 will decrease European export supplies by perhaps half a million standards, and Germany's urgent import demands for 1949 have already been estimated at well over 200,000 standards. A first step towards reopening the German markets for timber imports was taken in June 1949, when US $11.25 million was reserved for one year's purchases by western Germany of sawn and planed wood equivalent to some 65,000 standards from Sweden. This has been followed by purchases from Finland and is scheduled to be followed by imports from Austria (which has already made several attempts to regain a traditional German market), and perhaps from Czechoslovakia.

The supply situation may improve as a result of the special credit arrangements now being negotiated for purchases of forestry equipment by certain countries against commitments to increase timber production and exports. These negotiations are being conducted, on the one hand, by the International Bank for Reconstruction and Development in close consultation with the secretariats of FAO and ECE, and on the other hand, by a number of European timber exporting and importing countries.

The latest estimates of production and exports within the continent during 1949 and 1950 promise a definite improvement in Europe's timber balance. Production may increase by half a million standards in 1949 and by another half million or more in 1950. A slight increase could occur in the Scandinavian and Finnish export shipments. The Swedish housing program provides for a progressive reduction of timber in the construction of dwellings from the present rate of about 5.8 standards per dwelling unit to 4.8 standards in 1951, and is thus expected to release additional quantities of timber for export. Additional lumber may be available from Finland as a result of a shift from pulp to lumber production.

In view, also, of a probable increase in exports from the U.S.S.R. and possible exports from Brazil, any gap between supply and demand in Europe would be of such dimensions as could be filled by exports from North America. But this is where the main problem lies.

The United Kingdom, where the gap between supplies and potential demand is greatest and where the current rate of softwood consumption is down to about 45 percent of the 1934-38 average, was forced in mid-1949 to cut purchases from the dollar area by one-quarter. This new austerity program, therefore, seems to rule out greater North American supplies unless special arrangements are made. It does mean, however, that market prospects for European export lumber remain good.

The United Kingdom price lists for Swedish and Finnish goods, agreed upon in April 1949, confirmed the trend toward restoring the spread between prices for high-grade and lower-grade lumber. On the average, prices went down some 4 to 5 percent from the 1948 level, the drop of some lower-grade prices being 7 to 15 percent. As usual, United Kingdom prices have also influenced prices on other timber markets.

The relatively slight price decline on the lumber market has been strongly felt by the sawmill industries of several countries, where any further downward trend in export prices would reduce forest-workers' wages.

U.S.S.R.

During the period 1935-38 the U.S.S.R. exported an annual average of 1.1 million standards of softwood lumber. Since the war, exports have been almost negligible, Soviet supplies of sawn softwood to European markets in 1948 being only about 56,000 standards. The position of the Soviet Union is, of course, dependent on the huge reconstruction and housing need with which the Government has still to cope. According to Soviet estimates,[6] the country's losses in output capacity (in terms of current output) during the last war corresponded to 64 million cubic meters of felled timber, or 27 percent of the total capacity in 1940. On the same basis of calculation, the losses in sawmill capacity amounted to 2.57 million standards, equaling 34 percent of the 1940 capacity.

The current five-year plan provided for a production of about 4.6 million standards of sawn lumber in 1948, and, according to official statistics, this target was exceeded. Production is scheduled to attain 8.3 million standards by 1950, or 109 percent of the 1940 output.

Domestic supplies of sawn lumber have been supplemented by considerable quantities imported from Finland, and probably by other quantities drawn from the Soviet Zone of Germany and elsewhere. Since 1945, up to 30 June 1948, when war reparations deliveries of timber were stopped, Finland had shipped 350,000 standards of sawn softwood and 1.22 million cubic meters of roundwood to the U.S.S.R. as reparation and restitution deliveries. In addition, Finnish exports under normal trade agreements with the U.S.S.R. included nearly 52,000 standards of sawn softwoods in 1947 and over 72,000 standards in 1948.

The re-equipment of the Russian sawmill industry has advanced favorably, and reorganization of transport has made possible the exploitation of forests previously inaccessible. A large proportion of domestic lumber needs has apparently been met, and the increasing lumber production has reportedly allowed the building of substantial reserves. Although the resumption of exports on the prewar scale will probably occur only gradually, there is always the possibility that the Soviet Union might in the near future increase its exports very considerably.

UNITED STATES AND CANADA

Combined output of softwood and hardwood lumber in the United States in 1948 reached 18.2 million standards, compared with 17.9 million standards in 1947. Out of this total, softwood contributed 14.30 million standards, according to industry estimates, as against 14.11 million standards in 1947.

The value of all new construction, both public and private, in the United States will reach a record total of $19,000 million in 1949, according to estimates by the U.S. Departments of Labor and Commerce. Nevertheless, it is expected that domestic requirements in 1949 for softwood and hardwood lumber for construction purposes—11.78 million standards—will be 3.5 percent lower than in 1948. An explanation is

[6]Quoted in "The Soviet Union since World War II." *Annals of the American Academy of Political and Social Science,* May 1949.

that private construction is expected to drop 5 percent from the 1948 level, while public construction, which consumes relatively less timber, will increase more than 22 percent.

United States lumber exports have also declined, the drop amounting to more than 50 percent between 1947 and 1948. During the first half of 1949, exports of combined softwood and hardwood lumber were 15 percent below the rate for the corresponding period of 1948; shipments to the United Kingdom, Argentina, China, and the Union of South Africa declined considerably, but those to some destinations increased.

Diminished demand has resulted in a slight decline in production of lumber and lumber products, from 145 percent of prewar in 1948 to 127 percent in the first half of 1949.

As of 9 July 1949, stocks in mills in the main producing centers of the South and of the west coast of the United States were more than 35 percent higher than a year before. At the same time, unfilled orders on these mills were about 32 percent lower than a year earlier.

Domestic lumber prices in the United States have fallen somewhat, but most prices for higher grades have remained firm. According to official forecasts, domestic consumption in 1950-51 will attain only about 17.3 million standards, production being about 16.9 million and net imports about 900,000 standards.

Canada's production of softwood and hardwood lumber in 1948 declined by about 14 percent from the previous year, and for the whole of 1949 is expected to be about 2 to 3 percent below 1948.

The Canadian sawmill industry is dependent on export trade to the extent of 40 to 50 percent of its total output, the United States being its principal market. Between 1947 and 1948 Canada's lumber exports dropped nearly 10 percent from the 1947 levels to about 1.2 million standards, 98 percent of which was softwood lumber. Exports to the United States increased from 548,000 standards in 1947 to 824,000 standards in 1948, offsetting to a considerable extent the serious drop in shipments to all other destinations. The United Kingdom, second only to the United States as a buyer of Canadian lumber, took only 286,000 standards, compared with 574,000 standards in 1947. During the first quarter of 1948, Canada's lumber exports further declined by 31 percent below the corresponding period of 1948.

Domestic prices for softwood lumber in Canada remained firm throughout 1948, but export prices, particularly to the United States, declined slightly during the last quarter of the year. Though domestic and export prices for hardwood remained firm, there was some reluctance to accept lower grades. During the first half of 1949, there was a slight drop in prices for lower grades of lumber. In Canada, as well as in the United States, a number of sawmills discontinued operations.

Were it not for payments difficulties, shipments from the United States and Canada could contribute greatly to Europe's reconstruction needs. According to official estimates, the minimum quantities available for export from the United States in 1950 total about 500,000 standards, and those from Canada 800,000 standards after allowing for shipments to the United States at about the 1948 level. There is strong pressure in both countries to activate exports to Europe. Canada is making full use of the efficient service it operates for marketing its forest products abroad, with active representation by both the Federal Government and private business associations, backed by established grading rules.

FAR EAST AND OCEANIA

Japan is today, as in the prewar years, one of the world's largest producers of softwood lumber, but the present rate of production, 2.03 million standards in 1948, is at the expense of limited forest resources which are being seriously overcut. In the prewar period, Japan imported 300,000 standards of lumber yearly, mostly of softwoods, but also drew on adjacent countries for supplies which were not considered as imports. These supplies are no longer available, and since a reduction in forest output is planned, import requirements are likely to rise considerably.

In Australia the production of sawn timber in 1948 reached a record of almost 1 million standards, and is expected to rise still further in 1950 and 1951. New Zealand expects to be in a position to export some 70,000 standards by 1955 without in any way depleting its forest resources. Since it is not a hard-currency area, it should be able in a few years to meet some of Asia's demand for softwood lumber.

The Forestry and Timber Utilization Conference for Asia and the Pacific, held under the auspices of FAO at Mysore, India, in the spring of 1949, called attention to means for overcoming the prevailing shortage of forest products in the region by increasing the now absolutely inadequate output of lumber. The development of forest output and trade within the region will be fostered through a projected Regional Forestry and Forest Products Commission.

LATIN AMERICA

Latin America, with a lumber production of roughly 7.2 million $m^3(s)$, or 1.5 million standards in 1948, has a relatively low consumption rate. On balance, the region is a lumber-importing area. The only exporting countries of major importance at present are Brazil, Chile, and Mexico.

Brazilian production of softwood lumber was 376,000 standards in 1948, of which 170,000 standards were exported, 90 percent going to South American destinations. Intraregional and overseas lumber trade slackened toward the end of 1948 and at the beginning of 1949, owing to financial difficulties in Argentina (the most important buyer of South American lumber) and shortages of foreign currencies on the European markets. If Brazil could develop a sawmill industry capable of producing high export quality lumber, production could be stepped up with great advantage. Increasing attention will be paid in the future to the development of the great hardwood forest resources, especially of the Amazon Valley.

AFRICA

The Union of South Africa in 1946 imported almost twice as much softwood lumber as it produced—120,000 standards. Imports from the dollar area have since been severely restricted to reduce the drain on exchange, and tight controls have also been imposed on imports from other areas. In French, Belgian, and some British territories in Africa, output of hardwood lumber or squared logs is rising, considerable quantities being exported to Europe and the United States.

PLYWOOD

Manufacture of plywood, which just before the war was estimated to have attained a yearly volume of 2 million m^3, has rapidly recovered and expanded during the past few years. By 1948 it was estimated at some 3.2 million m^3. The bulk of

production is still concentrated in the United States, Canada, Finland, and Japan. The first two countries accounted for nearly two-thirds of the 1948 world total.

Finland, with a production of 210,000 m^3 in 1948, has come very close to the prewar level; output will be increased in 1949. The United Kingdom, Italy, the Netherlands, and Czechoslovakia have surpassed, and France has reached, the prewar figures of production. Some countries, such as Switzerland, have established new plywood industries, using their own wood. But large-scale plywood industries in most of the Western European countries depend mainly on imported supplies of raw material.

The plywood industry in North America has expanded greatly during the last decade.[7] Since the end of the war the Douglas fir plywood industry in the United States has achieved a 70 percent increase in production. However, it is improbable that the 1,738,000 m^3 outturn of the United States softwood plywood industry in 1948 will be exceeded during 1949. Similarly, it is officially estimated that Canada's plywood production will be somewhat less in 1949 than in 1948, when it was 293,500 m^3, although several new companies will have come into operation; through 1950 and 1951 the output of the Canadian plywood industry is expected to average 266,000 m^3.

Output of the Japanese plywood industry since the war has been limited by the lack of logs; in 1948 it reached only 200,000 m^3, less than one-third of the 1940 peak production. If increased imports of logs are obtained, production during 1950 is expected to approximate 250,000 m^3, of which 26 percent will be designated for export.

No precise data are available on current plywood production in the U.S.S.R.; however, veneer output in 1948 was nearly 35 percent greater than in 1947, and is planned to reach a volume of 810,000 m^3 in 1950.

Brazil greatly expanded its plywood manufacture during the war, the development being encouraged by the U.S.A., anxious to develop additional supplies of this strategic commodity. Production reached over 70,000 m^3 in 1946, but capacity has since had to lie idle because the United States market has disappeared and Brazil has not yet developed other export markets. The war also encouraged efforts in some French, British, and Belgian territories in Africa toward establishing hardwood veneer and plywood export industries, which are now yielding good results. There appears to be an important trend in all countries with suitable forest resources toward domestic manufacture of plywood and a reduction in export of veneer logs.

Plywood consumption in Europe is still at less than one-half of the prewar level, since restricted purchasing power has limited effective demand. The United Kingdom, followed by the Netherlands, Belgium, and Denmark, has been the main importer. Plywood exports have not yet reached the prewar level, as the U.S.S.R. (with the former Baltic countries) and Poland have been off the market. Now that reparation and restitution deliveries to the U.S.S.R. have been fulfilled, Finland, the largest plywood exporter, should be able to increase its plywood exports to 210,000 m^3 in 1949. United States and Canadian exports have declined. By 1950, competition on plywood markets should be lively, when Poland, Japan, Brazil, and possibly the Soviet Union will have considerable export availabilities.

[7]Related products, such as sandwich panels with thin, high-strength faces and relatively thick, low-strength cores, light in weight and economical of material, are also rapidly coming into use for a variety of structures, including houses, boats, and aircraft. The commercial production of laminated wood products also continues to expand as adhesives are improved and gluing techniques perfected.

PITPROPS

Generally speaking, the important mining and pitprop-consuming areas in South America, the Rhodesias, South Africa, Australia, India, Japan, and the U.S.S.R. produce their own pitwood requirements or obtain them from nearby sources. The United States, the world's largest coal producer, turns out about one-third of the world's pitprop supplies without taking any considerable part in trade. Canada exports the main proportion of its output. Europe is by far the most important region in pitprop production and international trade, accounting for about one-half of the total world output and some two-thirds of the total trade.

Under these circumstances, only the European pitprop requirements present a problem of international importance. The demand depends on mining activity; fluctuations which affect it also affect pitprop production and trade. After the war, the demand for pitprops in Europe was largely met by calling upon the national forest resources of the countries normally importing pitprops and by considerable shipments from Canada. The Soviet Union, one of the great suppliers of prewar years, has not yet re-entered the pitwood market. Poland, after acquisition of the Silesian mines, has changed from an exporting to an importing country, while Germany has been temporarily self-sufficient.

With these changes in the supply-demand pattern, European production, supplemented by imports from Canada, made it possible to cover the requirements of European collieries in 1947 and 1948. Production of pitprops in Europe increased by about 8 percent from 1947 to 1948, while imports from Canada simultaneously declined by nearly 12 percent. The ECE Timber Committee has found that against an estimated import requirement for 1949 of 5.3 million m^3, there is an estimated export availability of 5.5 million m^3, which, having regard to the improved stock position at the beginning of the year, indicates that supplies will be fully sufficient.

This satisfactory position for 1949 has been brought about partly by developments in the pulp market. Pulpwood competes keenly with pitwood, and the recent decline in demand for pulpwood is expected to give impetus to increased output of pitprops.

Imports of Canadian pitprops by the United Kingdom declined in 1948, and again during the first five months of 1949. The new dollar-saving program of the United Kingdom will presumably result in further cuts through 1949-51.

Plans have been made for a rapid development of pitprop production in Japan. Output reached 2.1 million m^3 in 1948; it is scheduled to be 3.7 million m^3 in 1949 and 4.0 million m^3 in 1951. No provision is made for exports.

RAILWAY SLEEPERS (TIES)

According to recent estimates, there are approximately 1.25 million kilometers of railway track in the world, representing about 3,000 million sleepers (ties), 95 percent of which are made of wood. Maintenance requirements are estimated at about 5 percent annually, or 15 million m^3. As sleepers rarely appear in national statistics as a separate item and information is generally scanty, it is not possible to give any accurate estimate of world output.

Output in countries reporting to FAO showed an upward trend in 1948, but figures do not include some of the most important producers, e.g., the United States and the Soviet Union. The U.S.S.R. five-year plan provides for an output of 185

million sleepers during the period 1946-50. In Europe a deficit in softwood sleepers is expected to continue, whereas the deficit in hardwood sleepers will gradually decline and probably disappear by 1951.

Railway sleepers have always been of minor importance in relation to other forest products in world trade. In 1937, they accounted for less than 2 percent of all timber exports, and in 1948 the percentage was even smaller. Since World War II, European intraregional trade in sleepers has been resumed only to a limited extent, the previous major suppliers, the Soviet Union and Poland, having been off the market until 1949. There are indications, however, of increased exports in the near future from a number of Eastern European countries.

On the other hand, shipments of sleepers from North America to Europe considerably expanded during the early postwar years, the principal countries of destination being the United Kingdom, the Netherlands, and Belgium. However, while Canada's exports increased from about 222,000 to 281,000 m^3, total exports of sleepers from the United States declined from almost 466,000 m^3 in 1947 to 234,000 m^3 in 1948.

It was originally estimated that the United States could deliver 8 to 10 million sleepers out of a requirement of 50 million for the Marshall Plan countries during the period up to 1951. The balance was expected to come primarily from Eastern

TABLE 65.—WORLD PULP BALANCE[1]

Region	1937		1948		1950 Projection	
	Consumption	Production	Consumption	Production	Requirements	Production
	Thousand metric tons					
Europe	9,900	11,590	7,000	8,050	9,400	9,600
U.S.S.R. (exports)	...	[2]145	...	40	...	75
Near East and N. Africa	15	5	15	10	20	15
North America	12,030	10,950	19,255	19,010	20,290	[3]20,310
Latin America	245	25	470	190	580	315
Africa	...	...	15	15	15	15
Asia	1,525	1,180	520	505	715	665
Oceania	50	...	200	160	245	175
WORLD TOTAL	23,765	23,895	27,475	27,980	31,265	31,170

Region	Apparent surplus (+) or deficit (−)		
	1937	1948	1950
	Thousand metric tons		
Europe	+1,690	+1,050	+200
U.S.S.R.	+ 145	+ 40	+ 75
Near East and N. Africa	− 10	− 5	− 5
North America	−1,080	− 245	[4]+ 20
Latin America	− 220	− 280	−265
Africa	...	...	...
Asia	− 345	− 15	− 50
Oceania	− 50	− 40	− 70
WORLD TOTAL	+ 130	+ 505	− 95

SOURCE: FAO, *Report of the Preparatory Conference on World Pulp Problems*, Montreal, 1949.

... None, small, or not available.

[1]The forward estimates are based on hypothetical assumptions as to prevailing economic conditions in various countries of the world.

[2]Baltic republics.

[3]Based on maximum production estimates for the United States.

[4]It is generally expected that North America will continue to show a net import balance. The calculation on which these surplus figures are based assumes that maximum production will occur, which is not necessarily true.

Europe but perhaps to some extent from Latin America, notably Chile, Brazil, Costa Rica, Nicaragua, the Guianas, and Surinam. Later developments have increased reliance on these European and other sources.

There is a considerable body of opinion that many countries demand too rigid specifications, especially for hardwood sleepers, which means great conversion wastage and high costs of production.

WOOD PULP AND PULP PRODUCTS

World output of all grades of wood pulp (excluding the U.S.S.R.) amounted in 1948 to about 28 million metric tons (see Table 65). Of this quantity, some 5 million tons, or almost 18 percent, moved in international trade. From the point of view of industrial requirements, no shortage of pulp can be said to have prevailed, although consumer needs in pulp products are, in most parts of the world except the United States and Canada, largely unsatisfied.

The main pulp-producing regions are North America, which in 1948 accounted for 68 percent of world output (excluding U.S.S.R.), and Europe, which accounted for 27 percent of world production. The corresponding figures for 1937 were 46 percent and 49 percent.

Production in 1949 does not now seem likely to exceed the 1948 total, as was envisaged by the Montreal Pulp Conference. The 1950 projections may also not be fulfilled on account of the reduced demand in the United States and Canada in 1949. In these countries, newsprint production showed a 7-percent gain during the first six months of 1949 as compared with the corresponding period of 1948, but chemical pulp production and purchases by other paper mills declined significantly. It was clear that mills were buying only sufficient pulp to meet their immediate needs, and their pulp inventories at the end of March 1949 showed a drop of 18 percent from the same date in 1948. The anxiety to reduce inventories seems likely to continue up to the last quarter of 1949, according to reports; but unless the production of paper products begins to slacken, purchases of chemical pulp will have to be resumed early in 1950.

International trade in wood pulp consists primarily of exports from Canada, the Scandinavian countries, and Finland, plus certain quantities from the United States to Latin America and other destinations. Imports from Sweden and Finland to the United States in 1947 amounted to more than one-third of the United States wood-pulp imports, and were important dollar earners. But these imports covered only marginal requirements. As the United States pulp market became saturated in 1948, the slackening demand was followed by a downward movement of prices and a sharp reduction, almost to zero, of imports of Scandinavian pulp.

The question arises whether the reduction in prices and imports is temporary or permanent and whether, when the demand for pulp recovers in the United States, the imports from Northern Europe will be resumed. The reduction in prices will make it harder for these countries, with their comparatively high production costs, to compete in the United States market. In the case of Finland, however, the recent devaluation of the markka by 17.7 percent and the release from having to deliver pulp and paper under reparations to the U.S.S.R. is expected to restore its competitive position.

To the extent that the North European producers feel compelled to give priority to whatever they can sell for dollars or other non-European currencies, the

chances of satisfying other European requirements for pulp are thereby lessened. European requirements are tending to expand more rapidly than production, although effective demand for imports is still strongly controlled by governmental restrictions on consumption. If these restrictions were eased, European demand could absorb almost the entire European production.

The pulp and paper manufacturing capacity of Western Europe is being worked much below capacity because of lack of raw materials. The Western European countries, including the United Kingdom, hope to regain their supplies of raw materials in order to reduce their dependence on imported paper and to expand their exports of newsprint and other paper products to underdeveloped countries. At the moment, with falling prices and a greater availability of raw materials from the Scandinavian countries, their industries are recovering. This upturn, however, may be of short duration.

The main difficulty is this question of the raw materials supply.[8] On the continent of Europe the forests of many countries have been heavily overcut during the war and postwar years. Full use of Europe's existing pulp capacity would require an increase of about 60 percent over the 1947 rate of cuttings. This clearly could not be contemplated, nor could the wood be secured by diverting supplies from other products, such as saw timber and pitprops, since demand is high for both of these. The situation is made more acute by the lack of pulpwood exports from the U.S.S.R.

The plans of the underdeveloped countries include, in many instances, the establishment of pulp industries in order to make them independent of imports. Since it is most efficient to manufacture pulp products as part of a continuous process with the production of pulp, there might be a corresponding shift in paper-production capacity.

In Latin America and Africa the possibilities for augmenting the world pulp supply are enormous, providing that social, technical, and economic problems connected with the utilization of tropical forests can be solved. The problems of adapting tropical species to the commercial production of pulp are being explored, and a number of countries are undertaking extended research in that field. Recently France has concluded experiments on an industrial scale for the pulping of a considerable number of African species. Mixtures of as many as 24 such species have been successfully digested in a commercial plant, and sample lots of good paper have been made from the resulting pulp. A pilot plant is under construction on the Ivory Coast to determine the practical possibilities on a commercial scale.

The use of straw, bagasse, and similar fibers as substitutes for wood for pulp manufacture has already given and may give in the future excellent results from a

TABLE 66.—INDICES OF IMPORTED WOOD PULP PRICES
(UNBLEACHED SULPHITE)

Country	1946	1947	1948	1949	
				March	June
	(*1938 = 100*)				
United Kingdom	225	318	411	404	...
United States	190	277	312	292	268

[8]For forward estimates of pulpwood supplies see FAO's *Report of Preparatory Conference on World Pulp Problems*, Montreal, 1949.

technical point of view. From the economic point of view their probable usefulness depends upon local conditions in each country.

Dissolving Pulp

Although so-called "dissolving wood pulp" accounts for only about 5 percent of total pulp output, the products manufactured from this commodity are of great importance. Tentative estimates of the breakdown of the consumption of dissolving wood pulp in 1948 in the United States show the following percentages:

	Percent
Viscose and acetate rayon	65
Cellophane	17
Nitrocellulose	3
Plastics	2
Special papers, vulcanized fiber, and miscellaneous	13

Not much change is expected in the immediate future in the demand for dissolving wood pulp for any field except rayon.

Over the last thirty years, the rayon yarn and staple fiber industry has developed greatly. World production of rayon and staple fiber increased between 1930 and its peak year, 1941, from 208,000 tons to over 1.25 million tons. This development was interrupted by the war, but in 1948 production reached 1.12 million tons.

It is to be assumed that, as a result of industrial rehabilitation in Germany and Japan, production in Europe and the Far East will revive substantially, although it will still be small by prewar standards. There is already a large-scale diversion of sulphite capacity from paper grades to dissolving grades in the Scandinavian countries. In the United States, expansion of the rayon industry is expected to bring steadily increasing demands for dissolving wood pulp. The United States industry in 1948 used 81 percent wood pulp in rayon manufacture as against 19 percent cotton-linter pulp, the corresponding 1938 figures being 75 and 25 percent.

Foreign exchange shortages of major importers of natural fibers are also encouraging use of dissolving wood pulp for rayon manufacture. World consumption of rayon is expected to reach 1.4 million tons in 1949 and 1.5 million tons in 1950. So far in 1949, production of dissolving wood pulp, except in the United States, has not followed the downward trend that has occurred in paper pulps; there have been price drops to make wood-pulp prices more competitive with cotton-linter pulp.

FIBERBOARDS

The manufacture of fiberboards or fiber building boards offers a profitable use for low-grade portions of the forest crop and conversion "waste." The industry has expanded considerably since the war. Production in European countries rose in 1948 by about 14 percent as compared with 1947, and in North America by nearly 17 percent. Total world production in 1948 is estimated at 2.0 million metric tons as compared with 1.7 million metric tons in 1947.

This upward trend is expected to continue through 1949. The capacity of the Swedish fiberboard industry, which toward the end of 1948 was estimated at almost 100,000 tons of insulating board and 200,000 tons of hardboards yearly, will rise further in 1949 and 1950 on account of new industrial establishments. For the same reason, the capacity of the Finnish fiberboard industry, estimated at about 75,000 tons in 1947, is expected to reach the level of 110,000 tons a year in 1949. The third

largest European fiberboard supplier, Norway, which had an annual capacity of approximately 70,000 tons in 1948, will shortly start production in two new factories. Manufacture in the western zones of Germany has been steadily recovering. In addition, Austria is expected to increase its production to a very great extent. In a number of other European countries the fiberboard industry has been developed to such a degree that the main part of the requirements can be met from domstic supplies, and additional countries, for instance Hungary, are planning new plants.

The fiberboard industry in the United States will be expanded so as to reach a larger output in 1950 than the 1.15 million tons produced in 1948. According to official estimates, production in Canada, which was 143,000 metric tons in 1948, will be over 163,000 metric tons by 1950 or 1951. Australia, which produced about 11,000 metric tons of hardboard in 1947, will probably be able to increase production up to 18,000 metric tons in 1949; softboard output is expected to remain at the present level (about 9,000 metric tons). The Union of South Africa and at least two South American countries are among the newcomers in fiberboard manufacturing.

Exports by the European producers of fiberboard also expanded during 1948, despite the fact that the change from a seller's to a buyer's market was accentuated by new domestic production in many countries. The demand for hardboard rose proportionately higher than the demand for insulating board.

TABLE 67.—EXPORTS OF THE MAIN FIBERBOARD SUPPLYING COUNTRIES

Country	1947	1948
	(*Metric tons*)	
Sweden	75,500	94,300
Finland	16,000	31,800
Norway	4,500	10,300
United States	43,000	33,700
Canada	47.000	41.000

In 1948 exports from the three European countries to the United Kingdom (see Table 67) were almost doubled, and the total U.K. purchases reached nearly 50,000 tons (34,000 tons in 1947). As a result of these large purchases, stocks of fiberboard in the United Kingdom at the beginning of 1949 were unusually high, the softboard stocks corresponding to two years' consumption at present rates. Imports to the Netherlands, the second largest buyer, were more than doubled in 1948 as compared with 1947.

The trend toward a geographical spread in the establishment of fiberboard manufacturing capacity may cause some of the major producing countries to cut down on production plans. Exporting countries are already looking for new markets, which should be available in some subtropical and tropical regions.

E. Agricultural Requisites

1. FERTILIZERS

Nitrogen

THE WORLD OUTPUT of nitrogenous fertilizers in 1948/49 surpassed the prewar (1936-38) level by more than 45 percent. The biggest gain over 1947/48 was in Europe, which on the whole has recovered its prewar level of production, although Germany's output is still low. Production in the United States remains very high. Japan has made a complete recovery, but no information is available for North Korea, which was an important prewar producer. For the 1949/50 season, Europe plans to increase its output still further to 1.9 million metric tons of nitrogen.

The United States and Canada, where a tremendous expansion in nitrogen production for ordnance purposes took place during the war, are now turning out chiefly ammonium nitrate, anhydrous ammonia, and nitrogen solutions for agricultural purposes. These newer types of fertilizer material have risen in the past ten years from 7 to 25 percent of the total supplies. The output of the older types, such as sulphate of ammonia, calcium nitrate, and nitrate of soda, has increased much less, while cyanamide output has not increased at all.

Postwar demand for nitrogenous fertilizer has been heavy. Import requirements have been particularly pressing in Europe and Japan, because of the war damage to fertilizer plants and the need for increased food production. Sulphate of ammonia, the most popular nitrogenous fertilizer in Europe and the Far East, was the most sought after and the most scarce. Dollar shortage added to the difficulties of obtaining supplies from the Western Hemisphere, which alone had export surpluses. The Fertilizer Committee of I.E.F.C. kept nitrogen under international allocation until June 1949.

Consumption is nearly four times greater than prewar in the United Kingdom and Austria, and nearly three times greater in the United States and Norway. In India, also, although total consumption is still quite small, it is nearly three times as large as prewar. In the rest of the Far East, however, except in Japan, supplies are still below the prewar level. United States, Canadian, and Chilean exports are made against dollars, except for the U.S. shipment to Japan and South Korea of 250,000 tons of nitrogen supplied by Army Ordnance, which is not a commercial transaction.

Between April 1948 and April 1949 wholesale bulk prices per unit of nitrogen in the United States advanced about 20 percent for sulphate of ammonia and about 15 percent for nitrate of soda. These prices are now about 40 percent and 65 percent respectively above 1938. In the United Kingdom, wholesale prices of sulphate of ammonia in 1948 were quoted at £10.8s. per ton, compared with £7.14s. in 1938, and Chilean nitrate showed a similar proportionate rise; it should be noted, however, that fertilizers are subsidized in the United Kingdom.

The outlook for 1950/51 suggests that world production of nitrogen may increase to around 4.2 million tons, of which 2.2 million would be produced in Europe. India expects to have in operation a new plant with a capacity of 70,000 tons of nitrogen, and Egypt a plant which will produce 31,000 tons. Some other underdeveloped countries are drawing up plans for new plants.

Phosphates

World production of phosphates in 1948/49 was about 42 percent above prewar (1936-38). In order to achieve this increase, the output of phosphate rock has been greatly expanded, as shown in Table 68.

TABLE 68.—PRODUCTION OF PHOSPHATE ROCK BY IMPORTANT PRODUCING AREAS

Producing area	1938	1946/47	1948/49
	(*Thousand metric tons material*)		
U. S.	3,992	9,145	9,246
North Africa	4,105	5,204	5,855
U.S.S.R.	2,363	1,600	2,200
Ocean and Nauru Islands	1.159	238	780

In the United States, the output of phosphate rock has not increased much since 1946, but in North Africa expansion has been rapid following the repair of war damage to ports, railways, and mine equipment. In the Pacific, the output from Ocean and Nauru Islands has recovered to two-thirds of the prewar level, and exports from Makatea, which did not suffer war damage, are now above prewar.

The output of superphosphates in the United States is three times the prewar level; but production fell slightly in 1948/49 as compared with the previous year. European production is 50 percent above prewar, with the greatest expansion in the United Kingdom, France, and Belgium. Japanese output is far from having recovered and the Far East is now a considerable importer. Egypt, South Africa, and French North Africa are all producing more than before the war.

Basic slag has been a phosphate fertilizer of considerable importance in Europe. The output in 1948/49 is estimated at about 600,000 metric tons, compared with 850,000 tons in 1948. In the United Kingdom, France, Belgium, and Luxembourg, production was more than 72 percent of prewar; in Germany, where the steel industry is far from recovering, about 30 percent.

In recent years there has been a trend toward the manufacture of phosphate fertilizers in more concentrated forms, for example, ammonium phosphate. These may become increasingly important in areas where high transportation costs necessitate economies in weight. In 1948/49, however, these concentrated forms accounted for only 136,000 tons of P_2O_5.

Consumption of phosphates has increased almost everywhere. In the United States it is three times the prewar level, and in the United Kingdom it has doubled. Only in Germany and Japan is it still low relative to prewar; indeed, in the Soviet Zone of Germany, consumption is only 25 percent of prewar because of difficulties in obtaining phosphate rock or basic slag.

Prices of superphosphates in some areas have increased only moderately in the past ten years, and there has been little change in the last twelve months. The United States (Baltimore) wholesale quotation for superphosphate in April 1949 was $0.770 per unit, bulk—about 56 percent above 1938. In the United Kingdom (Liverpool) superphosphate was quoted at £5.19s. per ton in May 1949, compared with £3.15s. in September 1937.

Potash

World production of potash in 1948/49 was 33 percent above the 1936-38 level, the steep reduction in Germany's output being more than offset by a large increase in the United States and smaller increases in France and Spain. Two-thirds of the prewar German output came from what is now the Soviet Zone, where 1948/49 production was only 60 percent of prewar, compared with 83 percent in Western Germany.

Since Germany was the principal prewar exporter of potash to all parts of the world, exports have substantially declined. However, the United States, formerly the largest importer, has now become self-sufficient. Imports into the United States compensate for exports from the United States to Canada and other Western Hemisphere countries.

Consumption of potash fertilizers is two and a half to three times the prewar volume in the United Kingdom, the United States, Denmark, and Norway; the increase in Belgium and France has also been large. By contrast, consumption in Germany and Poland is still below prewar. In Latin America potash consumption has increased a little, use being made of nitrate of soda potash from Chile and some imports from the United States and Europe. Potash supplies are still low in Australia and New Zealand.

Wholesale prices of United States potash f.o.b. mines are somewhat lower now than before the war. Potash (50 percent) in the United Kingdom was quoted in May 1949 at £11.10s. per ton, compared with £8 in September 1937.

Fertilizer Use

The widespread increase in demand for fertilizers has been partly a result of government policies designed to stimulate food production and partly a result of the favorable ratio of fertilizer prices to the prices of farm products. Though wholesale bulk prices of fertilizers in some countries are about 50 percent above prewar, and the prices to farmers probably at an even higher relative level because of higher freight rates and handling costs, prices of farm products in most countries are double or more than double prewar. The fertilizer industry is at last catching up with the new high level of demand, and from now on the rate of expansion, though continuing, is likely to be less rapid.

Generally speaking, the increase in fertilizer consumption over the past ten years has been greatest in the countries which already used considerable quantities. Before the war there were striking differences in the quantities consumed in different countries. No satisfactory measure of utilization can be devised because some countries use important quantities of fertilizer, especially phosphates, on their grassland, but Table 70 shows the rate of consumption per hectare of arable land.

This listing shows the high consumption in Belgium, the Netherlands, and New Zealand;[1] and the level in Belgium has actually increased. It shows also the rise in the position of the United Kingdom, Norway, and Switzerland, all three of which have been pursuing policies designed to increase their food production greatly. No other non-European country has a consumption for any one fertilizer higher than an average of 10 kilograms per hectare of arable land.[2] Clearly the use of fertilizers in

[1]New Zealand and Australia use considerable quantities of phosphates, but principally on grazing land.

[2]United States data would be more comparable cited by states than for the whole country. In New Jersey, the heaviest user in 1948/49, the per hectare consumption was 31 kg. N., 66 kg. P_2O_5, and 50 kg. K_2O.

TABLE 69.—ESTIMATED FERTILIZER PRODUCTION, TRADE, AND CONSUMPTION, PREWAR AND 1948/49

Region	Production		Net imports + Net exports[1] —		Consumption	
	1936-38	1948/49	1936-38	1948/49	1936-38	1948/49
Nitrogen	(*Thousand metric tons N*)					
Europe[2] (excluding U.S.S.R.)	1,372	1,635	— 75	—16	1,297	1,610
North and Central America[3]	266	1,104	+114	—187	380	917
South America	279	299	—247	—249	32	50
Asia	378	306	+ 92	+258	470	564
Africa	–	–	+ 88	+128	87	128
Oceania	4	10	+ 13	+ 3	17	13
TOTAL	2,299	3,354			2,283	3,291
Phosphoric Acid	(*Thousand metric tons* P_2O_5)					
Europe[2] (excluding U.S.S.R.)	2,109	2,329	— 66	— 47	2,043	2,282
North and Central America[3]	686	1,916	+ 28	—115	714	1,801
South America[4]	22	43	–	+ 37	22	80
Asia[4]	307	181	— 5	+ 82	302	263
Africa	51	99	+ 24	+ 9	75	108
Oceania	340	434	+ 11	–	351	434
TOTAL	3,515	5,002			3,507	4,968
Potash	(*Thousand metric tons* K_2O)					
Europe[2] (excluding U.S.S.R.)	2,075	2,175	—305	— 81	1,770	2,094
North and Central America	291	962	+126	+ 21	417	983
South America	1	11	+ 9	+ 7	10	18
Asia	29	62	+ 89	+ 44	118	106
Africa	–	0.2	+ 11	+ 28	11	28
Oceania	1	1	+ 14	+ 8	15	9
TOTAL	2,397	3,212			2,341	[5]3,238

[1]Export and import figures are derived; they represent the difference between reported production and consumption figures and include changes in pipeline and other stocks.

[2]U.K. and Spanish dependent overseas territories included in Europe.

[3]U.S. noncontiguous territories included in North America.

[4]Excluding guano and bones from Argentina and India.

[5]Includes some deliveries from U.S.S.R. production, primarily to Eastern European countries.

TABLE 70.—CONSUMPTION OF FERTILIZERS, SELECTED COUNTRIES, 1936-38 AND 1948/49

Consumption	N		P_2O_5		K_2O	
	1936-38	1948/49	1936-38	1948/49	1936-38	1948/49
	Kilograms per hectare arable land					
Over 100 Kg.	–	–	Netherlands New Zealand	Netherlands New Zealand	Netherlands	Belgium Luxembourg
81-100 Kg.	–	Belgium Netherlands	–	Belgium	–	Netherlands
61-80 Kg.	Netherlands	–	Belgium Luxembourg	Switzerland	–	Germany
41-60 Kg.	Belgium Japan	Egypt Japan	Switzerland	Norway U.K.	Belgium Germany	Norway
21-40 Kg.	Egypt Germany	Germany Norway U. K.	Denmark Egypt Germany Japan U. K.	Denmark Finland Germany Japan	–	Denmark Switzerland U.K.
11-20 Kg.	Denmark Peru	Austria Denmark France Peru Sweden Switzerland	Australia Finland France Ireland Italy Norway Peru Portugal Sweden	Australia Austria Czechoslovakia France Ireland Italy Peru Portugal Sweden	Denmark France Japan Norway Sweden Switzerland U.K.	Finland France Japan

many countries, and especially in most underdeveloped countries, must be considerably increased before appreciable results in crop production can appear.

2. PESTICIDES

THE USE OF VARIOUS CHEMICALS to control insects, plant pathogens, and weeds has become an important part of crop production. There are no indications that the demand for pesticides will lessen as agricultural science progresses. On the contrary, the countries most advanced in scientific agriculture are the highest users, and in these countries the trend is toward a continually increasing use.

Production figures on pesticides are not readily available except in the United States, although several other countries, notably the United Kingdom and Switzerland, are large producers.

Both the United Kingdom and Switzerland supply their domestic requirements and are also heavy exporters to European and Asiatic countries. In Latin America production of synthetic pesticides is unimportant, but Peru is the world's largest producer of rotenone. It is reported that sufficient roots to supply the world market for the next two years are already planted and that a greatly improved extraction method is in use. These two factors could markedly affect the cost of rotenone, with a resultant impact on the competitive insecticides. Mexico and Sweden are two of the major producers of white arsenic.

In the United States, the major producer of pesticides, the potential production of DDT in 1947 was 100 million pounds but actual production was about 50 million pounds. In 1948, because of accumulated stocks, production was only 18 million pounds. In the first half of 1949, production equaled the total output for 1948.

Consumption figures are frequently meaningless because of the large and rapidly increasing number of formulas of different basic materials in various concentrations. The vast differences in toxicity invalidate a comparison between mere tonnages of home-made Bordeaux mixture and the organic fungicides unless each is stated in terms of the basic material used. A few countries report that consumption is limited by unavailability of certain pesticides, particularly those which have to be imported. But this is not in itself the main factor retarding the use of pesticides on crops. Lack of trained personnel in agricultural extension or other services to demonstrate the efficient use and potential benefits of the pesticides and lack of application equipment are factors of equal or even greater importance.

Pesticides include three major groups of chemicals—insecticides, fungicides, and weed killers. During the past few years there has been a rapid development of new products in each group. Many of these are highly competitive, one with another. Many are quite specific in that they give protection against certain pests. The result is a certain amount of confusion as each of the new products either finds its appropriate use or for various reasons is replaced by others. The trend is continually toward the use of more toxic materials. DDT and BHC have been followed by an increasing list of effective organic insecticides, a few of which are still designated only by number. The same is true in the fungicidal field, where the bulky Bordeaux is being replaced by organics with much greater toxicity. Among the hormone weed-killers, 2,4-D—which can be obtained in eleven different compounds—and methoxone have become standard items, but other similar products have arrived on the market in the past year and many more are in the testing stage. The trend toward increased toxicity or selective specificity introduces additional problems in regard to application equipment already in use. As the toxicity increases, the amount of pesticide needed per hectare decreases, frequently necessitating changes in the equipment if the new materials are to be used efficiently on an economic basis.

Pesticides in general are available for export from the major producing countries, but lack of foreign exchange unquestionably restricts purchases to some extent. They are produced mainly in only a few countries with major chemical industries. Importing nations must anticipate their needs and place orders in advance, therefore, so that supplies can be on hand when needed. The organic insecticides are offered in many different finished preparations, frequently in extreme dilutions. This has stimulated a trend towards importation of basic materials or concentrates for mixing into finished insecticides within the consuming country.

There are a number of developments which may affect the use and therefore the production of individual pesticide materials. Because of the effects of toxic residues of DDT, certain authorities in the United States have issued regulations that will undoubtedly reduce its use; pyrethrum, rotenone, methoxychlor, parathion, and others will be used instead. The production of synthetic pyrethrin on a commercial scale may affect the market for pyrethrum, but no effect is seen at this time. The trend in importing countries towards domestic formulation of pesticides from basic materials

or concentrates may have a marked effect on consumption by developing formulas designed to fit the particular needs of the country and providing immediately available stockpiles of pesticides. The need for technical advisory services has been recognized by a number of major pesticide producers and distributors, and some action has been taken to provide such services in several countries. Further developments along this line could logically become a strong factor in extending the benefits in crop production to be derived from the proper and increased use of pesticides.

The use of pesticides will continue to increase, and the quantities available for export from the major producing countries will continue to be adequate to meet all foreseeable demands.

3. FARM MACHINERY

TRENDS IN TRACTOR AND ANIMAL DRAFT POWER on farms from 1930 to 1947 were traced on a world and regional basis in *The State of Food and Agriculture, 1948.* During this period the number of tractors in use in the world increased greatly, but in 1947 tractors still provided only 15 percent of the draft power on farms. Production of other modern farm machinery also increased manyfold, particularly after the war, but the supply in 1947 was unequal to the unprecedented demand. The present statement attempts to bring the picture up to date and to examine current trends in the field of farm machinery.

Work animal numbers are gradually being restored in the war-devastated areas of the Far East and Europe. Progress continues also in the struggle against rinderpest, and new measures (notably the drug antrycide) for combating trynosomiasis in Africa raise hopes for greatly increased animal power in that underdeveloped area. Increases in the number of the world's work animals, however, have not been large in the past year.

Tractors and other modern farm machines continue to be used on an increasing scale in the more developed regions, and even in areas previously little affected by mechanization they are being used more and more, often for special purposes such as land reclamation. The figures assembled in Table 71 illustrate the rapid but uneven adoption of mechanical power on farms in the major regions of the world during the last two decades. Striking features of this development are the fourfold increase in the number of tractors over the 19-year period; the concentration of 97.5 percent of all tractors in North America, Europe, the U.S.S.R., and Oceania (whereas Latin America, the Far East, the Near East, and Africa, containing together nearly half the world's cultivated land, have only 2.5 percent); and the rapid intensification of power farming in Europe, particularly in Western Europe.

In Europe a diminishing proportion of the farm machinery being manufactured is suitable for operation by draft animals, and tractors are being generally introduced, notwithstanding fuel import problems, in order to gain greater speed of operation and to obtain the benefits derived from the release of approximately one hectare of land

for each animal displaced. To an increasing extent, therefore, tractor numbers are likely to provide an index of the level of mechanization in Europe. There remains in general use, of course, a great deal of animal-drawn equipment in addition to huge quantities of the more primitive traditional implements in underdeveloped areas.

It is important to bear in mind, however, that tractor numbers alone do not indicate the extent to which mechanical power is used on farms. The hours of work they perform the year round must also be considered. There is evidence that the number varies greatly from region to region, but few details are available. In the United States, for example, it is reported that farm tractors in 1941 worked on the average 493 hours; in the United Kingdom the estimated figure is 800 hours a year; and in the U.S.S.R. the range for collective farms in 1936 was 800 to 1,600 hours.

TABLE 71.—TRENDS IN TRACTOR NUMBERS SINCE 1930

Region	Estimated tractor inventories[1]				Distribution of world tractors 1948/49	Distribution of world crop land
	1930	1938/39	1946/47	1948/49		
	(*Thousand units*)				(*Percent*)	(*Percent*)
North America	1,020	1,597	2,890	3,700	71.0	19.9
United Kingdom	20	60	200	285	15.0	11.9
Europe (excl. U.K.)	110	205	312	501		
Latin America	20	35	62	70	1.3	6.3
Near East	2	5	10	13	0.2	5.6
Far East	1	3	10	13	0.2	21.3
Africa	10	17	26	40	0.8	14.2
Oceania	32	53	90	101	1.9	1.6
U.S.S.R.	72	523	400	500	9.6	19.2
TOTAL	1,287	2,498	4,000	5,223	100.0	100.0

[1]As far as possible the figures given have reference to agricultural tractors, but in some cases no clear separation from horticultural (garden) types and tractors used for nonagricultural purposes can be made.

TABLE 72.—FARM MACHINERY SITUATION, 1948

Country or region	Production[1]		Exports[2]		Imports[3]	
	Total	Machinery other than tractors	Total	Machinery other than tractors	Total	Machinery other than tractors
	(*Million U. S. dollars*)					
United States	1,945	983	382	189	73	51
Canada	148	125	84	73	132	74
United Kingdom	272	126	[5]106	28	25	19
Europe (excl. U.K.)	[4]250	[4]175	35	[4]23	122	68
Latin America	[4]3	[4]4	—	—	113	54
Near East	...	...	—	—	17	8
Far East	...	...	—	—	15	7
Africa	[4]1	[4]1	—	—	80	23
Oceania	[4]30	[4]26	[6]3	[6]3	33	11
U.S.S.R.	[4]400	[4]265	...	...	—	—
TOTAL	3,049	1,704	610	316	610	315

[1]Factory prices.
[2]Export prices at ports; i.e., about 20 percent above factory prices.
[3]Export prices at ports in United States, Canada, United Kingdom; also includes France, Sweden, Switzerland, and Australia where data are available.
[4]Estimates made by FAO.
[5]Excludes dairy equipment.
[6]1946/47 data.

TABLE 73.—TRACTOR NUMBERS, 1947 AND 1948[1]

Country or region	Production		Exports		Imports	
	1947	1948	1947	1948	1947	1948
	(*Thousand units*)					
United States						
Wheel and track	470	568	98	117	6	21
Garden	(173)	(183)	(15)	(11)	...	...
Canada	10	15	6	9	36	46
United Kingdom						
Wheel and track	58	117	17	60	2	2
Garden	(28)	(34)	...	...	...	...
Europe (excl. U.K.)	21	50	2	4	34	54
Latin America	—	—		—	20	29
Near East	—	—		—	2	4
Far East	—	—		—	2	3
Africa	—	—		—	9	22
Oceania	—	[2]2		—	10	18
U.S.S.R.	33	67		—	2	—
TOTAL (excl. garden tractors)	592	819	123	199	123	199
TOTAL (incl. garden tractors)	793	1,036	138	210	...	...

[1]Figures are in some cases estimates and are subject to revision.
[2]1948/49 program.

Production and Overseas Trade

Production and international trade in farm equipment have nearly trebled in volume since 1937. North America and Europe remain the principal centers of production. Within Europe, however, the former concentration of production in the United Kingdom is now being balanced to some extent by growth of the industry in other European countries, notably France, Italy, Czechoslovakia, Sweden, Switzerland, and Germany, while Austria, Poland, and Hungary are making considerable progress. Manufacture of tractors on a significant scale has also commenced in Australia.

Information on production of tractors and other farm equipment and on intra-regional trade in these items in 1948 has been assembled in Tables 72 and 73. In 1948 the volume of world output of all types of farm equipment increased over 1947 levels by roughly one-third, mainly as a result of freedom from labor disputes in the United States, big increases in plant capacity in the United States and the United Kingdom, and better supplies of raw materials. Production of 819,000 wheel and crawler tractors, compared with 592,000 in 1947, illustrates the progress made. The market for horticultural or garden tractors justified only small expansion in production. Another fact worthy of note is that tractor production in the U.S.S.R. in 1948 doubled the previous year's figure, though prewar levels have not yet been reached. Crawler tractors were in short supply during 1948, despite some expansion in the United States and the entry of a few European manufacturers into this field on a small scale. Construction of mounted and trailing equipment associated with tractors was increased to keep pace with the increase in tractors. This applies not only to relatively simple implements such as plows and harrows, but also to more elaborate machines such as combine harvesters. In the United States alone, 91,000 combines, including 10,000 self-propelled types, were manufactured in 1948, compared with 77,000 in 1947.

Table 73 shows that less than a quarter of the tractors produced in 1948 were exported. For farm machinery other than tractors, the proportion entering inter-

national trade was somewhat less because manufacture of those items is often less specialized (Table 72). When considering the distribution of exports, it is of interest that the four less developed regions combined took only one-third of the tractors and other farm equipment entering world trade. As shown by Table 74, this proportion has not changed greatly over the last decade, notwithstanding heavy imports in recent years for the highly mechanized agriculture of French North Africa and the Union of South Africa, which are included in otherwise underdeveloped regions along with such Latin American countries as Argentina, Venezuela, and Mexico, where mechanization is making considerable progress. The figures for North America show that a large proportion of United States and Canadian exports were exchanged between these two countries. Oceania exports such items as seeding and harvesting equipment but is dependent on overseas sources for most of its tractors.

TABLE 74.—EXPORTS OF TRACTORS AND OTHER FARM MACHINERY ENTERING VARIOUS MARKETS: PERCENTAGES OF TOTAL VALUE

Destination	1937	1946	1947	1948
	(Percentage of world exports)			
North America	22	33	31	34
Europe	27	32	26	24
Latin America	22	17	22	19
Near East	2	2	2	3
Far East	2	2	3	2
Africa	11	9	10	13
Oceania	14	4	5	5
U.S.S.R.	—	1	1	—
TOTAL	100	100	100	100
Actual value in million U. S. dollars	117	228	428	610
Actual number of tractors—1,000 units	51	78	123	199

1949 Situation

It is too early to assess in detail the world's farm machinery situation for 1949, but certain indications are available. The most striking and important feature is that production has at last caught up with demand. Transition from a seller's to a buyer's market is taking place.

In the United States, tractor production in the first half of 1949 totaled some 266,000 units, slightly more than in the first half of 1948, but prospects are for lower output in the second half of the year. In the United Kingdom, also, production of tractors and other agricultural machinery in the first quarter of 1949 was above the average quarterly level for 1948, but below the figure for the last quarter of 1948. The same applies to exports from the United Kingdom. It seems probable, therefore, that both world production of these items and overseas trade will be of roughly the same order in 1949 as in 1948, and will tend to decline towards a lower level in 1950. There is no reason to suppose that the distribution of exports will diverge markedly from the pattern shown in Table 74.

In the latter part of 1948 governments of the Far East repeatedly informed the FAO-ECAFE Joint Working Party on Agricultural Requisites that delivery of farm machinery ordered from exporters in North America and Europe was being long

delayed, despite the fact that arrangements for payment had been made. Another complaint was that plows, for instance, would be delivered, but the tractors ordered at the same time would not arrive until months afterward; pumps would be shipped, but no engines. Similar delays and lack of co-ordination were reported from Latin America, the Near East, and other regions.

By the early part of 1949, however, relatively few complaints of this kind were made to the ECLA-FAO Joint Working Party in Latin America. About this time, six important farm machinery exporting companies in the United States were consulted by FAO. Without exception they stated that they were in a position to make prompt delivery of most items of equipment produced by them to both domestic and foreign buyers if proper procurement arrangements had been made. Their chief problem was that many governments were restricting dollar purchases. Production had been catching up with demand throughout 1948, and the backlog of unfilled orders which had accumulated during and after the war had eventually been satisfied. These representatives of the industry pointed out that crawler tractors, heavy-wheel tractors, and certain types of heavy plows were still in short supply, but that progress was being made in overcoming these shortages. On the other hand, some types of medium and light tractors and equipment had actually been overproduced. A similar situation has been reported from the United Kingdom, where some factories are not working at full capacity. With further plants coming into production in Europe, there is a distinct prospect of overproduction now that demand is largely confined to replacement of worn-out and obsolete machines and the needs arising from limited new mechanization.

Future Prospects

The high level of demand for farm machinery results partly from the relatively high level of farm wages and partly from the favorable level of machinery prices as compared with the prices of agricultural products; future demand will depend largely on the evolution of this relationship. Until now, the prices which farmers have received for their products have increased in general more rapidly than the prices they have had to pay for farm machinery, as the figures in Table 75 for two selected countries indicate.

TABLE 75.—PRICE INDICES, AGRICULTURAL PRODUCTS AND FARM MACHINERY, SELECTED COUNTRIES

Country	Base period	Index of farm machinery prices	Index of prices of agricultural products
U.S.A. (March 1949)	1935-39 = 100	170	254
Union of South Africa (April 1949)	1936-38 = 100	183	255

Export prices for farm machinery in the United Kingdom (the only data available) have risen more steeply than those shown in Table 75 (an index of 264 on the basis of 1939 = 100), but the depreciation of sterling and the shortage of dollars have made United Kingdom exports competitive with those of the United States in import markets.

Because of the easier market situation, farm machinery prices are unlikely to rise substantially. On the other hand, because of the comparative rigidity of production costs, they are unlikely to decline rapidly.

If the present decline in commodity prices continues, this development, together with the fact that many farmers have invested heavily in capital equipment, may sharply contract demand in some regions, notably in North America, which is by far the biggest market. European mechanization plans are ambitious, and even if they are not fully realized, demand seems likely to be greater for a few years at least than in 1948/49, when roughly 150,000 tractors with associated equipment were taken up. This increase will be met almost entirely by the industry of the region, which will also produce a substantial surplus for export. The U.S.S.R. is likely to rely on its own resources for farm equipment and may have surplus production before 1953, so it is unlikely to buy from other regions.

The figures quoted in Tables 72, 73, and 74 show that Latin America, the Near East, the Far East, Africa, and Oceania consumed, in the aggregate, only 10 percent of total world production of farm equipment in 1948, and roughly 40 percent of exports, including 76,000 tractors. Although the potential market in some of these areas is tremendous, it can develop only slowly. Sales to these regions are seriously handicapped by their growing balance-of-payment difficulties.

For the immediate future, annual world demand, excluding North America and the U.S.S.R., would appear to be not much in excess of 250,000 tractors with associated equipment. European factories alone are estimated to have the capacity to produce this quantity. If the huge productive capacity of North America, which is now faced with a contracting domestic market, is added, abundant supplies of all types of farm machinery will clearly be available. It appears, therefore, that conditions will be increasingly favorable for carrying out mechanization programs, which have been delayed by difficulties in obtaining delivery of the appropriate kinds of equipment.

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