THE STATE OF FOOD AND AGRICULTURE 1957

FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS

Rome, 1957

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NOTE

The statistical material in this publication has been prepared from the information available to FAO up to 30 June 1957

Printed in Italy

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FOREWORD

This year's annual report on the world food and agricultural situation follows the pattern established last year and favorably received. After a short introductory summary, there is a main chapter on the current world situation, followed by two chapters dealing with particular topics in greater detail, and over a longer term than a year. One of these chapters reviews the factors influencing the consumption of food. The other deals with institutional changes since the war in land tenure, farm credit and agricultural co-operatives, and their impact on agricultural development.

The year 1956/57 saw a further steady expansion of world agricultural production and trade. Over the last few years agricultural production as a whole, and also food production, have increased at the rate of about 3 percent annually, or rather more than 1 percent faster than the growth of world population. As over-all stocks of agricultural products have increased relatively little since 1954, it may be inferred that there has been a small improvement in food consumption levels. Whether the recent rate of expansion of production can be maintained, in view of the downward trend of farm prices relative to prices generally, remains to be seen, but on it depends further nutritional improvement.

A significant feature of the last few years has been that, contrary to early postwar trends, food production has increased rather more quickly in the less developed regions than in the rest of the world. Thus in comparison with the average for 1948-52, preliminary estimates for 1956/57 show a rise of 20 percent in net food output for the less economically developed,[1] *and of 15 percent for the more developed regions.*[2] *While most of this difference is offset by the more rapid growth of population in the less developed countries, indications are that they have at least held their own. But the distance to be traversed is still so great that any progress so far is negligible. There can therefore be no slackening of the efforts made to raise nutritional levels. Inadequate and unbalanced diets are still the common lot of more than half of the world's population, even though the threat of actual famine has receded.*

The situation is underlined in the review of factors influencing food consumption in Chapter III. From a review of available evidence, income stands out as by far the most important determinant of what families eat, and the survey brings out once more the essential relation between general economic development and nutritional improvement. One of the most striking conclusions which emerges is the very rapid growth of demand for the more valuable protective foods which results from even a small increase in average incomes in countries at an early stage of economic development. This emphasizes the vast potential market for agriculture likely to arise in the underdeveloped regions as their economies are built up. It emphasizes also the vital importance of closely matching the expansion of food supplies to the growth of income if the economy is not to be subjected to serious strains; from inflation if agriculture lags behind the economy as a

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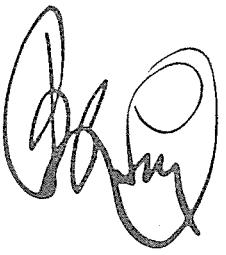
[1] The Far East, the Near East, Africa and Latin America.
[2] North America, Western Europe and Oceania.

whole ; from a collapse of farm prices, agricultural surpluses, and rural depression if production runs ahead of purchasing power. The significance of this topic in relation to current programs of economic development is evident.

In many countries of the world, however, conditions of land tenure, lack of farm credit or inadequacies of agricultural organization still raise formidable obstacles to agricultural progress in spite of the great advances made since World War II. In Asia particularly, developments in the last decade have been more significant than in any comparable period in history. Chapter IV of the report traces the progress of these postwar reforms. Though it is still too early to measure their effect, the chapter also points up some of their likely consequences, and draws attention to the immense task still to be done. This field, no less than nutrition and planning, is of outstanding importance to member countries at the present time.



B. R. SEN

Director-General

Chapter 1 - SUMMARY

Chapter II. World Review and Outlook

The main recent trends in the world food and agricultural situation were continued in 1956/57. Production again increased by about 3 percent. As in 1955, the volume of world trade in agricultural products rose sharply and the increase in its value was again limited by lower world prices. Farm prices, in contrast, generally showed some increase, but in most countries the rise in prices paid by farmers was still greater. With renewed inflationary pressures, retail food prices also increased in the large majority of countries. Reflecting intensified surplus disposal operations, which contributed substantially to the sharp upward movement in the volume of world trade, surplus stocks rose only slightly in 1956/57 and for some products began to decline; once again, however, stocks of coarse grains were a major exception.

Production. The increase in world agricultural production in 1956/57 was fairly evenly distributed among the different regions, except for Oceania, where it appears that the greatly increased level of the previous year was not quite maintained. Since 1948-52 the increase in production in each of the less developed regions has been above the average for the world as a whole, while increases in the developed regions have generally been less rapid. Nevertheless in both the Far East and Latin America the substantial progress achieved has not yet been sufficient to overcome the setback of the war years, and in these two regions per caput food production (though not, apparently, per caput supplies) is still below the prewar level.

It is now possible to compare the forward estimates of production in 1956/57 presented in the 1953 issue of this report with preliminary estimates of the actual level of production. World production (excluding the U. S. S. R., Eastern Europe and China) in 1956/57 exceeded the forward estimates by about 3 percent and, in fact, the targets were actually reached a year earlier than expected. The only region where production fell appreciably short of the forward estimates was Latin America, where, however, the targets had been set rather high because of the particularly rapid population growth. World production exceeded expectations, in some cases substantially, for most commodities, and only for five main commodities (wheat, cotton, bananas, rubber and eggs) were the expected levels of production not reached.

Present indications are that in 1957/58 world agricultural production will continue to increase at approximately the same rate as in the last few years, in spite of a possible slight reduction in United States output which may result from the Soil Bank Program combined with lower price supports, and, for some crops, more severe acreage restrictions.

International Trade in Agricultural Products. The volume of world trade in agricultural products, which had previously stagnated for some years at about the same level as before the war, followed the upward movement of 5 percent in 1955 with an even sharper rise of about 8 percent in 1956. The most striking feature of agricultural trade in 1956 was a rise of as much as 30 percent in North American exports, reflecting on the one hand an intensification of United States' surplus disposals and, on the other hand, increased import demand in Europe and the Far East. Nearly half the increase in the volume of world trade was accounted for by grains and more than 80 percent by grains, cotton and coffee together.

Average unit values of agricultural products in world trade declined further, so that the 8

percent increase in the volume of trade brought an increase of only about 4 percent in its total value. Moreover, the average prices of manufactured goods in world trade continued to increase and the purchasing power (for manufactured goods) of agricultural exporters appears to have remained at about the same level as in the two preceding years, though it was still well above the depressed level of the immediate prewar years.

Changes in Stocks. The rate of growth of world stocks has slowed down considerably since 1954 and there was only a small over-all increase during 1956/57. After an uninterrupted rise for some years, the investment in surplus stocks of the United States Commodity Credit Corporation began to decline. There was a fall in United States' stocks of wheat and cotton, but North American stocks of coarse grains rose very sharply and now exceed the wheat stocks of the four major exporters.

The Soil Bank program slightly reduced United States production of cotton and some coarse grains in 1956/57, but both acreage and production of wheat were higher. The decline that began in United States' stocks of certain commodities primarily reflected the sharp expansion in exports which resulted mainly from the intensification, especially from the second half of 1956, of surplus disposal operations.

Economic Activity and Demand. The rate of economic expansion slowed down in 1956/57, especially in the industrial sector, and in some countries there was a small downward movement from the high levels of the preceding year. Inflationary pressures continued and disinflationary measures as well as restrictions to improve the balance of payments prevented, in many countries, any substantial growth in the demand for agricultural products. The export revenues of many raw material and food exporting countries showed only small increases or even declined, causing balance of payments problems and difficulties in maintaining the tempo of development activity. A few countries, however, registered notable improvements in their balance of payments in 1956/57, partly as a result of earlier policies to control imports. In both Europe and the Far East import demand for agricultural products rose sharply, partly because of bad harvests in certain countries but also partly because of the growing demand in countries where economic expansion, including the implementation of development projects, continued rapidly.

The short-term outlook is that economic activity will continue to expand at the rather slower rate that prevailed in 1956/57. While there are no signs that the more rapid pace of previous years will be regained, at the same time no major decline from the present high level seems likely. In many countries a relaxation of tight money and other restrictive policies could be used, if necessary, to stimulate demand and prevent a decline. With the continuing high level of economic activity expected in the industrialized countries, the demand for exports of food and agricultural raw materials should remain strong and slightly on the rise. Domestic demand should increase further in the less developed countries as development programs are implemented and may even have to be curtailed to limit the inflationary pressure on prices.

Prices and the Farmer. The prices received by farmers appear generally to have shown small increases during 1956 and early 1957, in some cases because of higher price supports. In most countries for which data are available the increase in the prices paid by farmers was, however, greater, but with the improvement in prices received, the deterioration in the ratio between these two sets of prices was on the whole slower than in the few previous years.

As a result of the continued tendency of prices to move against farmers, reinforced in some countries by lower output in 1956/57, aggregate net farm income again declined in a number of countries. In some countries, on the other hand, production rose sufficiently to outweigh the price movement, so that increases in farm income, sometimes reversing a steady downward trend, were rather more widespread than in the past few years in the limited number of countries for which recent data are available.

Declines in farm income would almost certainly have been more frequent and more pronounced but for the use of price supports in many countries. A tentative comparison of support prices in different countries brings out in addition the very wide range of these support levels. Moreover they often considerably exceed average prices (unit values) ruling in world trade ; under many systems of price support

this necessitates increased governmental intervention in international trade, either by restricting imported supplies to maintain domestic prices at support levels, or by the direct or indirect subsidization of exports.

Prices and the Consumer. Retail food prices rose further in almost all countries in 1956 and the early months of 1957, in contrast to the general downward movement in the prices of most food products on world markets. This reflected the renewal of inflationary pressures, as well as increased farm prices and the lowering of consumer subsidies in some countries. A feature of 1956 was the resumption of a rising trend in retail food prices in a rather large number of countries where it had previously been temporarily halted. Developments in the first few months of 1957 indicate that the upward pressure on retail food prices will continue in most countries.

Agricultural Policies and Development Plans. Changes in agricultural policies and programs were again rather frequent in 1956/57, including the modification of some of the new programs begun in the previous year.

In North America, recent developments appear to indicate that the United States Soil Bank Program, instituted in 1955/56, and the system of flexible price supports, may not be able to bring about a sufficient temporary reduction in output for surplus stocks to be eliminated. New proposals are therefore under consideration for further changes in the United States crop control mechanisms and price support system.

In Oceania the main emphasis in the field of agricultural policies during 1956/57 has been on trade relations. Both Australia and New Zealand sent trade missions to the United Kingdom and negotiated agreements modifying and supplementing the Ottawa Agreements of 1932.

The governments of six Western European countries have signed a treaty, now awaiting ratification, for the establishment of a Common Market, which would include also their overseas territories. A Free Trade Area, to include additional Western European countries, is also under discussion, while similar trade agreements are being considered in some other regions. Such developments may be an important influence on the pattern of agricultural trade (and thus also on production policies) in the next few years. While these changes still lie in the future, however, there have also been further adjustments to Western European agricultural policies during the year under review.

In the U.S.S.R. and, particularly, in the Eastern European countries there have been some important changes in the organization of agricultural production and distribution, mainly as a result of growing consumer pressure. Increased reliance is being placed on contract sales and the incentive of higher prices rather than on the compulsory delivery system, which during 1956/57 suffered a considerable setback in most of the Eastern European countries. An intensified collectivization drive was halted in most Eastern European countries because of growing resistance in the countryside ; while collectivization remains the ultimate objective its implementation has been markedly slowed down in several countries.

In the remaining regions, while good progress in the implementation of agricultural development projects has continued in many countries, the revision or postponement of such plans and projects has been rather frequent in 1956/57, which may indicate the need for greater flexibility in planning techniques. Inflation, reduced export earnings and, sometimes, political factors have been the main influences limiting the pace of development.

Commodity Survey and Outlook. Total supplies of grains were again larger in the 1956/57 trade season. World production of *wheat* decreased slightly, exports rose sharply to reach a postwar peak and United States stocks began to decline. Exports of *coarse grains* were below the record levels of 1955/56, but production showed a further sharp increase, most of which was transferred to stocks. For 1957/58 prospects depend mainly on the outcome of United States harvests ; it already appears that the large reduction in wheat acreage will be almost completely offset by higher yields. *Rice* production, consumption and trade all increased in 1956 and exportable stocks were again considerably reduced.

The consumption of *sugar* rose more rapidly than production in 1956, stocks were drawn on substantially and the world price rose very sharply. Production is likely to have received a new impetus in both importing and exporting countries.

World exports of *meat* expanded further in 1956 and prices for Southern Hemisphere beef

declined heavily; in 1957 the increase in production and exports is likely to be smaller and the general level of prices to change little. Among *dairy products*, prices of butter and cheese fell sharply in the London market, largely because of the accumulation of stocks out of increased imports from Oceania. *Egg* prices also declined in Europe, following the rapid expansion of production in the autumn and winter of 1956.

Because of improved natural abundance in certain fisheries in early 1957, market prospects for preserved and processed *fishery products* are good, in view of the relatively low stocks of most commodities. In 1956 the world catch of fish, crustaceans and mollusks was about the same as in the preceding year, record catches in some countries being counterbalanced by reductions in others, mainly because of declines in the abundance of fish.

World production, consumption and trade in *fats, oils and oilseeds* increased in 1956. International market prices, especially of drying and liquid edible oils, have been exceptionally unstable since the beginning of 1956. Exports remained large in 1957 and some of the price rises of last year may be maintained.

Of the major varieties of *fresh fruit*, the market for citrus continues to be affected by the severe frost damage in Spain in early 1956, but the production of table apples recovered sharply from the low level of 1955. The production of most types of *dried fruit* increased, but output of dates was unusually low in Iraq. *Wine* production decreased slightly, with large reductions in some European countries because of the effects of the frost.

The output of *cocoa* increased very sharply in 1956/57. Consumption, after falling to a very low level in 1955, has been increasing steadily since the end of 1956 and the long downward price movement has finally been reversed. World *coffee* production declined from the 1955/56 record; with stronger demand, imports continued to increase and prices remained steady at a comparatively high level. World *tea* production rose only slightly, but there was a sharp increase in exports as well as rising domestic consumption in producing countries. *Tobacco* output increased slightly; United States exports were reduced and there was a further rise in stocks. In 1957/58 United States production should fall as a result of much lower acreage.

World *cotton* production turned downward in 1956/57, mainly because of acreage reductions in the United States. The disposal of this country's stocks at competitive prices caused a marked expansion in exports; United States stocks began to decline, while those in importing countries were replenished. The production and consumption of *wool* again rose slightly and prices improved. *Jute* production and consumption appear to have been roughly in balance in 1956/57, but prices advanced rapidly toward the end of 1956. Output of all major *hard fibers* increased; consumption prospects appear favorable. The production of natural *rubber* declined slightly from the 1955 peak and was exceeded by consumption; prices showed considerable fluctuations during 1956 and early 1957.

The rapid increase in the output of *forest products* slowed down in 1956, total fellings being approximately the same as in the preceding year, but a renewed expansion is expected in 1957. World trade in pulpwood and pitprops declined but prices continued stable. Requirements of sawnwood were lower in Europe and North America, total world trade also declined and there was some weakening in prices. The steady postwar expansion of wood pulp production and trade continued, however, and newsprint also registered a further sharp increase.

Chapter III. Factors Influencing the Trend of Food Consumption

A survey of recent developments and studies brings out the over-riding importance of income as an influence on diet, and thus re-emphasizes the essential connection between general economic development and nutritional improvement.

A review of fourteen household surveys with a wide geographic coverage reveals a striking uniformity in all parts of the world between the level of income and the average percentage spent on food. In the wealthier countries, and everywhere at high income levels, an increase in per caput income leads to a relatively small increase in food expenditure, except for a few items such as meals in restaurants and alcoholic beverages. For a number of foods, indeed, consumption tends to decline as incomes rise above a certain level, more expensive foods being substituted.

At low income levels, on the other hand, and notably in economically underdeveloped countries, a small rise in income usually results

in a sharp increase in food purchases, especially of the so-called protective foods such as livestock products, fish, fruit and vegetables, and hence to a marked improvement in the nutritional quality of the diet. In the poorest families covered by the surveys, an increase of, say, 10 percent in income gave rise to an increase of considerably more than 10 percent in their meager expenditure on such foods as milk, eggs and fruit and vegetables.

These facts, which are confirmed by other data, including a comparison of average per caput consumption levels between countries at different levels of per caput national income, point to the vast potential market for foodstuffs in the less developed countries of the world. They indicate also the importance in economic planning of making provision for the rapid increase in the demand for food as incomes rise above the subsistence level, if severe inflationary strains are to be avoided. Timing, however, lies at the heart of the problem and recent experience has shown that even in countries where average diets are nutritionally inadequate, farm prices may collapse and food surpluses emerge if food production outruns the growth of demand.

A number of other factors, including prices, food habits, changing availabilities of food, social and religious customs, and nutritional measures, including nutritional education, also influence the consumption of food.

Most published studies on the relationships between prices and food consumption are more largely concerned with short-term changes as an aid to price forecasting than with long range effects. There is evidence, however, that in, e.g., the United States the present pattern of food consumption has been largely influenced by shifts in the relative prices of different foodstuffs over the past 40 years. These appear to have favored the consumption of, e. g., vegetable oils, sugar, and eggs, and to have reduced the consumption of meat and dairy products, especially butter, in comparison with what might have been expected if incomes had risen without long-term changes in price relationships. It also appears that a general rise in the level of food prices relative to other prices in the United States is associated with a small increase in the percentage of the income spent on food, and vice versa. Although direct evidence is lacking, it seems likely that in less wealthy countries the influence of prices would be still more marked.

The rapid growth of towns at the present time in many underdeveloped and other countries has an important influence on food consumption. In general, diets appear to be nutritionally better in towns than in country areas, largely, though probably not entirely, because of higher urban incomes. But there are many exceptions where there has been a shift to visually more attractive, but less nutritious cereals, or where undue expenditure on processed foods and beverages of little nutritional value has left little money for more essential foods. Ignorance of even the simplest rudiments of nutritional knowledge is largely responsible, and elementary consumer education, especially in underdeveloped countries, could go far to raise nutritional levels in both urban and rural areas.

The growth of towns has also thrown an immense strain on the inadequate food marketing and distribution services in underdeveloped countries. Unavailability of perishable foods, or their availability only irregularly, at high cost, or in imperfect condition, remains a serious obstacle to better nutrition.

An important new influence on food consumption has been the postwar growth of school feeding and other welfare schemes, whereby a larger share of protective foods is channeled to mothers, children and other vulnerable groups.

Chapter IV. Postwar Changes in Some Institutional Factors Affecting Agriculture

Considerable changes in some of the more important institutional factors affecting agriculture have taken place in the postwar years. Among these factors, land tenure, credit and co-operatives have some close relationships.

The changes in land tenure concern the ownership pattern, the owner-tenant relationship, and the layout and size of farm units. Changes in the ownership pattern have involved principally the elimination of the large landowners and intermediaries and the absorption of medium and small-size holdings through collective land use or State farms. The type and the momentum of the change were largely determined by political developments, and differ from region to region. In other areas customary tenures were subject to a gradual process of individualization. Changes in the owner-tenant relationship were concerned with

giving the tenant-cultivator greater security by long contractual periods and restricting the reasons for eviction. In some areas rent control was established, but the implementation of rent control measures was frequently very difficult. In many countries legislation tried to provide the tenant with the right to acquire land.

In some countries changes in ownership of forests took place, due to a policy aimed at State or community appropriation of private forest holdings in the interest of the general public. Another tendency has been that of ensuring a greater degree of State administrative control over unclassed forest lands. Attempts have been made to control or abolish rights which are often a serious menace to the continued existence of the forest. For fisheries, tenure problems apply — with the exception of certain coastal areas — only to inland fisheries where, in many cases, the possibility of exercising tenure over an area of inland water permits efficient management.

Technological, political and sociological changes have increased the demand for agricultural credit in the postwar period. Government facilities have greatly expanded, but noninstitutional sources have remained the main reservoir for financing, particularly in underdeveloped countries. However, noninstitutional sources are not covered in this chapter.

The various credit institutions, such as village banks, commercial banks, governmental institutions (agricultural banks, special mortgage banks and finance and development corporations) have expanded at a varying rate in the different regions of the world. The supply of loanable funds from these sources has grown slowly since 1951, as shown in the maps and in Annex Table 16. Governments have also tried to improve interest charges and terms of loans, but were successful only where public institutions — often subsidized by government funds — have effectively competed with private credit sources.

The main obstacle remains the shortage of capital and the insufficiency of proper institutions. These impediments, together with others, such as poor systems of land tenure, point to the great role governments have to play, particularly with respect to supervised credit and in connection with land policies. The main requirement is an integrated approach covering all aspects of agricultural credit as well as ancillary facilities.

In the years since World War II ended farmer co-operatives have multiplied throughout the world. Among factors accounting for this growth are a widening appreciation of the part that co-operatives can play in facilitating agricultural progress, and a valuable exchange of technical knowledge at the international level through meetings, training courses and fellowships. The increased awareness of governments of the potential importance of co-operatives is exemplified by the number of countries, especially in Africa, Asia and Latin America, which have enacted legislation specifically for the regulation and encouragement of co-operatives. For the purpose of a brief review of their recent history the main types of agricultural co-operative are grouped as follows: savings and credit, production, marketing, purchase and supply services, fishing and forestry co-operatives and lastly a miscellaneous category which includes the multipurpose society.

Chapter II - WORLD REVIEW AND OUTLOOK

INTRODUCTION

The main trends that have characterized the food and agricultural situation of recent years continued in 1956/57. World agricultural production again increased at a rate rather over 1 percent faster than the growth of world population, and a similar over-all increase is expected for 1957/58, in spite of a possible slight reduction in North American output. The tendency of prices to move against farmers continued. On world markets this meant that a further sharp rise in the volume of agricultural trade brought no increase in real purchasing power to agricultural exporters. On domestic markets a rise in farm prices, due in some cases to higher price supports, was, in most countries for which data are available, exceeded by the rise in prices paid by farmers. Thus there were further declines in farm incomes in several countries, though in some others the increase in the volume of production was sufficient to offset the effect of price changes. Retail food prices rose in almost all countries, reflecting renewed inflationary pressures, as well as increased farm prices and the lowering of consumer subsidies in some cases. Consumption appears in general to have kept pace with the growth of production and, where active economic development isunder way, to have sometimes exceeded it, necessitating larger imports in many countries. Surplus stocks of most commodities showed no further rise and for some products began to decline ; the main exception was coarse grains stocks which again rose sharply.

There was some tendency during the year to scale down existing agricultural development plans and to abandon certain projects, sometimes because of reduced export earnings, and sometimes because of the inflationary pressures generated by the pace of economic development. In the United States efforts to bring farm production more closely into line with demand continue, and may be reinforced by some further modifications of price support policies. A new development, which may have important repercussions in the future, is the agreement, now awaiting ratification, to establish a Common Market in Western Europe, and the trend toward establishing similar trading areas in other regions.

A significant feature of the trend of agricultural production in the last few years is that the rate of increase has been above the average for the world as a whole in each of the economically less developed regions, while in the more developed parts of the world production has tended to increase at a slower rate. To some extent, however, this is offset by the more rapid growth of population in the less-developed countries. Progress in both the Far East and in Latin America has not yet been sufficient to overcome the wartime setback when production fell behind population, and in these two regions per caput production remains lower than before the war. This deficiency is reflected not in lower levels of consumption — in Latin America as a whole there appears to have been an increase — but in reduced food exports and larger food imports, a development which has added to the difficulties of balancing foreign payments and maintaining the tempo of development programs.

Although the further removal of currency and other trade restrictions would enable the underfed parts of the world to import more food, increased domestic production remains the basis of any improvement in food supplies in such regions. Not only will the major part of any increase in consumption levels inevitably come from domestic production, but in countries that are largely agricultural, increased agricultural production is not only the chief means of improving their trade balances, but also of raising the extremely low standard of living of their rural populations.

Thus, even in a world where there are surplus stocks, the importance of plans and programs to increase agricultural production remains paramount in the less developed regions. It is encouraging, therefore, to find that in general the targets established earlier for agricultural production in 1956/57, and reviewed at the 1953 Session of the FAO Conference, were exceeded by some 3 percent for the world as a whole, and were in fact already reached in the preceding season. In the Far East the targets and estimates made in 1953 were considerably exceeded, in Africa and the Near East actual production in 1956/57 was approximately as expected, and, among the underdeveloped regions, only in Latin America did production lag appreciably behind the planned level. In the latter region targets were set rather high because of the especially rapid population increase and, although they were not achieved, production has nevertheless increased at a rate faster than the world average. It may be recalled that when the 1951 Session of the FAO Conference asked governments to present their plans for expanding production, it recommended an increase of some 1 to 2 percent in excess of the annual rate of population growth. This rate of increase has actually been achieved, though preliminary estimates suggest that it was rather close to the lower limit of the suggested range.

New development programs were prepared or begun in many of the underdeveloped countries in 1955/56. A main feature of 1956/57 has however been a temporary slackening in the pace of implementation of agricultural development projects in some countries. During 1956/57 a few new plans have been established or projects begun, but the revision or postponement, because of inflationary pressure, reduced export earnings or political factors, of plans begun last year or before has been rather frequent, which may indicate the need for greater flexibility in agricultural planning techniques. More flexible plans would enable one of several alternative courses to be chosen, if financial or other circumstances change, instead of the complete abandonment or postponement of the whole plan.

Turning from production to trade, the volume of world trade in agricultural products, which had stagnated for some years at approximately the prewar level, followed the upward movement of 5 percent in 1955 with an even sharper rise of about 8 percent in 1956. Much, though by no means all, of this increase was, however, the result on the one hand of greatly intensified United States surplus disposal operations, total North American agricultural exports increasing by as much as 30 percent in 1956, and on the other hand of increased import demand partly resulting from poor crops in some countries of Western Europe and the Far East.

With supplies from both current production and stocks so abundant in 1956, the average unit value of agricultural commodities in world trade continued to decline slightly. The increase in the total value of agricultural trade was therefore only about 4 percent in 1956, and its "real" value, in terms of its purchasing power for manufactured goods, appears to have remained constant for the past three years in spite of the 13 percent increase in volume during this period.

Some of the recent trends in the volume and value of trade in agricultural products can be explained by the long-term influences analyzed in last year's issue of this report. It appeared then that national policies of greater selfsufficiency, together with technical developments in the field of substitutes, were two of the major influences limiting the growth of world trade in agricultural products. The bulk of this trade still consists of imports into the main industrialized countries, and imports of the products which these countries can readily produce themselves or for which substitutes have been developed, have tended to increase rather slowly or even decline. On the other hand, trade has continued to expand rapidly, proportionately to the growth of the world economy, for those products which the industrialized countries cannot easily grow themselves or which cannot be replaced by substitutes. This analysis has not been carried further in the present report, but it is hoped to develop it more fully as one means of forecasting future trends in international trade in agricultural products.

A recent development that may influence the pattern of agricultural trade (and thus also production policies) in the next few years is the tendency to set up enlarged trading areas with common markets or customs unions. During the year under review the treaty establishing the European Common Market has been signed and now awaits ratification; a treaty for a free trade area has been signed under the Central American Integration Program, and similar agreements are being considered in other regions.

Reflecting the sharply increased volume of trade of the last two years, and also to a small-

re extent the restrictions on production in the United States, stock levels again showed only a relatively small increase during 1956/57. United States stocks of wheat and cotton began to decline, but there was another substantial increase in North American coarse grains stocks, to which the main upward pressure appears to have shifted in the last few years. By the end of 1957/58, with the United States Soil Bank Program in full operation, over-all North American stocks may show some reduction. It appears, however, that the rapid working down of stocks hoped for from the Soil Bank is unlikely to materialize. Farmers' participation in the program has been less than anticipated, and the effects of lower acreage have been to a great extent vitiated by higher yields on the remaining area. Further modifications in United States price support systems are contemplated.

The prices received by farmers generally showed small increases during 1956 and the early months of 1957. Especially in Western Europe the trend to aid farmers by means of direct grants, loans and subsidies linked with the use of more efficient methods has continued, but farm price supports have also been raised in some countries. Costs appear to have risen even faster, however, in almost all countries for which data are available, and there have been some further declines in net farm income. In some countries, on the other hand, production rose sufficiently to overcome the deterioration in the price ratio and incomes increased, sometimes reversing a previous declining trend.

Farm prices are now supported in so many countries that a comparison of their level in different countries is of interest. A tentative comparison brings out mainly the very wide range of these support levels and also the fact that in terms of United States dollars, they are very frequently, in both exporting and importing countries, considerably above average unit values in world trade. The wide differences in support levels, generally reflecting the different aims of agricultural policy in the countries concerned, inevitably imply increasing governmental intervention in international trade.

With the renewal of inflationary pressures in 1956, retail food prices rose in almost all countries. In many cases the increase in food prices was a continuation of the trend of several years, but a feature of 1956 was the resumption of a rising trend in a rather large number of countries where it had been temporarily halted for a year or more. Developments during the first few months of 1957 indicate that the upward movements of food prices will probably continue. Higher farm prices are likely in some countries, and many governments are tending to continue to lessen the cost of food subsidies.

The above account attempts to put into perspective some of the main developments in the world food and agricultural situation during 1956/57, which are discussed in more detail in the rest of this chapter.

AGRICULTURAL PRODUCTION IN 1956/57

Changes in the level of agricultural production in 1956/57 closely paralleled those in 1955/56. World production again increased by about 3 percent and changes in the production of the main regions were also very similar to those that took place in the previous year. In Oceania, however, the sharply increased level of 1955/56 does not appear to have been quite maintained, and in Africa production resumed the rising trend that had temporarily been halted (Table II-1). Except for Oceania, the production increase in 1956/57 was fairly evenly distributed among the different regions of the world.

The average rate of increase of world agricultural production during the last few years remains rather more than 1 percent ahead of the growth of population. There was a slight improvement in world per caput food production in 1956/57, but no marked change in per caput production levels has occurred in any region since the substantial upward movement of 1953/1954 (Table II-2).

World agricultural production in 1956/57 is estimated at about 17 percent above the average of 1948-52. Thus the percentage increase in the six years since the mid-point of 1948-52 has now equalled that achieved in the period, more that twice as long, from 1934-38 to 1948-1952, indicating the magnitude of the setback during the war years. In the more recent period the increase in production in most regions has been relatively close to the world average. The greatest increase has been in the Near East, but in all the other less developed regions also it was a little above the world average, while the smaller increases have been in the developed regions. Since 1948-52, therefore, the less well fed regions have somewhat improved their

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

REGION	Prewar average	1953/54	1954/55	1955/56	1956/57 (preliminary)	Average annual increase 1948/49-1952/53 to 1956/57	
						Production	Population
	Average 1948/49-1952/53 = 100					*Percentage*	
Western Europe	93	115	115	116	118	2.7	0.75
North America	73	107	104	108	112	2.0	1.8
Oceania	88	108	108	115	114	2.1	2.4
Subtotal above regions	82	110	109	112	115	2.3	1.2
Latin America	82	108	113	116	119	2.9	2.3
Far East (excluding China)	97	110	113	117	119	3.0	1.4
Near East	83	119	119	121	125	3.8	2.2
Africa	78	113	117	116	120	3.1	1.9
Subtotal above regions	88	111	114	117	120	3.1	1.7
All above regions	85	111	111	114	117	2.7	1.5
WORLD[1]	...	110	111	114	117	2.7	1.5

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

position compared to the better fed parts of the world in regard to total agricultural production.

In relation to the prewar period, however, the production gain in the less developed group of regions is still slightly less than in the more developed group, because of the considerable fall in output in the Far East during the war. Moreover, on a per caput basis rather wide disparities remain in the production increases since the prewar period in these two groups of regions. In Latin America (where the population increase has been particularly rapid) and the Far East, although recent production gains have matched those in the rest of the world and have been ahead of the annual growth of population, they have not yet been sufficient to overcome the setback of the war years when production lagged behind population. In these two regions, therefore, per caput production is still less than before the war, as is also the case in Oceania, where immigration causes an exceptionally high rate of population increase.

TABLE II-2. INDEX NUMBERS OF VOLUME OF TOTAL AND PER CAPUT FOOD PRODUCTION[1]

REGION	Total Food Production					Per Caput Food Production[1]				
	Prewar average	1953/54	1954/55	1955/56	1956/57 (preliminary)	Prewar average	1953/54	1954/55	1955/56	1956/57 (preliminary)
	Average 1948/49 - 1952/53 = 100									
Western Europe	93	115	115	116	118	102	112	112	112	112
North America	71	107	104	109	114	85	101	97	100	102
Oceania	90	107	107	113	109	108	100	97	100	94
Subtotal above regions	82	110	109	112	115	92	107	104	106	108
Latin America	80	109	113	115	119	108	101	103	102	104
Far East (excluding China)	96	111	113	116	119	116	106	107	110	110
Near East	83	121	119	121	126	102	113	110	109	110
Africa	79	113	116	115	119	96	106	108	104	106
Subtotal above regions	88	112	114	116	120	107	106	107	107	109
All above regions	84	111	112	114	118	101	106	105	106	107
WORLD[2]	...	110	111	114	118	...	105	105	106	107

[1]Indices of per caput food production should not be thought of as reliable indications of changes in the per caput supply of food, because of the influence of foreign trade and stock changes. See Chapter III for a discussion of per caput food supplies.
[2]Including estimates for the U.S.S.R., Eastern Europe and China.

Regional Production in 1956/57

Agricultural production in *North America* again rose by about 4 percent in 1956/57, reaching new record levels in both Canada and the United States. The increase in Canada was as much as 8 percent ; grain crops were again higher in spite of further reductions in the acreage, especially of barley, and there was a substantial rise in the output of livestock products. In the United States production was a little above the level of the previous year, although the total harvested acreage was down by 4 percent because of drought conditions in some areas and the first limited effects of the Soil Bank. United States grain output rose slightly, larger harvests of maize and wheat offsetting declines in rye and rice. Production of soybeans and of most livestock products increased sharply, but cotton and tobacco were reduced on account of the smaller acreage, which in the case of cotton was reinforced by lower yields (see Annex Tables for details of production in the different regions).

In *Oceania* preliminary estimates indicate that production was a little less than in 1955/56, when there was an increase of more than 6 percent, though it remains well above the level of earlier years. The Australian wheat harvest fell by as much as one third and was the smallest for ten years ; the area was reduced because of adverse weather conditions early in the season and yields were also lower. Output of wool, milk, barley and oats continued to increase, but meat production is expected to be lower than in 1955/56. In New Zealand the rising trend of production appears to have continued for most products except cheese.

In spite of the severe weather in early 1956, production in *Western Europe* showed a further small increase. The frost destroyed much of the winter wheat in France and some other countries of Northwestern Europe, so that the region's wheat output fell by about 6 million tons, or more than 15 percent, though it was still above the 1948-52 average level. The total production of grains increased, however, as the area affected by frost was reseeded with spring barley, the output of which increased very sharply, especially in France. The production of citrus fruit was somewhat lower, the orange harvest in Spain being severely reduced by the frost damage to the trees, and olive production was also affected in some countries of Southern Europe. The upward trend of livestock production continued in most countries. In the United Kingdom, the main importer of these commodities, the increase in the production of milk, meat and eggs was as much as 10 percent, but in Denmark, the principal exporter, livestock output fell by about 3 percent.

In the *Far East* (excluding China), present estimates indicate a production increase of about 2 percent in 1956/57, rather less than the rise in the preceding year. While per caput production remains less than before the war, the slight improvement in per caput levels achieved last year appears to have been maintained. In spite of floods in both countries, production increased in India and probably in Pakistan, where, however, recovery from the low level of the previous year may not yet be complete. The Philippines had a good year, but in most other countries there appears to have been little change in output in 1956/57. Production in Japan was materially greater than in 1954/5, but did not maintain the very high level of 1955/56, while the decline in production in Indonesia seems to have continued. The region's total grain output appears to have increased fairly substantially in 1956/57 : there were record rice crops in Burma and Thailand and good ones in most other countries, though in Ceylon and South Korea they were reduced by bad weather. Sugar crops were excellent in India, Japan and Taiwan, and there was an improvement in the region's production of oilseeds. Among the commodities that are mainly exported, cotton increased sharply, jute fell back slightly from the very high level of the previous year, and rubber was reduced by the slow rate of replanting and a scarcity of skilled labor.

In *Latin America* production is provisionally estimated to have again increased by about 3 percent in 1956/57. The rate of population growth is so rapid in this region, however, that per caput production rose only slightly and remains below the prewar level. The increase in production in 1956/57 would have been rather greater but for the incidence of droughts in several countries. In Argentina drought reduced maize and sunflowerseed crops and created cattle-feeding problems, but larger production of wheat, meat and linseed appears to have maintained the over-all level of output. In Uruguay most crops were reduced by drought and meat production declined further ; frosts as well as drought affected production in Chile; the southern part of Peru suffered from dry conditions for the second consecutive year and emergency meas-

ures were necessary to feed the rural population in that area. Mexico, on the other hand, had another excellent year, though cotton plantings were reduced by the lower world prices. In the region as a whole, total grain production increased, especially wheat and barley, and sugar rose quite sharply. Livestock production appears to show a further small increase. Apart from linseed, which was more than double the very small output of the previous year, most of the more important nonfood crops declined, particularly coffee, which in Brazil fell more than 20 percent from last year's postwar record.

Agricultural production in the *Near East*, which after previously rising very rapidly had changed very little since 1953/54, registered a substantial upward movement in 1956/57. There was a large increase in grain production, which almost reached the peak level of 1953/54. The main increases in grain output were in Egypt, Iran, Iraq and Syria; in Turkey the wheat harvest was slightly reduced. The rapid rise in the region's cotton production continued; there was a further sharp increase in Syria, but a slight fall in Egypt. The output of dates declined in Iran and Iraq, but production of other fruit and, especially, of vegetables increased substantially in some countries, under the stimulus of high import demand in the Persian Gulf area.

After falling off slightly last year, agricultural production in *Africa* resumed its former rapidly rising trend in 1956/57. North African harvests recovered from the low level of 1955/56, though there was another short wheat crop in Tunisia. Production of citrus fruit, wine and especially olives also increased sharply in North Africa. South of the Sahara, production of all the major export crops was again large; groundnuts almost reached the peak levels of last year and there was a substantial increase in cocoa production. Crops are expected to be large in the Union of South Africa, where the wheat harvest was a record for the second year in succession.

Agricultural Production in the U.S.S.R., Eastern Europe and China

A special note may be added on the Communist group of countries, where data on agricultural production, though now more widely published, are generally less readily available than for most other parts of the world. The year 1956 was marked by bad weather in Europe in the spring, by particularly severe floods and typhoons in China, but by excellent conditions in the Asiatic parts of the U.S.S.R. Grain harvests fell by about 10 percent in Eastern Europe and increased by 20 percent in the U.S.S.R. and 5 to 6 percent in Mainland China (see Annex Table 3A).

The successful cereal harvest in the U.S.S.R. was mainly due to good crops in Siberia and Kazakhstan. These regions furnished 70 percent of state procurements of grain in 1956, as against only 30 percent in 1953. This was partly caused by poor harvests in the Ukraine and other western parts of the U.S.S.R. as a result of the bad weather, but it nevertheless appears that the center of gravity of cereal production is shifting toward the east since the opening up of the virgin lands was begun in 1954. The liability of Siberia and Kazakhstan to droughts was, however, demonstrated in 1955.

U.S.S.R. production of potatoes improved substantially over the low level of 1955, but the output of vegetables was smaller. The sugar beet harvest is reported to have been 5 percent above 1955 as a result of increased area, but yields were low because of the bad weather in the Ukraine. Cotton production increased by as much as 13 percent, although planned yields were not reached in certain areas. Flax production rose only slightly after the sharp increase of 1955, in spite of an area some 30 percent larger, and the output of sunflower seed increased by about 6 percent.

An improvement in the production of animal feedingstuffs is reported, but the progress of the livestock industry varied in different parts of the U.S.S.R. Livestock numbers increased substantially in some regions, but fell sharply in others, and in the U.S.S.R. as a whole cattle increased by 5 percent, pigs by 8 percent and sheep by 4 percent. Milk production increased, especially in the winter months, and milk yields improved on collective farms. The production of meat and also of eggs increased only slightly, which was a major setback in view of the doubling of meat production between 1955 and 1960 called for by the five-year plan. According to a recent statement by Mr. Khrushchev the gross production per caput of meat is now 32.3 kilograms per year, of milk 245.0 kilograms and of butter 2.8 kilograms.[1]

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[1] *Izvestia*, 24 May 1957.

In Eastern Europe, cereal harvests were reduced in 1956 in all countries except Czechoslovakia. In Bulgaria and Hungary production fell by as much as 20 to 25 percent. The output of sugar beet was also poor throughout Eastern Europe, falls in production ranging from 13 percent in Poland to 27 percent in Czechoslovakia. The production of potatoes, in contrast, recovered sharply from the very low level of 1955. The two largest producers, Eastern Germany and Poland, reported increases of, respectively, 30 and 40 percent; Poland and Czechoslovakia had their largest harvests for some years and production fell only in Hungary. Good progress in fruit and vegetable production is reported from Bulgaria and Romania.

There was a substantial increase in meat production in most Eastern European countries in 1956, but this was in part caused by increased slaughterings because of the shortage of feedingstuffs that followed the poor harvests. Slaughterings were stepped up particularly sharply in Hungary and Eastern Germany. Pig numbers declined in the latter country, but the effect on livestock numbers of the 10 to 12 percent increases in meat production in Bulgaria, Czechoslovakia and Poland is not yet known. Milk production rose by about 8 percent in Bulgaria, where the yield per cow increased in 1956, and to a smaller extent in the other countries of Eastern Europe. The production of eggs also generally increased.

In Mainland China there were floods in the northern provinces and droughts elsewhere in 1956. On the other hand, irrigation works were considerably advanced during the year and 2 million hectares of virgin land were put into production out of the total of 30 million that it is proposed to develop. The total harvest of staple food crops (cereals, legumes, potatoes and soybeans) is reported to have increased to 195 million tons in 1956 from 184 million tons in 1955. In spite of this improvement, however, the planned level of production was not attained, and with the high rate of population increase (2.2 percent) and rapid urbanization it was necessary to announce certain restrictions on consumption. According to the five-year plans and to the 12-year plan for agriculture, the aim is to raise the production of staple food crops to 208 million tons in 1957, 262 million tons in 1962 and 400 million tons in 1967.

China's cotton production is reported to have increased from 1.5 million tons in 1955 to 1.6 million in 1956. Harvests of tobacco, hemp and tea are also reported to have been good, though tea production remains well below the prewar level. For jute, silk and certain oilseeds results were less satisfactory. Attempts are being made to develop certain new or hitherto minor crops, in particular high-yielding crops such as maize and potatoes and also some industrial crops, and it has been announced that the production of rubber is being developed on Hainan Island.

The livestock sector remains the weakest point of agriculture in China, and there was little progress in 1956. It appears, however, that pig numbers recovered from the decline that had occurred in 1955.

Fisheries Production

Present data indicate that the 1956 world catch of fish, crustaceans and mollusks was about 28 million tons, approximately the same as in 1955. Several countries had record or near-record catches. Norway's landings of almost 2 million tons exceeded the previous record of 1954, and herring and sprat landings were the second highest on record, with 1.4 million tons compared with 1.1 million in 1955. In Angola the 1956 catch of 400,000 tons was a considerable improvement from 290,000 tons in 1955. The United States' catch was the third highest in history, and landings of menhaden and tuna both reached record levels.

Where catches were low, this was caused mainly by declines in the abundance of fish rather than by economic factors. In the Union of South Africa the catch of pilchards and maasbanker was the worst since the inception of fishery in 1947, but in South West Africa it was possible to catch the total quota permitted by the government. In Canada, although sockeye landings were slightly larger, the pink and especially the chum salmon were very poor, resulting in the smallest pack since 1944 (see Annex Table 11).

Forestry Production

There was a lull in the rapid growth of output of forest products during 1956, when total fellings were at about the same level as in 1955. A renewed expansion in most parts of the world is, however, expected in 1957/58.

In Europe and, especially, North America there was some decline in the production of

sawnwood, because of the lower demand resulting from reduced building activity and a certain slackening of economic activity. This was largely offset, however, by an increased demand for pulpwood, and in Europe for fuelwood as well, as a result of the Suez crisis. The upward trend of production of all forest products continued in 1956 in the U.S.S.R. and the Far East. Production in Japan established a new record in 1956. In Latin America the output of sawnwood fell slightly, while in Africa there was little change from the 1955 level of production except for a further rise in the Union of South Africa (see Annex Tables).

Comparison of Agricultural Production in 1956/57 with Earlier Programs and Estimates

Following a resolution of the Sixth Session of the FAO Conference in 1951, FAO prepared in 1952 and early 1953 a comprehensive set of estimates of the likely course of agricultural production and trade during the next five years if Member Governments' programs, targets and expectations at the time were realized. The data were assembled in the form of estimates of the approximate level of world production and trade in or around 1956/57, and were based on data published, or submitted by governments to FAO, OEEC and other international bodies. They were reviewed at FAO Regional Conferences in mid-1953, and were summarized both on a regional and on a commodity basis for presentation to the Seventh Session of the Conference toward the end of that year.[2]

In presenting these data, it was stressed that " the estimates of production in or around 1956/1957 which follow are not FAO forecasts. Essentially they represent what governments planned to do or expected would happen, given normal weather, at the time that the basic data were assembled.... FAO has done no more than to fill any gaps in the official figures.[3] Some of the plans may have to be modified under the pressure of events. Similarly estimates based on current trends may need modification if circumstances change. Actual production may sometimes fall short of the 1956/57 estimates or may sometimes exceed them, though in most instances this seems less likely. The figures do, however, reveal the way in which governments are thinking on problems of agricultural production, and indicate broadly what would happen if present plans are successfully implemented and if current policies and trends continue. "

Now that preliminary figures of actual production in 1956/57 are available, it is instructive to compare them with these earlier estimates. For the world as a whole (excluding the Communist group of countries) the note of caution in the paragraph quoted above proved to be unfounded. From the preliminary estimates presented in Table II-1 above and compared in Table II-3 with the forward estimates made earlier, it appears that actual world production in 1956/57 exceeded these expectations by about 3 percent. In point of fact the 1956/57 targets were actually reached one year earlier. The only region where over-all production fell appreciably short of the estimates was Latin America where, however, the targets had been among the most ambitious, because of the exceptionally rapid growth of population and because of inflationary pressures arising in part from the failure of agriculture to keep pace. Even so, the actual expansion of output in Latin America was above the world average. On the other hand, actual production in Western Europe, North America, Oceania and the

TABLE II-3. OVER-ALL AGRICULTURAL PRODUCTION IN 1956/57 BY REGIONS IN COMPARISON WITH ESTIMATES PRESENTED TO THE FAO CONFERENCE OF 1953

REGION	Total Agricultural Production		
	1955/56	1956/57	
		Forward Estimate[1]	Actual[2]
	Indices (Average 1948/49-1952/53 = 100)		
Western Europe	116	113	118
North America	103	107	112
Oceania	115	108	114
Latin America	116	123	119
Far East (excluding China)	117	115	119
Near East	121	126	125
Africa	116	119	120
All above regions	114	114	117

[1]The original estimates based on submissions from Member Governments were calculated on the base 1934-38 = 100 ; they have been reworked on a 1948-52 base for ease of comparison with the data in Table II-1.
[2]Preliminary.

[2] *The State of Food and Agriculture 1953 : Part II - Longer Term Prospects.*
[3]FAO secretariat estimates accounted for less than one quarter of the estimates of total world production in 1956/57 and were concerned mainly with some of the less important commodities and with a few countries which had been unable to furnish the required data.

TABLE II-4. ESTIMATED WORLD PRODUCTION[1] OF MAJOR PRODUCTS IN 1956/57 COMPARED WITH EARLIER FORWARD ESTIMATES

PRODUCT	Average 1948-52	1955/56	1956/57		1956/57	
			Forward Estimate[2]	Actual[3]	Forward Estimate[2]	Actual[3]
	Million tons				*Indices 1948-52 average = 100*	
Breadgrains	122	133	133	131	109	107
Coarse grains	233	263	260	274	112	118
Rice (milled basis)	75	88	90	92	120	123
Total cereals	430	484	483	490	112	114
Sugar (raw equivalent)[4]	31.8	37.4	34.4	38.7	108	122
Oilseeds (oil equivalent)	11.6	13.3	13.8	14.5	119	125
Citrus fruit	14.9	17.8	17.7	17.7	119	119
Bananas	10.5	11.7	11.9	11.4	113	109
Coffee	2.26	2.81	2.63	2.66	116	118
Cocoa	0.76	0.84	0.81	0.91	107	120
Tea	0.56	0.67	0.64	0.67	114	120
Tobacco	2.46	2.91	2.73	2.86	111	116
Cotton	5.76	6.76	6.66	6.56	116	114
Jute	2.03	2.36	2.17	2.28	107	112
Rubber	1.74	1.94	2.12	1.87	122	107
Wool (clean basis)	0.90	1.06	0.94	1.06	104	118
Milk	206	232	231	236	112	115
Meat	30.8	37.3	35.5	38.4	115	125
Eggs[5]	6.0	6.8	7.1	6.9	118	115
Fish[6,7]	22	28	27.5	28	125	128
Sawn wood (million cubic meters)[7]	190	220	197	215	104	113
Woodpulp[7]	31	44	37	46	119	148

[1]Excluding U.S.S.R., Eastern Europe and China.
[2]Based on official production targets etc., (see text).
[3]Preliminary.
[4]Including approximate raw equivalent of noncentrifugal sugar.
[5]Western Europe, North America and Oceania only.
[6]The forward estimate was for a 25 percent increase over the base period ; the base period average was subsequently revised from 24 to 22 million tons and the forward estimate adjusted accordingly.
[7]Not included in indices of agricultural production in Table II-3 ; data are for calendar years, and include Eastern Europe

Far East was appreciably larger in 1956/57 than had been foreseen, while for the Near East and Africa over-all production appears to have coincided rather closely with the forward estimates.

The same data are shown for some of the more important commodities in Table II-4, and in greater detail in Figure II-1, which shows the trend of production of the main agricultural commodities in each region in recent years and also their relative magnitudes. Actual world production in 1956/57 greatly exceeded earlier expectations for meat, sugar, cocoa, wool, sawnwood and wood pulp, and to a somewhat smaller extent for coarse grains, oilseeds, tea, tobacco and jute. It fell short of the forward estimates of production for only five of the commodities included in the table : wheat and cotton (where marked efforts have been made in North America to limit production), bananas, rubber and eggs.

The production of bread grains in North America in 1956/57 showed a decline compared with 1948-52, though less than had been expected in spite of intensified measures of restriction. Production was also lower in Oceania because of the poor harvest, but it has increased in all other regions, though not always as much as programed. Coarse grain production, however, has expanded in all regions of the world, and especially in Western Europe where a rapid rise in consumption has led also to a parallel growth in imports, and where the reseeding of winter-damaged wheat with coarse grains in 1956/57, mainly in France, was also a factor. The modest rise of production in North America, despite increased measures of restriction, has led to a sharp rise in stocks of coarse grains.

FIGURE II-1. Regional Production of Main Agricultural Products in 1956/57 : Actual Production Compared with Targets and Estimates Made in 1953 and with 1948-52 Average

(Million metric tons unless otherwise stated)

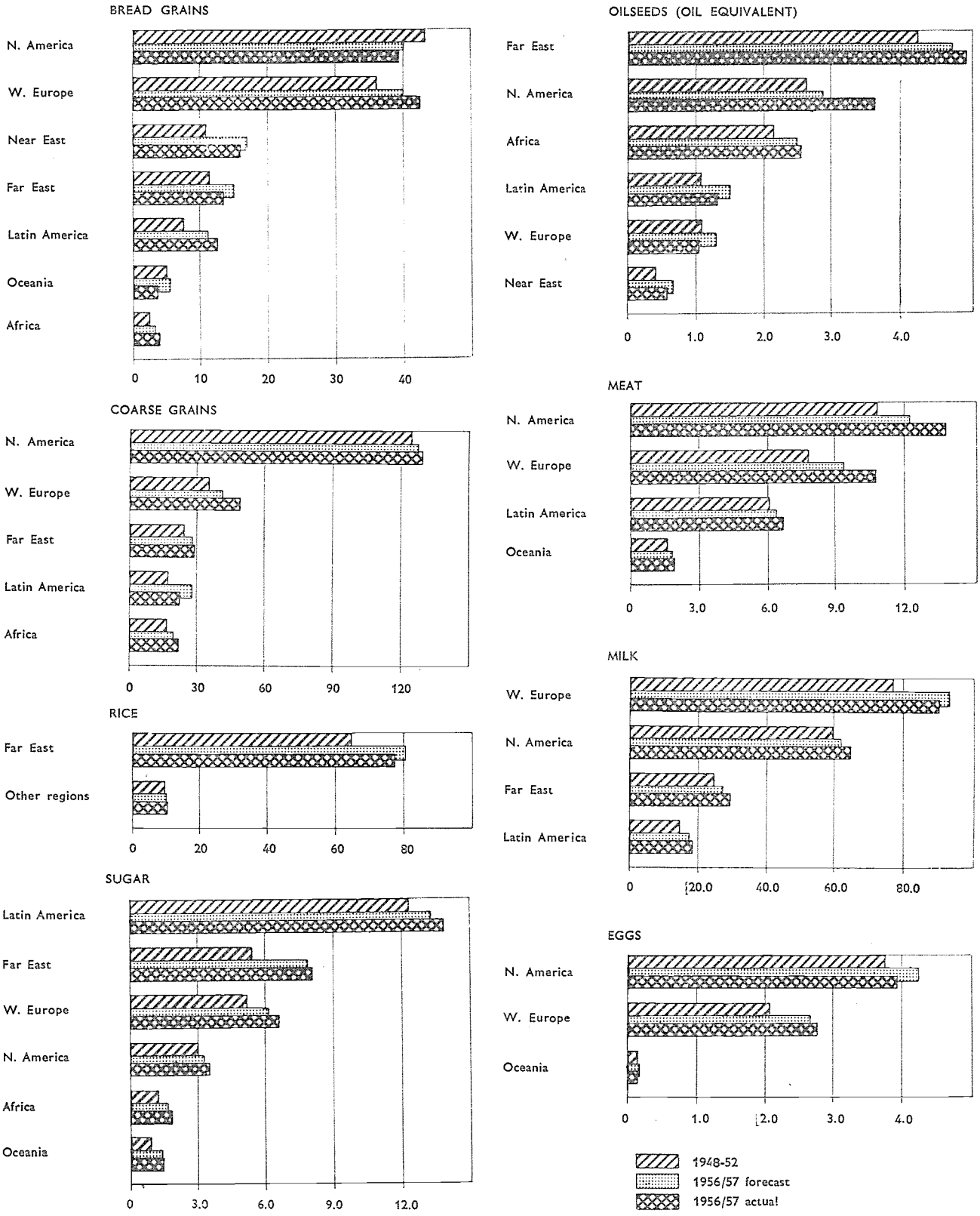
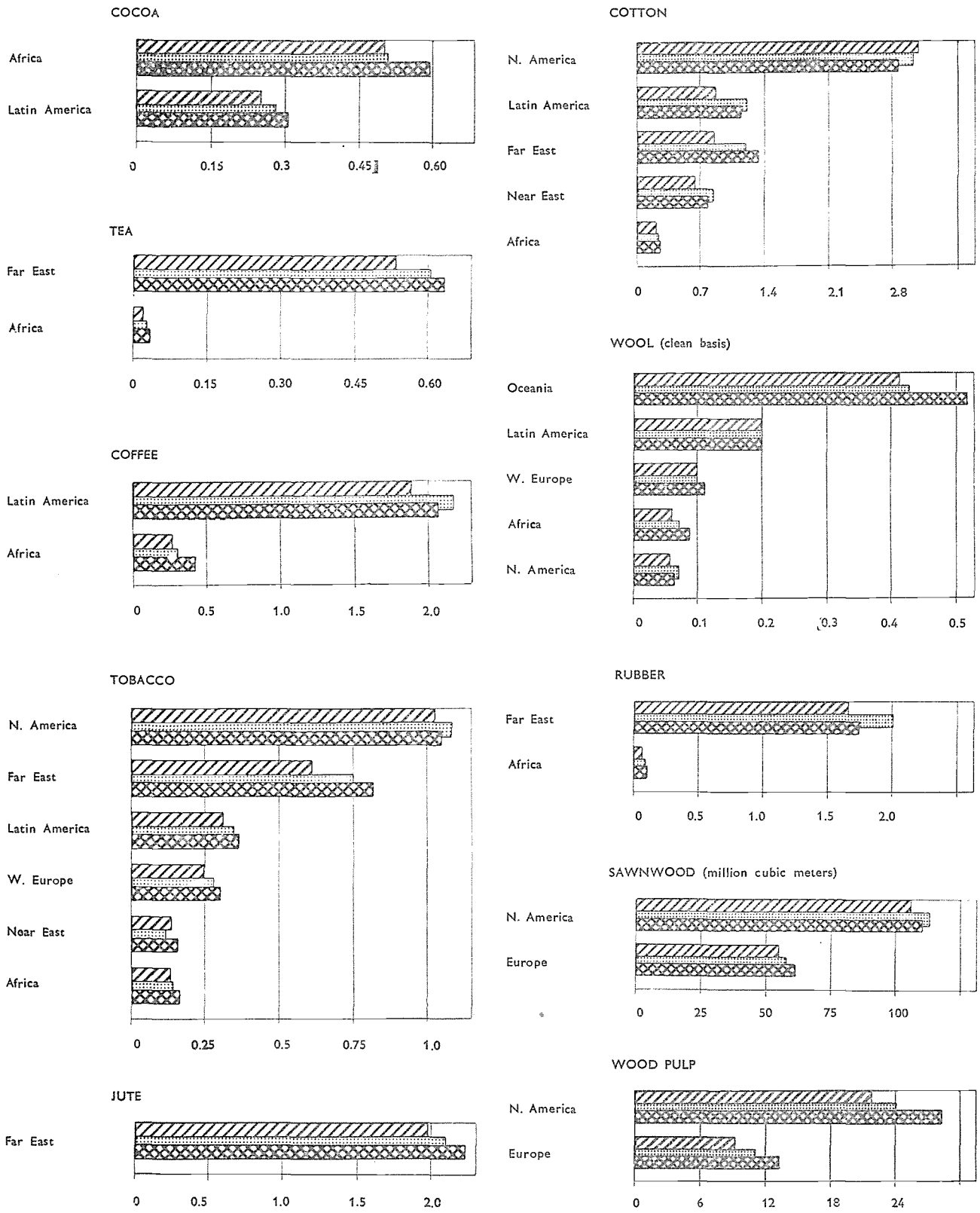


FIGURE II-1. Regional Production of Main Agricultural Products in 1956/57 : Actual Production Compared with Targets and Estimates Made in 1953 and with 1948-52 Average (*concluded*)

(Million metric tons unless otherwise stated)



Rice production has moved upward in line with official programs in the Far East, which accounts for some 90 percent of world production. World production of all cereals together is now some 14 percent greater than in 1948-52, compared with an expected increase of 12 percent and a rise in population of rather under 10 percent.

Perhaps the most striking expansion during this period has been in sugar. Production in all regions was greater in 1956/57 than had been expected, and for the world as a whole was some 22 percent above the average in 1948-52. The increased supply appears to be moving into consumption, and stocks have begun to decline. A sharp rise in the production of oilseeds in North America carried world production well above the level previously estimated, and there were also marked increases in the Far East and Africa, though European production has declined. The 1956/57 production of citrus fruit would probably have been above the forward estimate, but for the effect of the frost in early 1956 on the Southern European crop.

The production of all the beverage crops (coffee, cocoa and tea) has recently shown a spurt, and is now nearly 20 percent more than in 1948-52, a faster rise than had been expected. The cutback in cotton production in North America as a result of surplus stocks has been much more than offset by increases elsewhere, especially in the Far East where the demand is expanding rapidly and imports also increased. Wool and jute output have also sharply increased in recent years, in contrast to the rather cautious forward estimates. The slower growth of rubber production partly reflects increased competition from synthetic rubber ; production in 1956/57 was smaller, however, than in the preceding year, in part because of a temporary slackening in demand, coupled with labor problems in Sumatra.

Among livestock products, meat has shown by far the greatest expansion and in all regions the rise has been greater than had been expected. Milk production in Western Europe has risen sharply since 1948-52, in spite of growing marketing difficulties, but elsewhere the rise has been slower. The same is true of egg production. While earlier estimates of world fish production have been adjusted downward on the basis of more reliable data for Mainland China, the increase of 6 million tons expected between 1952 and 1956 has been achieved. The increase was due largely, however, to the rising demand for fish meal for animal feed.

Finally attention may be drawn to the sharply increased output of forest products, especially wood pulp, which has considerably exceeded expectations and the output of which was about 50 percent greater in 1956 than the 1948-1952 average. The only exception is for sawnwood in North America, where production declined in 1956, though in 1955 it reached the level which was earlier expected for 1956.

The Production Outlook for 1957/58

Such indications as are available at the time of writing suggest that in 1957/58 world agricultural production will continue to increase at a rate close to that achieved in the last few years. North American production may be slightly reduced, but further expansion in the other regions will probably maintain the rate of increase for the world as a whole.

Under the Soil Bank program, United States farmers have placed over 8 million hectares in the Acreage Reserve for 1957 and about 3 million hectares in the Conservation Reserve, a rather lower participation than was expected, especially under the latter part of the program. In addition, price supports have been further reduced for some commodities and acreage restrictions are more severe than last year. Planted areas of wheat, maize, rice, tobacco and cotton are lower than in 1956, but for maize the reduction is only some 5 to 6 percent, following the failure of the farmers' referendum to approve the Government's proposals for acreage allotments. Even for wheat, for which the reduction in area is as much as 22 percent, increased yields are expected to limit the decline in output to only about 3 percent. Other crops, especially some oilseeds and coarse grains, show sharp increases in area. Output of meat is expected to decline slightly in 1957 and milk to increase further. In Canada, farmers' planting intentions indicated a further reduction of about 7 percent in the wheat acreage and increases for barley and linseed. The output of livestock products is expected to show little change from last year.

In Western Europe, where the 1956 harvest of wheat and some other crops was reduced in certain countries by the bad weather at the beginning of the year, climatic conditions have generally been good so far this season. Above average

grain harvests are expected in most countries, especially France and Yugoslavia. The production of citrus fruit is likely to continue to be reduced by the effects of the frost damage to trees in Spain, but the output of most other crops should show further increases. In the livestock sector, production continues to grow, and the over-all rate of increase is likely to be above that in 1956.

The above two regions account for about half the total value[4] of world agricultural production (excluding the U.S.S.R, Eastern Europe and China). It is in the remaining regions, however, that the sharpest increases in production have taken place in recent years, and for them only the scantiest indications are available of the prospects for the 1957/58 crop. In the Near East, grain output will fall in Turkey as a result of drought, which has been followed by floods in the main producing area, but in other countries of the region, particularly in Syria, prospects for the grain harvest are good. Larger rice areas are expected in some of the Far Eastern rice exporting countries, while the acreage of jute appears likely to increase in both Pakistan and India. In North Africa, and especially Morocco, the output of grains will be sharply reduced by the severe drought conditions earlier in the year. Otherwise, all that can be said of these regions is that the intention is to increase production, though this intention may of course be vitiated by adverse weather later in the season.

INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

The most striking feature of international trade in agricultural products during 1956 was an increase of some 30 percent in the volume of exports from North America compared with the preceding year. This reflected on the one hand an intensification of surplus disposal operations in the United States and, on the other, an increased import demand, notably in Western Europe and the Far East. The expansion in the volume of North American shipments was not accompanied by a decline in those from other regions. Latin American exports rose by some 10 percent and shipments from all other regions except Western Europe showed modest increases. As a result the renewed expansion in the total volume of world agricultural trade which became evident in 1955 continued still more strongly in 1956, with an increase of some 8 percent over the preceding year, though it is of course uncertain whether this trend will continue.

Nearly half the increase in the volume of world trade in 1956 consisted of larger shipments of cereals, white cereals, cotton and coffee together accounted for more than 80 percent of the total increase. On the export side, more than half the increase in volume came from North America and about one quarter from Latin America. Imports into Western Europe still account for more than half the total volume of agricultural trade, and increased European imports represented roughly half the total increase in 1956 over 1955. Another third was made up of larger imports into Far Eastern countries (excluding Mainland China), where net cereal imports rose from 4.6 million tons in 1955 to 6.6 million tons in 1956, and imports of raw cotton also rose substantially. Both increases largely reflect the growing demand in that region with the rise of population and the progress of industrialization.

As in 1955, however, the growth in the volume of agricultural exports was not matched by a corresponding increase in value. The FAO index of average unit values, based on the trade accounts of the main exporting and importing countries and reflecting the general level of prices of agricultural products in international trade, declined further from 96 in 1955 to 93 in 1956 (1952-53 average=100). As against the increase of some 8 percent in the volume of world trade in agricultural products, the increase in its total value was thus only about 4 percent. At the same time average prices of manufactured goods in international trade continued to increase. If the total value of world trade in agricultural products is deflated by the United Nations index of average unit values of manufactured goods, it appears that an increase in the volume of agricultural exports of about 13 percent during the past two years has not brought with it any real increase in the ability of agricultural exporters to buy manufactured goods. But although in these terms the purchasing power of agricultural products in world markets has declined appreciably in the last few years, it is still of course much higher than during the years of depression immediately before the war (Table II-5). Recent changes in the volume and real value of trade in agricultural products are shown in Figure II-2.

[4] In terms of prewar price weights.

TABLE II-5. INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS: INDICES OF VOLUME, AVERAGE UNIT VALUE (AVERAGE PRICE) AND TOTAL VALUE

	Average 1934-38	Average 1948-52	1953	1954	1955	1956 (preliminary)
	(Indices: 1952-53 average = 100)					
AGRICULTURAL PRODUCTS						
Volume of world trade	103	95	102	101	106	115
Average unit value[1]	35	99	96	99	96	93
Total value of world trade[1]	36	94	99	100	102	106
VALUES IN REAL TERMS						
Average unit value[2]	71	102	98	103	99	92
Total value of world trade[2]	73	97	101	105	105	105

[1]At current prices. — [2]Above indices deflated by U.N. index of average unit values of manufactured goods in world trade.
NOTE: The above and all other trade indices in this report include trade between the countries of the Communist group and the rest of the world, but do not cover trade within this group, for which adequate data are not available.

Among the main commodities, there was a particularly sharp rise in shipments of cereals, coffee and also of oilcake in 1956. For cotton the increase in 1956 was largely a recovery from the low level of trade in the preceding year and shipments in 1956 were little higher than in 1954. There has also been a steady growth in the volume of trade in livestock products in recent years, while for sugar, fruit and vegetables, tea, tobacco, wine and wool the expansion has been more irregular. For other commodities trends are less marked. The usual FAO indices of the volume of trade (weighted by average 1952-53 prices) for the main groups of agricultural products are shown in Table II-6, and actual volumes for individual commodities in Annex Table 1B.

Table II-7 sets out the over-all situation region by region. North American agricultural exports in 1956 are provisionally estimated to have matched or slightly exceeded the earlier peak level of 1951 and to have exceeded somewhat the volume of agricultural imports. Latin-American exports also reached the highest level since the war, while the decline in agricultural imports continued with the renewed expansion

TABLE II-6. INDICES OF THE VOLUME OF WORLD TRADE IN AGRICULTURAL PRODUCTS BY MAIN COMMODITY GROUPS

PRODUCT	Average 1934-38	Average 1948-52	1953	1954	1955	1956 (preliminary)
	Indices: 1952-53 average = 100					
Cereals	106	93	97	92	97	117
Sugar	80	88	108	101	108	110
Oilseeds and vegetable oils[1]	151	98	103	125	127	126
Fruits fresh and dried	88	86	106	107	118	111
Livestock products	111	94	105	109	114	117
All food and feeding stuffs	108	92	102	103	108	117
Beverages and tobacco	89	95	104	99	106	115
Agricultural raw materials	104	98	102	101	102	110
All agricultural products	103	95	102	101	106	115
Forest products[2]	92	91	102	117	133	129
Total world trade[3] (agricultural and non-agricultural)	66	86	103	108	118	127

[1]While this price weighted index shows a slight decline in 1956, it should be noted that if the volume of trade in oilseeds and vegetable oils is totalled in oil equivalent there was a further increase in 1956.
[2]Not included in general index for all agricultural products.
[3]U.N. Index of world exports adjusted to 1952-53 base; comparable League of Nations estimates included for 1934-38.

FIGURE II-2. Recent Changes in the Volume and Real Value of International Trade in Agricultural Products

(Indices : 1952-53 Average = 100)

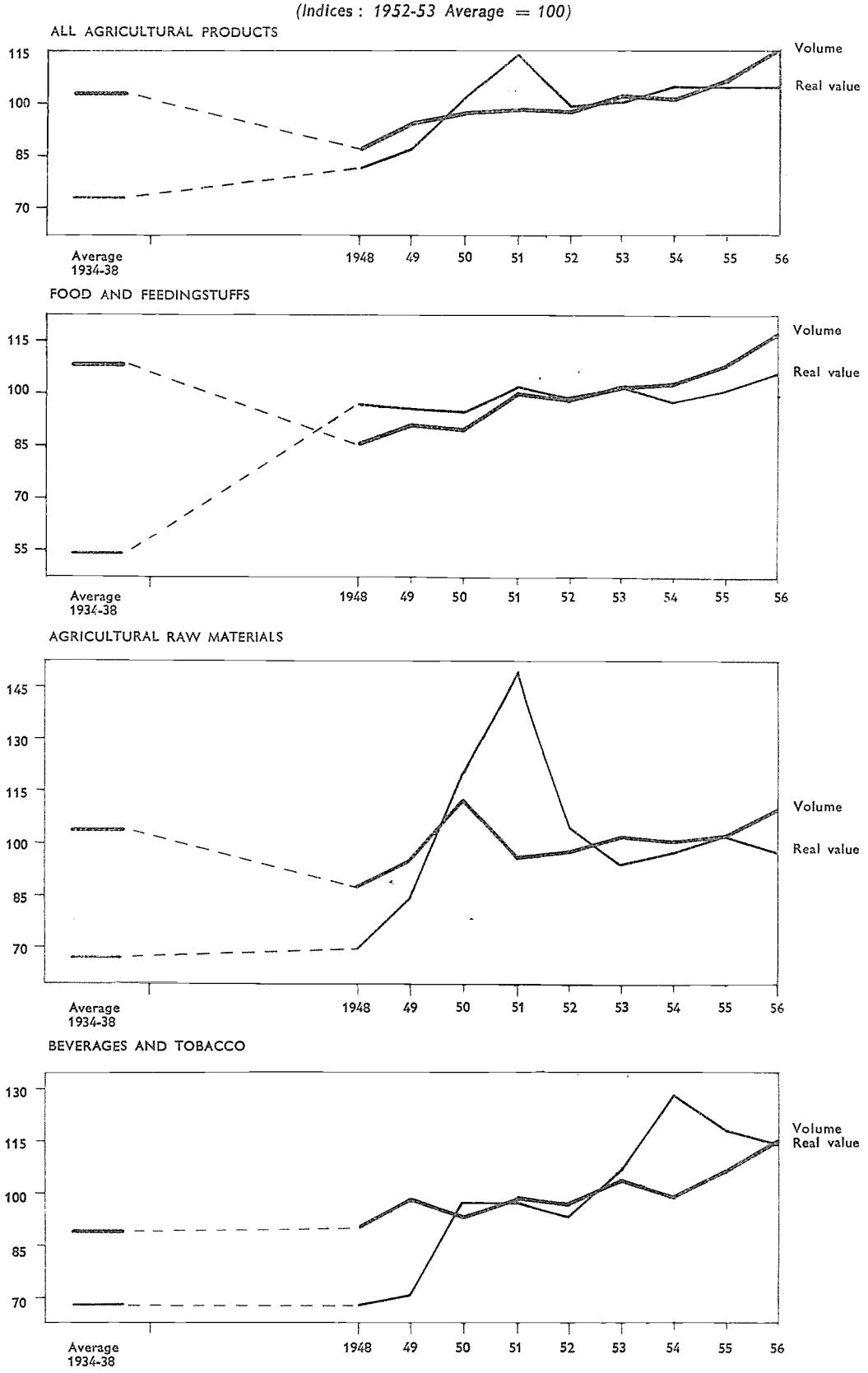


TABLE II-7. REGIONAL INDICES OF VOLUME OF TRADE IN AGRICULTURAL PRODUCTS

REGION	Average 1934-38	Average 1948-52	1953	1954	1955	1956 (preliminary)
	Indices: 1952-53 average = 100					
Western Europe						
Gross Export	109	82	103	114	122	119
Gross Import	113	95	105	106	111	118
Net Import	114	98	105	103	108	118
North America						
Gross Export	63	101	92	88	88	115
Gross Import	80	100	98	86	93	96
Net Import	218	94	152	67	133	[1]—65
Latin America						
Gross Export	103	100	109	102	105	117
Gross Import	61	93	104	103	96	95
Net Export	111	101	111	102	107	121
Oceania						
Gross Export	76	97	102	94	106	113
Gross Import	65	98	104	121	125	122
Net Export	77	97	102	92	104	112
Far Esat						
Gross Export	155	96	100	102	110	112
Gross Import	107	83	98	99	97	114
Net Export	392	162	109	116	173	99
Near Esat						
Gross Export	81	84	114	106	103	106
Gross Import	52	93	98	89	109	122
Net Export	104	78	127	119	97	94
Africa						
Gross Export	75	91	103	115	118	123
Gross Import	63	86	104	105	105	112
Net Export	79	92	102	118	122	126

[1]Net export.

in domestic production; as a result net exports reached a new high level. In the Far Eastern region, on the other hand, a small increase in exports was greatly outweighed by a much larger increase in imports, and net exports declined sharply.

Developments in other parts of the world call for no special comment, except for the marked increase in the volume of imports into Western Europe. Total wheat requirements of the importing countries of this region exceeded those of the previous year by around 2 million tons because of the frost damage, especially in France, while import requirements from outside the region rose to replace exports from this country. France exported substantial quantities of barley; nevertheless imports of coarse grains as a whole from outside the region in the first half of the 1956/57 crop year were running at a much higher level than in 1955/56. Western Europe also considerably increased its imports of butter and especially of meat in 1956. In particular imports of beef into the United Kingdom rose from about 360,000 tons in 1955 to almost 450,000 tons, the Argentine share alone rising from 160,000 to 250,000 tons. Argentina also sent nearly 60,000 tons of meat to Western Germany, compared with negligible quantities in the previous year.

The main feature of international trade in forest products in 1956 was a substantial decline in exports of roundwood and especially sawnwood, particularly from North America and Western Europe. Trade in wood pulp and pulp products expanded further in all regions. The total volume of world trade in forest products fell by about 3 percent in 1956, but its total value was almost unchanged.

Trade in Agricultural Products of the U.S.S.R., Eastern Europe and China

The above data include the trade of the U.S.S.R., Eastern Europe and China with the rest of the world, but exclude trade within this group of countries. On the basis of rather incomplete information it is, however, possible to obtain an approximate picture of the total trade in some of the major agricultural products of the Communist group of countries. In view of the less ready accessibility of much of the data, the situation is summarized below in rather more detail than for the trade of the rest of the world.

In 1955/56 the total cereal exports of the U.S.S.R. were reduced by some 20 percent and 290,000 tons of wheat were imported from Canada. Wheat and rye exports were only 1.4 million tons, less than half of the quantity exported in 1954/55, though coarse grain exports increased. Eastern European countries imported about 3 million tons of wheat and rye in 1955/56, of which the U.S.S.R. furnished only 800,000 tons as against 2.3 million tons in 1954/55. Of the remainder, roughly half came from Western Europe and half from Canada, Australia and Argentina. The U.S.S.R. continued to be the principal exporter of coarse grains to Eastern Europe, supplying more than 900,000 tons out of a total of 1.3 million tons. In addition, the Eastern European countries had gross exports of rather over 1 million tons of cereals in 1955/56, of which two thirds were coarse grains; the net imports of cereals of Eastern Europe were thus rather over 3 million tons.

For 1956/57 it has been estimated that, because of the poor harvests of 1956, Eastern Europe will need to import about 5 million tons of bread grains and 1.7 million tons of coarse grains. The U.S.S.R. has replenished its grain stocks after a good harvest and will also continue to import from Canada, so that it will be able to furnish a much larger quantity than in 1955/56, probably as much as 4.5 to 5 million tons. Agreements have been concluded for the delivery of 1.4 million tons of grain to Poland, 650,000 tons to Hungary and 510,000 tons (as a loan) to Romania, while another 2 million tons will probably be exported to Eastern Germany, Czechoslovakia and Bulgaria. Of the remaining 2 million tons or so, Western Europe is likely to be able to supply only small quantities, but Canadian deliveries are continuing, and Poland is negotiating the import of wheat from the United States. The U.S.S.R. exported 500,000 tons of wheat to Western Europe in 1955-56 and for the current year has agreements to deliver 300,000 tons to Yugoslavia, 150,000 tons to Finland and 100,000 tons to Norway; 200,000 tons are also to be exported to Egypt. Rice imports by the U.S.S.R and Eastern Europe have continued to grow, coming mainly from Burma and Egypt. The quantities imported from China are not known.

The U.S.S.R. was again a net importer of sugar in 1956, but net imports appear to have been less than in 1955. Excluding imports from Poland and Czechoslovakia, the quantity of which is not known, the U.S.S.R.'s sugar imports were reduced from 652,000 tons in 1955 to 244,000 tons in 1956, while exports fell from 231,000 to 180,000 tons. Outside the Communist bloc, the U.S.S.R. purchased sugar only from Cuba (214,000 tons) in 1956; her exports went mainly to Finland, Iran and Afghanistan. In spite of the good harvests of the last two seasons, U.S.S.R. sugar imports will increase considerably in 1957. During the first three months of the year about 460,000 tons had already been purchased, contributing to the sharp rise in the world price. Poland and Czechoslovakia remained net exporters of sugar in 1956 but their exports (to countries other than the U.S.S.R.) were smaller than in 1955. Eastern Germany exported 89,000 tons of sugar to India in 1955, but none in 1956; its total exports are not known. Exports of sugar from the U.S.S.R. and Eastern Europe to China were reduced in 1956 and China increased its purchases elsewhere, mainly from France and Indonesia.

No data are available of the trade in meat within the Communist bloc. The meat imports of the U.S.S.R. and Eastern Europe from the rest of the world, however, appear to have fallen further in 1956 and to have amounted to only about one quarter of the high 1954 level. U.S.S.R. imports from Argentina, for example, declined from 20,000 tons in 1955 to 8,000 tons in 1956. Recent data are not available for exports from Eastern to Western Europe, but in 1955/56 they amounted to 77,000 tons (mainly from Poland and Hungary) together with 115,000 pigs and 54,000 cattle. Imports of dairy products from outside the Communist bloc also fell in 1956, the U.S.S.R. importing no butter and very little cheese. Exports of eggs from Poland, Bulgaria and Hungary are at an annual rate of about 40,000 tons. China also exports

eggs and egg products to the U.S.S.R. and Eastern Europe.

Only fragmentary information is available on trade in other agricultural products. With the growth of trade with the Far East, the Near East and Africa, however, U.S.S.R. imports of citrus, cocoa, tobacco, hides and skins and some fibers have increased. While there are few details of th exports of China to the U.S.S.R., it is noteworthy that China is reported to account for 20 percent of the total trade of the U.S.S.R., which is now the principal source of its imports. China receives capital goods from the U.S.S.R. and in return exports mainly agricultural products, including rice, fruit, tea, spices, meat, oilseeds, jute, silk, wool and hides and skins.

As for forest products, exports of sawnwood and of pulpwood and pitprops from both the U.S.S.R. and Eastern Europe to Western Europe fell quite sharply in 1956. Imports of forest products showed little change, except for an increase in Eastern European imports of sawnwood.

In 1957 there is likely to be a further increase in the trade of the U.S.S.R. with Eastern Europe, following a new series of trade agreements, including credit concessions, concluded in late 1956 and at the beginning of 1957. Eastern Germany already accounts for 15 percent of U.S.S.R. trade, receiving agricultural products from the U.S.S.R. and exporting mainly chemical products.

Price Trends in International Markets

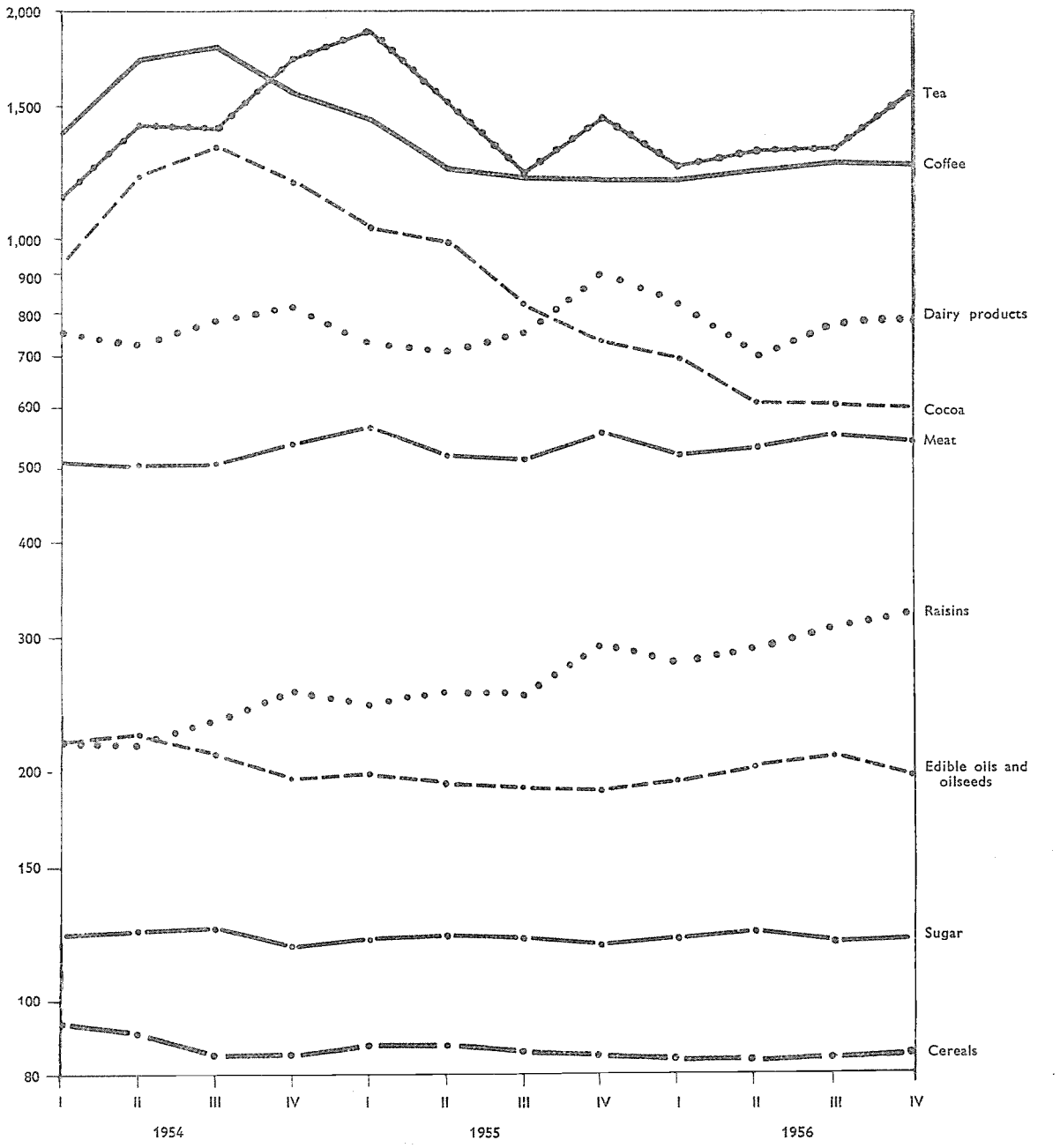
In spite of the slow downward drift of international prices of agricultural products as a whole during the past three years [Table II-8 and Figure II-3 (a) and (b)], these on the whole have been years of relative price stability. The most striking change has been the sharp fall in prices of coffee and cocoa from the high levels reached in 1954, but for both commodities the fall was arrested in 1956, while for tea (for which price movements have been less violent) there were indications of a price recovery. Rubber also has shown sharp price fluctuations in this period, and in the latter part of 1956 began to rise in average values after a steep decline during the earlier part of the year. Cotton prices declined, especially in the second half of 1956, with the release of United States stocks at competitive prices. Prices of beef and veal

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

YEAR	All Agricultural products	Food and feeding stuffs	Beverages and tobacco	Agricultural raw materials	Cereals	Edible oils and oilseeds	Meat	Dairy products	Forest products[1]	All products[2]
	Indices 1952-53 average = 100									
1947	82	100	70	66	105	95	82	96	83	92
1948	94	113	75	79	123	116	92	114	93	100
1949	89	101	70	84	102	105	95	112	81	94
1950	89	89	88	90	83	94	83	85	72	87
1951	116	102	99	155	95	121	98	92	114	105
1952	104	103	99	109	103	100	100	100	107	103
1953	96	97	101	91	97	100	100	100	93	97
1954	98	92	122	91	85	96	104	97	93	97
1955	95	90	107	95	82	88	109	98	94	97
1956	92	90	102	89	81	92	106	98	95	99
Quarterly indices										
1954 I	95	93	109	89	89	100	104	95	...	97
II	100	92	131	89	86	101	103	92	...	97
III	101	91	135	91	81	96	103	99	...	97
IV	100	90	127	95	82	90	110	104	...	96
1955 I	97	90	119	93	84	91	115	93	...	97
II	96	89	108	97	84	89	106	90	...	97
III	94	89	101	95	82	88	105	95	...	97
IV	94	90	102	95	82	87	114	114	...	98
1956 I	92	89	99	91	81	89	106	104	...	98
II	92	91	99	89	81	93	108	90	...	98
III	92	91	102	87	81	96	113	98	...	98
IV	94	91	104	90	82	90	110	99	...	99

[1]Not included in index of all agricultural products.
[2] U.N.Index adjusted to 1952-53 base. Includes nonagricultural, as well as agricultural products.

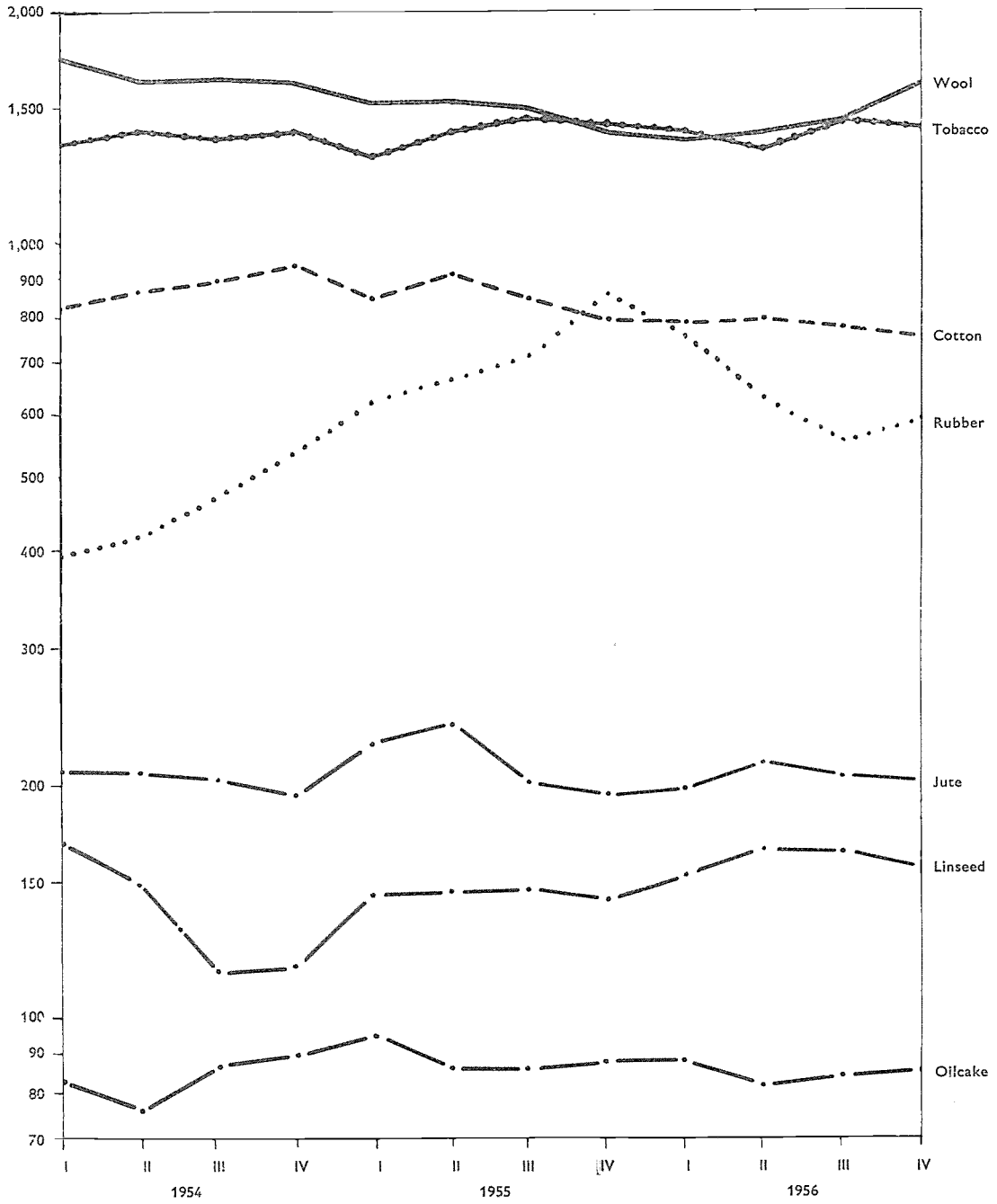
FIGURE II-3 (a). Average Prices (Import Unit Values in U.S. Dollars per Metric Ton) of Foods and Beverages in World Trade



also fell very sharply at the end of 1956. (See Annex Table 10 for details of individual commodities.)

It should be emphasized that the data in the table and chart represent average values for the total quantities moving in world trade, including those traded under various agreements, multilateral and bilateral. The figures are thus not sensitive to changes in market prices covering only a small part of the total volume of trade. For example, they reflect only to a limited extent the sharp rise which began in late 1956 in prices of sugar traded outside the various special arrangements for this commodity. Nevertheless, in contrast to single market quotations, they represent the average values actually received by exporters or paid by importers for the total supply.

FIGURE II-3 (*b*). Average Prices (Import Unit Values in U.S. Dollars per Metric Ton) of Agricultural Raw Materials and Tobacco in World Trade



Longer-term Trends in International Trade in Agricultural Products

Last year's report on *The State of Food and Agriculture* contained a long-term analysis of some of the factors influencing the development of international trade in agricultural products, which among other things brought out the important influence of technical developments and national policies of greater agricultural self-sufficiency [5].

[5] Long-term trends of world trade from 1913 onwards for some 40 main agricultural products are set out in *The State of Food and Agriculture 1956*, while the detailed statistics are available from FAO in mimeographed form on application.

It was found that, until the depression of the nineteen thirties, the real value of world trade in most agricultural products increased fairly steadily, though at varying rates, in line with the growth of the world economy. Since this depression, however, the growth of world trade has been very unevenly distributed among the different commodities. For example, the real value of world trade in coffee, cocoa, bananas and wood pulp and some other forest products has increased by some two- or three-fold since 1934-38, expanding at a rate comparable with, or sometimes higher than, the growth of world trade in manufactured goods. At the other extreme, however, the real value of world trade in such products as cereals, livestock products and cotton has shown no such increase, and often some decline, compared with the prewar years. Other products, including sugar and wool, fall into an intermediate position.

The bulk of agricultural trade still consists of imports into the main industrialized countries from less industrialized countries, or from countries, which though industrialized, have a large agricultural area in relation to their population. Starting from the depression of the nineteen thirties, however, and the breakdown of the world payments system, the importing industrialized countries have become increasingly self-sufficient in agricultural products. They have raised the productivity and output of their own agricultures partly to save foreign exchange, partly to raise the incomes of their own agricultural populations, and partly for defence reasons. Moreover, a certain automatic increase in output appears to come from the steady improvement in agricultural techniques. This trend has been reinforced by the development of industrial substitutes such as synthetic fibers (rayon, nylon) and synthetic rubber and by the increasing substitution of, for example, steel for wood, paper packing materials for jute, detergents for soap, etc.

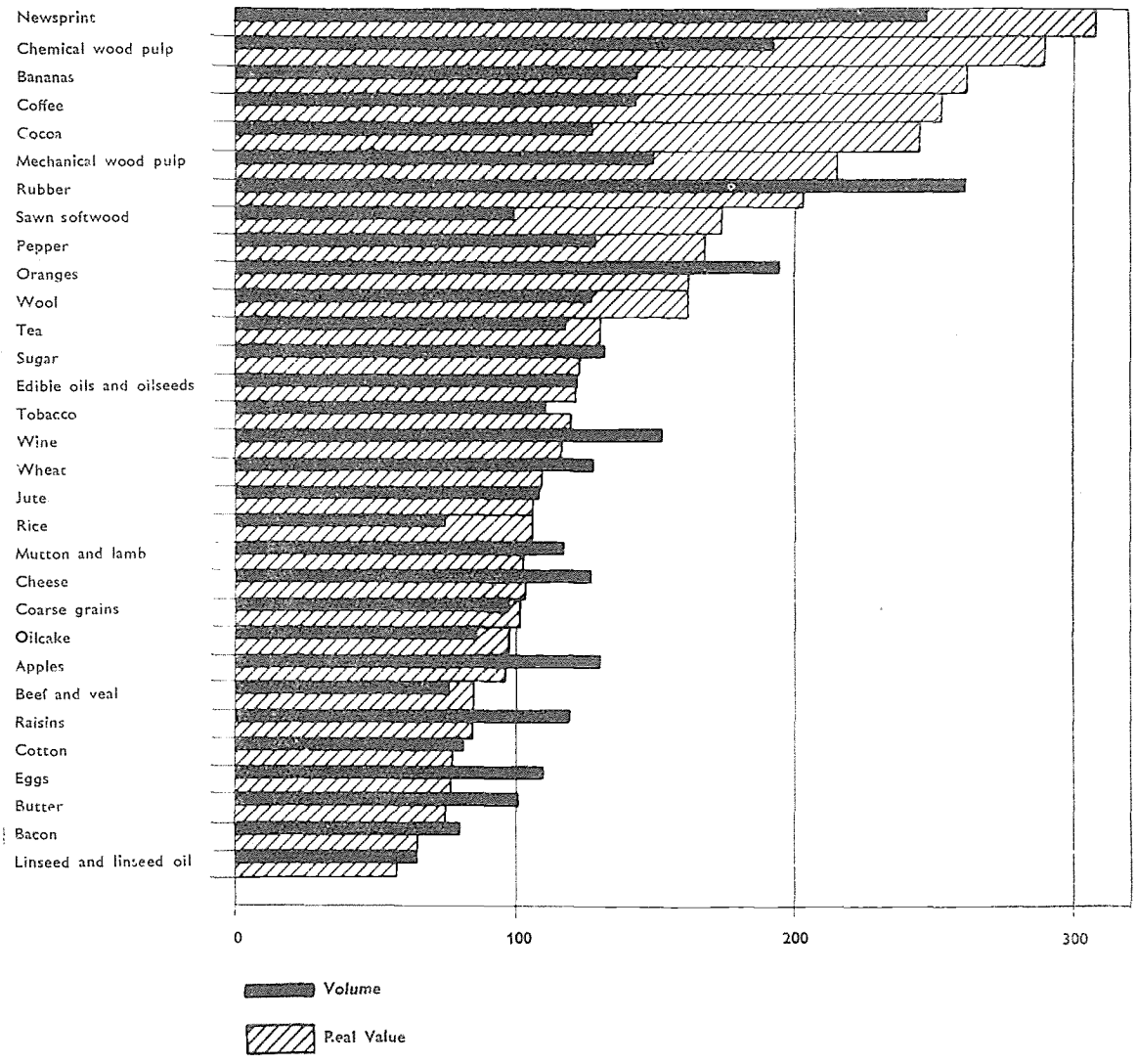
It is thus only for those products which the main industrialized countries cannot readily grow themselves (for climatic reasons or because of the lack of land), and cannot replace by synthetic or other substitutes, that international trade has continued to expand rapidly, proportionately to the growth of the world economy. Where the volume of exportable supplies of these commodities has not kept pace with demand, the strength of world demand has been evident in a sharp rise in prices, as in the case of coffee. On the other hand, world trade in products which are readily produced in the main industrialized countries, such as cereals and livestock products, has on the whole tended to decline, apart from the period of acute postwar shortage and certain years of bad harvest in some areas. Finally, trade in products for which substitutes have been developed has tended to grow relatively slowly or to remain static. There are as yet no indications of any major change in these long-term trends.

While the above appears to be the main underlying influence behind the recent development of world agricultural trade, there are of course many complicating factors. For example unduly high prices, such as those for some commodities during the Korean boom, appear to encourage the development of substitutes or economies in the use of raw materials. The economies in the use of cocoa in confectionary, in reaction against the very high prices of 1954 and 1955, may prove to be such a factor, reducing the general level of world demand for a considerable period. Supply shortages, such as the postwar shortage of meat, especially from Argentina, tend to stimulate domestic production in importing countries or production in other exporting areas. In some cases high support prices in exporting countries also appear to have had a similar effect. Changes in consumer demand are yet another important influence. Thus the widespread tendency with rising incomes to increase the consumption of sugar, fruit, etc., and to reduce the consumption of cereals and other starchy foods has had some repercussions on international trade.

The net result of these developments is apparent in Figure II-4 which shows the volume and real value of world trade in certain agricultural products at the present time (average of 1955 and 1956) in comparison with the average level during the interwar years 1920-38. The figures of the total value of trade (in real terms) are specially significant from the economic angle, reflecting on the one hand what exporters earn and, on the other, what importers have to pay for their required supplies.

One point may be noted which throws some light on the mechanism by which the pattern of trade gradually adjusts itself to changing international requirements. For most of the commodities in the upper third of Figure II-4, for which trade has expanded substantially since the war, the increase in the value of trade has

FIGURE II-4. The Volume and Real Value of International Trade in Certain Agricultural and Forest Products, 1955-56 Average as a Percentage of 1920-38 Average



been much greater than the increase in volume. This means that average prices are higher in real terms than on average between the wars, and there is an obvious incentive to producers in exporting countries to step up their output. On the other hand, for most commodities in the lower third of the chart, for which trade has contracted, the decline in real value has been greater than the decline in volume. Prices in real terms are thus lower than before the war, so that producers are likely to limit their output and, if they can, switch to more profitable commodities.

It is not, of course, suggested that prices of a commodity for which trade is expanding are immune to a sharp fall if supplies temporarily exceeded effective demand, or if there were a sudden contraction of demand due, for example, to a general depression or to special factors influencing only that commodity. It does appear, however, that trade prospects for such commodities are generally favorable. An oversupply leading to a fall in price would be likely to be only a temporary setback, and recovery could be expected as import demand again caught up with exportable supplies. For commodities where trade is not expanding, such a recovery would seem less likely and prices might not recover until there was a reduction in the volume of exports.

TABLE II-9. ESTIMATED STOCKS OF MAJOR COMMODITIES, 1952-57

COMMODITY	Month	Stocks						Pro-duction	Gross Exports
		1952	1953	1954	1955	1956	1957 (forecast)	1952-55 Average	1952-55 Average
		Million metric tons							
WHEAT[1]									
United States	1 July	7.0	16.5	25.4	28.2	28.1	24.5	29.9	7.9
Canada	1 Aug.	5.9	10.4	16.4	13.6	14.7	17.5	14.3	8.3
Argentina	1 Dec.	0.1	2.0	1.6	2.2	1.1	...	6.7	2.7
Australia	1 Dec.	0.5	1.0	2.5	2 5	2.3	...	5.2	2.5
Total 4 major exporters		13 5	29.9	45 9	46 5	46.2	45.0	56.1	21.4
France	1 Aug.	1.2	0.8	1.0	1.4	0.9	0.7	9.6	1.3
Italy	1 Aug.	...	...	2.1	1.4	2.7	2.9	8.4	[2]0.7
RICE (milled equivalent)									
Asian exporters[3]	31 Dec.	0.7	1.4	1.3	0.5	0.5	...	20.5	3.2
United States	31 July	0.1	—	0.4	1.4	1.0	0.5	1.7	0.6
Mediterranean	30 Sept.	—	—	0.2	0.3	0.2	...	1.5	0.3
Total		0.8	1 4	1.9	2 2	1.7	...	23.7	4.1
COARSE GRAINS[4]									
United States	1 July[5]	18.2	24.5	29.2	35.8	39.6	44.9	107.8	3.9
Canada	1 Aug.	3 6	5.1	5.6	3.8	4.5	7.2	12.6	3.0
Total 2 major exporters		21.8	29.6	34.8	39.6	44.1	52 1	120 4	6.9
BUTTER									
United States	Dec.	0.01	0.03	0.01	0.02	0.02	...	0.70	[6]—
CHEESE									
United States	Dec.	0.10	0.11	0.09	0.09	0.28	...	0.60	—
DRIED SKIM MILK									
United States	Dec.	0.02	0.06	0.04	0.02	0.01	...	0.56	[6]0.06
LINSEED OIL[7]									
United States	1 July	0.41	0.37	0.28	0.16	0.10	0.20	0.32	0.11
Argentina	1 Dec.	0.30	0.23	0.08	0.03	—	...	0.14	0.14
Total 2 countries		0.71	0.60	0.36	0.19	0.10	...	0.46	0.25
LIQUID EDIBLE VEGETABLE OILS									
United States.[8]	1 Oct.	0.24	0.58	0.56	0.33	0.28	0.43	2.41	0.39
SUGAR (raw value)									
Cuba	31 Dec.	2.16	1.51	1.95	1.62	0.64	...	4.83	4.82
World Total	31 Aug.	10.7	10.2	12.0	11.5	10.5	...	[9]37.4	[10]12.6
TOBACCO (farm weight)									
United States	1 Oct.[11]	1.56	1.66	1.69	1.83	1.89	1.95	0.99	0.22
COTTON (lint)									
United States		0.60	1.22	2.11	2.41	3.14	2.47	3.25	0.78
Other producers		1.58	1.52	1.29	1.40	0.63	0.65	3.26	1.68
Importers		0.72	0.70	0.68	0.59	0 98	1 45	0.07	—
World Total[12]	31 July	2 90	3.44	4.08	4.40	4.75	4 57	6.58	2.45
NATURAL RUBBER									
World Total[13]	31 Dec.	0.84	0.84	0.86	0.90	0.87	...	1.84	[14]1.77
		Million cubic meters							
SAWN SOFTWOOD									
European Importers[15]	31 Dec.	5.74	6.19	6.56	7.46	6.09	...	8.09	[2]11.72
European Exporters[16]	31 Dec.	4.31	3.63	4.05	4 50	4.06	...	13.74	7.82
North America	31 Dec.	14.25	16.05	14.60	14.84	16.92	...	89.04	10.60
SAWN HARDWOOD									
European Importers[17]	31 Dec.	1.29	1.15	1.17	1.24	1.20	...	2.84	[2]0.90
European Exporters[18]	31 Dec.	0.31	0.28	0.27	0.32	0.47	...	0.64	0.30
North America	31 Dec.	1.90	7.90	9.54	7.86	8.90	...	19.87	0.54

NOTE: Quantities shown include normal carry-over stocks.

[1]Exports relate to July-June and include wheat flour in terms of wheat. — [2]Gross imports. — [3]Excluding Mainland China. — [4]Rye, barley, oats, maize. Exports relate to July-June. — [5]Maize: 1 October. — [6]Commercial exports only. — [7]Including seed in oil equivalent. — [8]Carry-over of oils and soybeans: 1 October and cottonseed: 1 August. — [9]Centrifugal sugar. — [10]*Tel quel*. Excluding trade between the United States and its territories and trade within the Communist bloc. — [11]Flue-cured types: 1 July. — [12]Excluding U.S.S.R., Eastern Europe and China and including in stocks estimates of cotton afloat. — [13]Stocks include estimates of rubber afloat but exclude strategic stock piles, which are probably in the region of 1 ½ million tons. — [14]Exports of home-produced rubber only. — [15]Belgium-Luxembourg, Denmark, Western Germany, Netherlands, Switzerland and United Kingdom. — [16]Austria, Norway, Sweden and Yugoslavia. — [17]Belgium-Luxembourg, Western Germany, United Kingdom. — [18]Austria and Yugoslavia.—

CHANGES IN STOCK LEVELS IN 1956-57

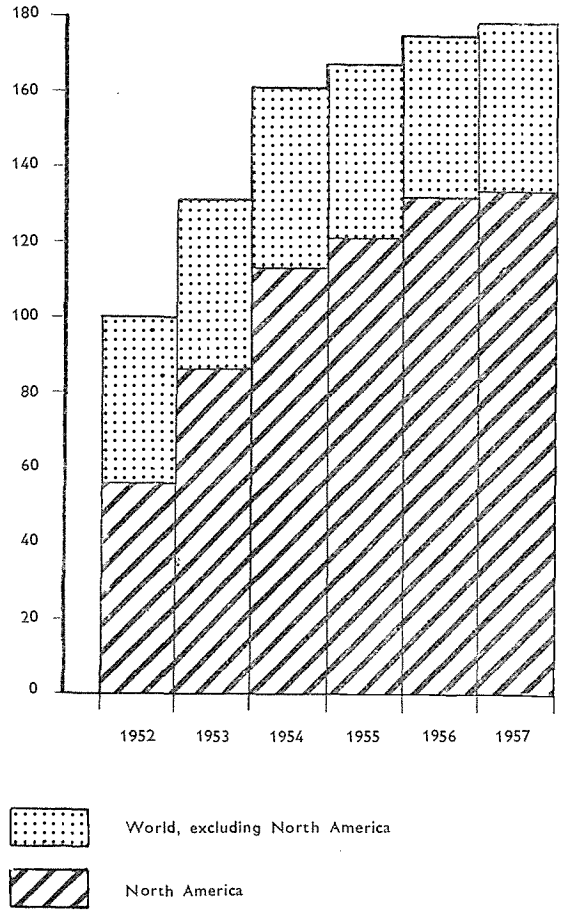
The wheat stocks of the main exporting countries at the end of 1956/57 were expected to show only a slight decline below the level of the three preceding seasons. In spite of increased production, the great expansion of exports will have reduced United States stocks of wheat; stocks will also fall in Australia as a result of the poor harvest but increases are expected in Argentina and Canada. With a further decline in the United States, rice stocks are no longer excessive. As in the past few seasons the main growth has again been in coarse grains, of which North American stocks have continued to rise steadily and at the end of 1956/57 are expected to show the largest increase since 1953/54. It is likely that about 8 million tons of the 9-10 million tons increase in world coarse grain production will have been added to stocks, which will thus be considerably larger than wheat stocks for the first time since 1952 (Table II-9).

Of the other commodities of which stocks were large, stocks of sugar, especially of the major exporters, were drawn on heavily during 1956. United States exports of cotton have expanded sharply and stocks have been reduced; there should be the first decline in world stocks since 1951, though they are still very large. On the other hand there may be a further small rise in stocks of tobacco in the United States, where it is also likely that stocks of vegetable oils increased quite substantially, reversing the previous steady decline. For forest products, European importers' stocks of sawn softwood were reduced from the unusually high level reached at the end of 1955; the exporting countries of Europe also reduced their stocks, cutting output in response to the lower import demand. North American stocks of sawn wood and, especially, newsprint, rose rather sharply during 1956.

Figure II-5 shows very approximately the movement in the volume of stocks of agricultural products as a whole during the past six seasons in terms of price-weighted indices. The picture is incomplete as the indices cover only the stocks listed in Table II-9, but the chart clearly shows the slower rate at which stocks have accumulated since 1954. The proportion of these stocks located in North America now amounts to about three quarters of the total. For comparison it may be added that the stocks included in the table represent more than 10 percent of the annual value of world agricultural production (excluding the Communist group of countries) and about three quarters of the value of world trade in all agricultural products.

FIGURE II-5. The Growth of Certain Key Stocks of Agricultural Products[1] in the World and North America 1952-57

(Indices: World stocks 1952=100)



[1]Indices based on stocks shown in Table II-9 only, and excluding forest products.

The situation in the United States, where by far the greatest stocks are held, can be followed more closely from changes in the level of the investment in surplus stocks of the Commodity Credit Corporation (CCC). During 1956/1957 the total value of this investment finally declined slightly after an uninterrupted rise for several years. Wheat and coarse grains now each represent about 30 percent of the value of CCC investment and cotton about 20 percent (Table II-10).

TABLE II-10. UNITED STATES COMMODITY CREDIT CORPORATION: QUANTITY AND VALUE OF INVESTMENTS [1]

COMMODITY	Quantity (30 April)					Value (30 April)				
	1953	1954	1955	1956	1957	1953	1954	1955	1956	1957
	Thousand metric tons					*Million dollars*				
Wheat	12 890	24 208	28 156	29 073	24 453	1 095	2 155	2 633	2 791	2 411
Rice	2	58	763	1 322	804	—	6	98	232	107
Barley	95	622	2 044	1 987	1 774	5	34	107	92	87
Oats	250	589	1 052	1 222	650	14	32	58	60	32
Maize	13 373	20 568	22 255	29 192	34 801	835	1 296	1 437	1 926	2 289
Grain sorghum	29	1 029	2 927	2 887	2 040	1	60	167	128	105
Butter	58	165	149	34	16	86	245	212	44	21
Cheese	35	164	176	130	87	31	146	156	111	73
Dried milk	84	298	101	81	65	32	109	38	30	24
Linseed	96	382	20	4	35	14	56	25	5	42
Linseed oil	86	31	37	26	—	55	13	14	9	—
Cottonseed oil	288	469	170	5	—	116	185	64	2	—
Cotton linters	178	279	318	141	20	36	58	67	31	5
Cotton, upland	482	1 674	1 817	2 839	2 056	339	1 268	1 439	2 268	1 580
Wool	49	55	70	54	24	70	81	103	82	35
Tobacco	231	281	366	402	451	225	270	406	535	609
Other commodities						182	175	237	287	396
TOTAL						3 136	6 189	7 261	8 633	7 816
						Percent				
Change from previous year						+ 95	+ 97	+ 17	+ 19	— 9

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

SOURCE: *Report of Financial Conditions and Operations*, U.S.D.A., Commodity Credit Corporation, April 1954, 1955, 1956 and 1957.

Measures of Surplus Disposal

While the Soil Bank program has had some effect in reducing United States production of cotton and wheat in 1956/57, the decline which began in United States stocks of certain commodities was mainly the result of a sharp expansion of exports. This chiefly reflected the intensification of surplus disposal operations, especially from the second half of 1956.

In the first ten months of the 1956/57 trade season the value of United States agricultural exports was about 45 percent greater than in 1955/56 thus exceeding the record level of 1951/52. Government programs accounted for about 42 percent of the total value in the first half of 1956/57.

Under Title I of Public Law 480, 44 new or supplementary agreements for sales in local currencies were negotiated in 1956, involving 25 countries and the sale of agricultural commodities worth $1.3 thousand million at export market value and $1.9 thousand million at CCC cost. Actual shipments under Title I rose from 2.4 million tons with an export market value of $265 million in 1955 to 4.5 million tons and $550 million in 1956, while a further 6.7 million tons remained to be shipped under existing agreements. Funds for Title I shipments of agricultural products were almost exhausted by the spring of 1957 and an additional $1 thousand million was voted. Exports under Title II (for emergency and famine relief) were $98 million in 1956 and the authorized total was increased. Title III, providing for donations to private agencies for domestic and overseas relief and also barter agreements, accounted for a further $550 million of agricultural exports; the barter provision was extended to countries in the Communist bloc. In addition, cotton stocks were sold at prices some 20 percent below those at which they were acquired and exports are expected to have trebled in 1956/57. About $400 million of agricultural exports were procured under the Mutual Security Act during 1956 and the Export-Import Bank made loans totalling about $75 million to assist exports of agricultural products.

These special programs have resulted in a substantial increase in the United States' share of world trade for several commodities. Concessional terms have enabled some countries to

make imports which they could not otherwise afford because of shortage of foreign exchange, and to this extent surplus disposal deals may have led to a net increase in consumption. On the other hand, the stepping up of surplus disposal measures has caused concern among other exporting countries who are anxious to participate in any openings for increased import demand on commercial terms in their traditional markets. Intergovernmental consultations and the exchange of information on such transactions have increased during the year.

ECONOMIC ACTIVITY AND THE DEMAND FOR AGRICULTURAL PRODUCTS

The crop year 1956/57 saw a slowing down in the rate of economic expansion, especially in the industrial sector, and in some countries a slight downward trend from the high levels reached in 1955/56. Inflationary pressures continued both in the fully employed industrialized countries and in many less developed countries, and disinflationary measures, together with restrictions to improve the balance of payments, in many instances prevented any substantial growth in effective demand. Countries exporting raw materials and food were affected more than exporters of industrial products, both as regards the volume and value of trade. Their export revenues expanded only slightly, or even declined, causing balance of payments problems and making it difficult to maintain the tempo of their development programs. In both Europe and the Far East import demand for agricultural products rose sharply, to some extent because of bad harvests in certain countries, but also because of the growing demand in countries where economic expansion, including the implementation of development projects, continued rapidly.

In the *United States* the level of industrial production has remained virtually unchanged since October 1956 ; other economic indicators have continued to rise, but at a slower pace than before. Thus in the first quarter of 1957 the gross national product was, in real terms, 3 percent higher than a year earlier, as against a rise of 7 percent during 1955. Over half the total rise reflected larger consumption expenditures, mainly for nondurable goods and for services, and it is noteworthy that in early 1957 employment in directly producing occupations was for the first time smaller than employment in other occupations, including services. Somewhat higher incomes in nearly all sectors sustained the high level of domestic demand for farm products, though the rise in food expenditures was only slightly more than was accounted for by higher prices. As discussed elsewhere in this chapter, export demand for farm products rose very sharply. Developments were somewhat similar in *Canada*, where in 1956 the gross national product in real terms rose by 7 percent, compared with 9 percent in 1955 ; the main contributor to the increase in 1956 was a marked rise in capital investment. Total Canadian exports increased in value by 12 percent, the biggest increases being in crude oil, iron ore, newsprint and, especially, wheat. Domestic demand for agricultural products remained on a high level. The strong demand for both capital and consumer goods led to a rise of 21 percent in imports, but the widening trade deficit was offset by the steady inflow of investment capital, mainly from the United States. North American demand for sawnwood was affected by reduced residential construction in the United States and a lower rate of increase in Canada, but the demand for wood pulp and most categories of pulp product continued firm.

In *Western Europe* too the rate of growth slowed down and there was also an acceleration of wage increases. Prices continued their slow rise and this, together with budgetary difficulties in some countries, caused many governments to initiate or to strengthen disinflationary policies aimed at reducing both consumer demand and investment. The slower expansion of economic activity eased the supply situation for labor and certain raw materials. Increased demand resulting from rising incomes was partly offset by higher prices for consumer goods, including foodstuffs and beverages. These price increases were due not to import costs, which in fact declined, but rather to the higher cost of domestic production and to some of the disinflationary measures, such as the abolition of food subsidies, increased sales taxes, or the ending of price controls. In spite of these tendencies, however, the real income of labor rose, though less than in recent years, the domestic demand for agricultural products remained high and retail sales of foodstuffs increased in all countries except Denmark and Sweden. The balance of payments of some countries, (e.g.

Denmark, France and the United Kingdom) worsened, but there has been a continuing improvement in others, particularly Western Germany. Imports of agricultural products continued to increase, though this was in part due to the poor harvest in certain countries. In this region, also, the demand for sawnwood declined slightly, but there was a further increase in the demand for wood pulp and paper.

Compared with 1955/56, the general economic situation of *Oceania* has shown great improvement. Due partly to import restrictions, but still more to the strong export demand for wool, the trade surplus of Australia was close to £A 200 million in the first nine months of 1956/57, as against a deficit of over £A 80 million in the same period of 1955/56. Import restrictions and the tight money policy have already been eased and domestic demand for agricultural products seems likely to become still firmer. Developments in New Zealand are similar, though less spectacular ; the strong demand for wool benefited exports, but difficulties were experienced in foreign markets for dairy products and meat.

In *Latin America* a slower rate of development in 1956 brought a temporary halt in the growth of per caput gross national income. The volume of exports reached a record level and net returns from sales abroad increased, in spite of a slight deterioration in the terms of trade. Gross investment increased. On the other hand, anti-inflationary policies restricted domestic demand and the supply of imported goods was limited by controls. Heavy foreign indebtedness forced some countries to set aside earnings from abroad for repayments, while others had to restore their depleted monetary reserves or restrict imports in order to avoid a deficit. Increasing foreign investment, however, mitigated some of the difficulties, while in some countries multilateral payment arrangements are being adopted to ease the strain of balance-of-payment difficulties resulting from the domestic inflationary pressures.

More vigorous steps were taken in many countries of Latin America to stem the tide of rising prices and expanding credit, including the simplification of exchange rates where multiple rates had so far been used, as in Bolivia, Chile and Paraguay. The effect on the domestic demand for agricultural products of these anti-inflationary policies, which were not uniformly successful, has varied. In some countries, e.g., Bolivia, measures such as the abolition of indirect subsidies led to increased prices and the limitation of wage increases to lower purchasing power, and thus reduced domestic demand. In the noninflationary countries the internal demand has continued to expand.

While in some countries of the *Far East*, including India, Japan, Mainland China, the Philippines and Taiwan, notable progress in economic development was achieved; in most other countries of the region such progress was slowed down during the year. Production gains are reported from a large part of the region in both agriculture and industry. Development expenditures recorded a considerable over-all increase and foreign trade expanded both in value and volume. In spite of shipping difficulties due to the Suez crisis, however, imports rose faster than exports, mainly on account of the heavy demand for capital goods, but partly also because of larger imports of food. Lower export prices for rubber and tea and higher landed prices for imported capital goods caused a deterioration in the terms of trade and in many countries there was an appreciable strain on the balance of payments, requiring recourse to foreign exchange reserves, or to foreign assistance in the form of loans and aid, and causing delays in the implementation of development projects.

Nevertheless, expenditure on capital development rose in most countries of the Far East increasing effective demand for food and clothing to an extent that could not be met from domestic output, so that prices were forced up. Such inflationary pressures were intensified by import restrictions to conserve foreign exchange (Burma, India, Indonesia) and increased customs duties and taxes (India). As the low standard of living and the drive for economic expansion precludes the full application of the traditional anti-inflationary methods of credit restrictions and restraint of consumption, more countries in the region are trying to solve the problem by readjusting their development plans to expand the output of consumer goods, particularly of agricultural products, in order to satisfy better existing demand. A notable exception to the general inflationary trend is Japan, however, where a bumper rice crop and an ample supply of other consumer goods caused retail prices to remain stable. The region's demand for forest products expanded further, especially in Japan.

At the beginning of the year, economic conditions were rather favorable in the *Near East*

countries, though the political atmosphere both before and after the Suez crisis adversely affected the situation in some countries of the region. The oil producing and transporting countries were affected in the last two months of 1956 by the reduced export of oil, their major source of income. Import prices rose for most capital goods and for some consumer goods, such as sugar, tea and coffee. The terms of trade began to deteriorate and foreign demand for the region's agricultural products was reduced, especially in France and the United Kingdom, markets which could only partly be replaced by the U.S.S.R. and some Far Eastern countries. While Turkey and Iran were less affected by the Suez crisis, both countries are still confronted with an inflationary situation, disequilibrium in their balances of trade and payments, and budgetary deficits.

In *Africa* the already difficult economic situation of the North African countries has been further worsened by severe droughts in many areas in late 1956 and early 1957. The 1957/58 agricultural output, especially of grains, will be very low, and in Morocco, where the drought was worst, all exports of grain have been suspended. In some countries of tropical Africa the terms of trade have deteriorated and there has been some slackening in the pace of economic development. Thus, in the Federation of Rhodesia and Nyasaland, the sharp fall in copper prices has reduced the favorable trade balance while the effect of lower cocoa prices has been felt particularly in Ghana. Reduced revenue may make it difficult to meet the recurrent changes on the many development works undertaken during the boom period. The Union of South Africa, in contrast, registered a marked improvement in its balance of payments on current account, which was positive for the first time in history. Exports of uranium and of some agricultural products were at record levels and gold production increased, though the net capital inflow failed to recover from the sharply reduced level of 1955. Domestic demand for agricultural products continued strong. Following two successive record crops, no imports of wheat are expected to be required for the first time for many years.

The Short-term Outlook

There are at present no signs that the rate of expansion of economic activity in the industrialized countries of North America and Western Europe is likely to regain the rapid pace of the earlier postwar years. On the other hand, it does not appear that there will be any major decline from the present high level. The period of consolidation seems likely to continue.

In the United States the slowing down in capital investment, including housing, is counterbalanced by increasing consumers' spending on nondurable goods and services and by rising public expenditure. Moreover, a relaxation of the present tight money policy could, if necessary, appreciably stimulate demand. Although the present lull, if left to itself, could develop into a downward trend, economic policies of the Government are likely to prevent any serious recession. The outlook is less favorable for agriculture. With slightly smaller output and lower prices, although domestic demand remains high, farmers' net incomes may be maintained only through Soil Bank and other government payments. The intensive programs to expand agricultural exports will be maintained, but both commercial demand and also the capacity of deficit countries to absorb surplus agricultural commodities may not be as great as in 1956/57. In Canada, too, a reversal of the present monetary and fiscal policies could be used, if necessary, to stimulate the economy. Consumers' incomes are expected to increase in 1957, though somewhat less than in 1956, and agricultural incomes to remain at the improved level of last year. Domestic demand for agricultural products will hardly be affected by the slower rate of economic expansion, though it may not be possible to maintain the higher volume of agricultural exports.

Short-term forecasts of economic development in Western Europe suggest no great changes in 1957/58, though some countries face increased balance-of-payments difficulties. Investment intentions of business are equal to, or slightly below, those of 1956 ; governments are retrenching against inflationary pressure and consumer spending is dampened by rising prices and, in some countries, by higher taxes and credit restrictions. These influences primarily affect durable goods and there appears to be no reason why the demand for agricultural products should not continue its slow increase. There may thus be a somewhat greater import demand for agricultural products not grown in Western Europe, though with domestic production at a high level, imports of wheat and some livestock products may be reduced. The Common Market, dis-

cussed in more detail in a later section of this chapter, is expected to come into operation in 1958 or 1959, but it is not likely to have any immediate effects on the demand for agricultural products. In the longer run, reductions in customs duties, to the extent that they apply to agricultural products, may lead to some shifts in supply sources. The example set by the European Common Market is already showing signs of being followed in some other regions, and such agreements may constitute an important new influence in the future.

A higher rate of economic expansion may be expected in Oceania in 1957/58 following the marked improvement in 1956/57 in the balance-of-payments situation. The increase in export receipts and the easing of import restrictions are likely to speed up investment and to increase incomes and consumers' demand. International demand for wool is expected to remain high and for dairy products to show little change, but Australian wheat will continue to face strong competition in world markets.

The rest of the world, and in particular the underdeveloped regions, should benefit from the continuing high level of economic activity expected in the industrialized countries. On the whole, the export demand for food and agricultural raw materials should remain strong and slightly on the rise; the terms of trade should at least improve to some extent as freight and insurance charges return to normal, and existing balance-of-payments difficulties should prove somewhat easier to settle. With the continuing implementation of economic development programs, domestic demand will increase further and may indeed have to be curtailed to limit the inflationary pressure on prices. The availability of capital will continue to be a main determinant of the rate of economic expansion. While little change is expected in the contribution of foreign capital, domestic capital resources should grow with economic expansion, but institutional shortcomings may prevent their full utilization for productive investment and governments will still have to provide a large share.

PRICES AND THE FARMER

The movement of farm price relationships can be followed for relatively few countries, but such information as is available suggests that the prices received by farmers have generally shown small increases during 1956 and the early months of 1957, while the prices paid by farmers as a rule have continued to rise faster than prices received. Although indices of prices paid vary widely in their coverage in different countries, the relationship between movements in this index and in the index of prices received provides an approximate indication of the farmer's "terms of trade". With the improvement in prices received, the deterioration in this ratio has on the whole been slower than in the few preceding years (Table II-11).

Among the countries for which there are comprehensive data, farm prices in Canada moved upward early in 1956 and, although they declined again later in the year, they remained a little higher in the first quarter of 1957 than at the same time last year. The main increases were for fruit, vegetables, poultry and eggs. Prices paid rose rather more than prices received. In the United States the prices received by farmers averaged the same in 1956 as in 1955. They rose until July and receded afterwards but in April 1957 they were still some 3 percent higher than twelve months earlier. This development, following an almost continuous fall since 1951, occurred in spite of lower support levels under the flexible price support program. Further reductions in support prices for eight major crops were announced in February 1957. Prices paid by farmers in the United States also rose during 1956, and in April 1957 were about 4 percent higher than a year before. The parity ratio thus declined in 1956, though more slowly than in any year since 1951, while in the early months of 1957 it has remained almost stable.

In most countries of Western Europe the prices paid by farmers rose fairly sharply in 1956. There were particularly big increases in Finland, Norway and the United Kingdom. Increases in the wages of farm labor were widespread, though in some cases these were partly offset by a further decline in the amount of labor employed. The prices received by farmers also increased in most countries, especially for beef and milk. During the first half of the 1956/57 crop year (July-December 1956), prices received by farmers in Finland, Western Germany, the Netherlands and Sweden were 5 to 10 percent above the same period in the preceding year. There were smaller increases in most other countries, though in Denmark and Ireland prices fell during the year with the decline in export prices.

TABLE II-11. PRICES RECEIVED AND PAID BY FARMERS. QUARTERLY AND MONTHLY DATA. 1955-57

COUNTRY R = Prices Received P = Prices Paid Ra = Ratio R/P	1955				1956				1957		
	I	II	III	IV	I	II	III	IV	Jan.	Feb.	Mar.
	Indices: 1952-53 average = 100										
Australia											
R.	95	94	90	90	94	99	104	...	...	...	...
P.	102	103	104	104	105	107	110	...	...	...	...
Ra	93	92	87	87	90	93	95	...	...	...	...
Austria											
R.	110	108	108	109	106	108	112	112	112	...	...
P.	110	110	111	113	112	113	117	118	119	...	...
Ra	100	98	98	97	94	95	95	95	93	...	...
Belgium											
R.	...	...	92	92	94	94	90	93	93	...	...
P.	...	...	105	105	105	106	108	109	112	...	...
Ra	...	...	87	87	89	88	83	86	83	...	...
Canada											
R.	87	90	89	85	85	88	89	86	87	87	...
P.	97	99	100	...	98	102	104	...	102	...	...
Ra	90	90	90	...	87	86	86	...	85	...	...
Finland											
R.	103	109	109	115	124	125	123	126	129	...	...
P.	102	103	101	101	101	107	110	112	114	...	...
Ra	102	106	109	114	122	118	112	112	113	...	...
Western Germany											
R.	107	108	106	108	116	120	113	112	114	112	...
P.	103	100	100	100	104	106	106	104	107	107	...
Ra	104	107	105	108	111	114	107	108	107	104	...
Japan											
R.	111	109	107	107	107	107	107	106	106	107	...
P.	104	104	103	102	102	103	103	104	105	106	...
Ra	107	108	105	105	105	105	105	102	101	101	...
Netherlands											
R.	100	91	95	108	104	100	104	109	109	102	...
P.	108	107	106	106	108	111	111	112	117	117	...
Ra	93	85	91	102	96	91	94	97	93	88	...
Norway											
R.	109	107	116	119	117	116	116	118	117	115	114
P.	100	100	100	100	101	109	119	120	120	120	121
Ra	108	106	115	118	116	106	97	99	97	95	94
Switzerland											
R.	104	103	103	105	104	105	104	106	105	104	104
P.	102	103	103	103	104	106	107	108	109	109	108
Ra	102	101	101	101	99	99	98	99	96	95	96
United States											
R.	89	89	86	83	83	88	88	86	87	86	87
P.	100	100	99	99	99	101	101	102	103	104	104
Ra	89	89	87	84	84	88	86	84	84	83	84

In all countries for which data are available, however, the increase in prices received was less than that in prices paid by farmers. In Norway the increase in prices paid was very much higher, and there will have been a further rise following the increase in agricultural wages granted in March 1957.

For the rest of the world very little information is available. In Japan prices received have remained very stable for some time, while prices paid increased slightly in early 1957. The prices received by farmers were rather higher in Australia during 1956, mainly because of the improvement in wool prices. The prices paid by farmers have continued to rise, however, and because of rising costs the support level for wheat has again been raised.

Farm Incomes

With the continuation of the squeeze between the prices received and paid by farmers, which was reinforced in a few countries by lower output in 1956/57, there have again been declines in aggregate net farm income in a number of countries. In some cases, however, output rose sufficiently to outweigh the deterioration in the price ratio. Thus increases in farm income, sometimes reversing a steady downward trend, were rather more widespread in 1956 than in the past few years in the limited number of countries for which recent data are available.

Net farm income rose in both Canada and the United States in 1956. After an uninterrupted fall (mitigated only partly by the decline in the number of farmers) from the peak level of $14.3 thousand million in 1951, farmers' realized net income in the United States turned upward to reach a level of $11.8 thousand million. Of the $500 million increase in 1956, about $300 million was accounted for by larger government payments, which were more than doubled by the first payments under the Acreage Reserve and wool incentive programs, while, with greater output, the increase in cash receipts from farm marketings exceeded that in production expenses by some $200 million. Allowing for inventory changes, however, there was a slight reduction in farmers' total net income. The income from farming of the farm population as a whole was also slightly reduced, though its income from all sources showed a small increase, both in total and on a per caput basis, for the first time since 1951. The increase in incomes was larger in other industries, however, so that relatively the per caput income of the farm population lost further ground, and in 1956 amounted to only 44 percent of incomes in other occupations.

In 1957 cash receipts from marketings are likely to be less, because of lower support levels and further acreage reductions under the Soil Bank program, but, with payments under this program expected almost to treble, total cash receipts should again increase. The aggregate realized net income of farmers is expected to show about the same rise as in 1956.

The aggregate net income of farmers increased in Canada for the second year in succession, after having fallen by as much as 30 percent in 1954. Because of greatly increased output and slightly higher prices, total cash receipts from the sale of farm products and from participation payments rose by 13 percent in 1956, the first increase since 1952. Revenue from sales of wheat rose very sharply. Preliminary estimates indicate that net income increased by 15 percent, though it remained slightly less than the record level of 1953. Per caput income, however, showed an increase of 8 percent compared with 1953, because of the 10 percent decline in the agricultural population. In 1957 cash receipts will probably be maintained at the 1956 level and will depend not so much on the size of the crop as on exports and on the availability of elevator space for deliveries from farm stocks. Production expenses are also likely to be about the same, so that net income is not expected to change much, except in the inventory component.

In Australia, where the aggregate net income of farmers fell in the two previous seasons, there was a slight rise in 1955/56 and preliminary estimates indicate a more substantial increase in 1956/57. With the improvement in wool prices, the gross value of production is expected to have increased by about 8 percent, total costs by 2 percent and the aggregate net income of farmers by as much as 16 percent. Net farm income fell slightly in New Zealand in 1955/56, having, in contrast to Australia, risen continuously since 1951/52. The volume of production increased by 4 percent, but its value fell by 1 percent; in 1956/57, however, the previous rising trend in income may have been resumed.

A number of factors adversely affected farm income in some countries of Western Europe in 1956/57. Export prices for livestock prod-

ucts fell and, although in most countries there was some improvement in the prices received by farmers, prices paid (and especially wage rates)[6] have risen more rapidly. There was also a fall in production in some countries in 1956/57, as a result of the bad weather. In Denmark the value of sales is estimated to have fallen by about 10 percent in 1956/57, because of lower prices for export products. In Ireland also, lower export prices are likely to have prevented any appreciable increase in farm income in 1956/1957, in spite of the expansion in sales of fat cattle. The aggregate net income of farmers recovered in the United Kingdom in 1956 from the low level of the previous adverse season, with a rise of some 3 percent. In spite of a 2 percent increase in output, however, higher costs for labor, fuel and feedingstuffs may have slightly reduced net income in the 1956/57 crop year. Aggregate incomes declined in 1956 in Italy, and probably also in Spain, as a result of the effect on output of the severe weather early in the year. In Italy the gross value of output fell by 2 percent, production of grain and olives especially declining; total expenses were up by 11 percent and the net income of farmers was reduced by 5 to 6 percent.

In France, in spite of the effects of the frost, the gross value of output was greater in 1956 than in 1955. In the crop year 1955/56 total receipts had risen by 5 percent, mainly because of higher prices, but expenses rose by more than 10 percent so that the increase in net income was only about 4 percent; the volume of gross output is estimated to have fallen slightly in the 1956/57 crop year. In Western Germany there has probably been an increase in net farm income in 1956/57, though smaller than in 1955/56; receipts from sales show an increase of 4 to 5 percent, but there has been greater use of imported feedingstuffs. It is probable that farm incomes in the Netherlands were somewhat higher in 1956, but at the end of the year and in the early months of 1957 the situation changed adversely for farmers, so that the crop year 1956/57 is likely to show a decline. In Norway it is estimated that the value of the net product of agriculture increased by as much as 15 percent in 1956/57. Expenses increased, but less than receipts (those for milk were substantially higher); increased wage rates were offset by a decline in the amount of labor employed, and expenditure on feed is estimated to have fallen slightly.

Outside the more developed regions there is very little up-to-date information on farm income. In India the total net product of agriculture fell sharply in 1954/55 from the high level of the preceding year, almost entirely because of lower prices; there was a further slight decline in 1955/56, but figures for 1956/57 are not yet available. In Japan, with bumper harvests, the net product of agriculture rose by as much as one quarter to reach a record level in 1955/56 (April-March); in 1956/57, however, this sharply increased level does not appear to have been maintained. Farm income also rose in the Union of South Africa and Southern Rhodesia in 1955/1956. The net income of agriculture, forestry and fishing in the Union of South Africa increased slightly in 1955/56, though it was still below the peak of 1953/53. The gross value of production, which had fallen in the previous season, increased again in 1955/56. The aggregate realized net income of European farm operators in Southern Rhodesia, which has fluctuated considerably in recent years, rose by more than 20 percent in 1955/56 (October-September). Operating expenditure rose by about 8 percent, wages and expenditure on fertilizers especially increasing, but the gross value of output increased by as much as 12 percent to reach an all-time high. In Kenya, on the other hand, a sharp rise in operating expenses caused the aggregate net income of European farmers to fall slightly in 1956.

The Level of Price Supports in Different Countries

In view of current surpluses of a number of agricultural products, the downward trend of farm incomes would almost certainly have been steeper and more widespread, but for the use of price supports in many countries. These have contributed greatly to the stabilization of farm prices and incomes, normally liable to very wide fluctuations, and have given greater economic security to farmers. One secondary effect, however, which has become more apparent in recent years, is the extensive government intervention in international trade to which some methods of price support give rise. This applies particularly when, for example, as a means of raising farm incomes, the

[6] Changes in wage rates do not of course influence estimates of the total income of the agricultural sector of the kind quoted above for North America and available for some countries in Oceania and Western Europe.

level of support prices is fixed appreciably above the usual run of average values on world markets. In exporting countries this has often necessitated direct export subsidies or indirect subsidies as under some "two price" systems. In importing countries the volume of imports has had to be regulated by quotas, variable import levies or some similar device if (as under most systems of price support) domestic markets are stabilized at support price levels. It is therefore of interest to compare the relative level of price supports in different countries for some of the more widely supported products.

Figure II-6 shows the level of support prices for wheat, rice and sugar beet in some of the countries for which reasonably comparable data are available. For the two cereals, the domestic support prices are shown in relation to world average unit values in international trade. All prices have been converted into United States dollars at official exchange rates, since much of the interest of the comparison is the repercussion on international trade, although for some countries the picture may therefore be somewhat distorted by exchange rates which do not correspond closely with the purchasing power of the currency.

For this reason, and also because of differences in quality, only rather broad comparisons between countries can be properly made. The differences in support prices are so great, however, as to outweigh altogether quality differentials and the effects of currency exchanges. Thus, in terms of United States dollars, the highest support level shown for rice is about four times the lowest, for wheat almost three times and for sugar beet nearly double.

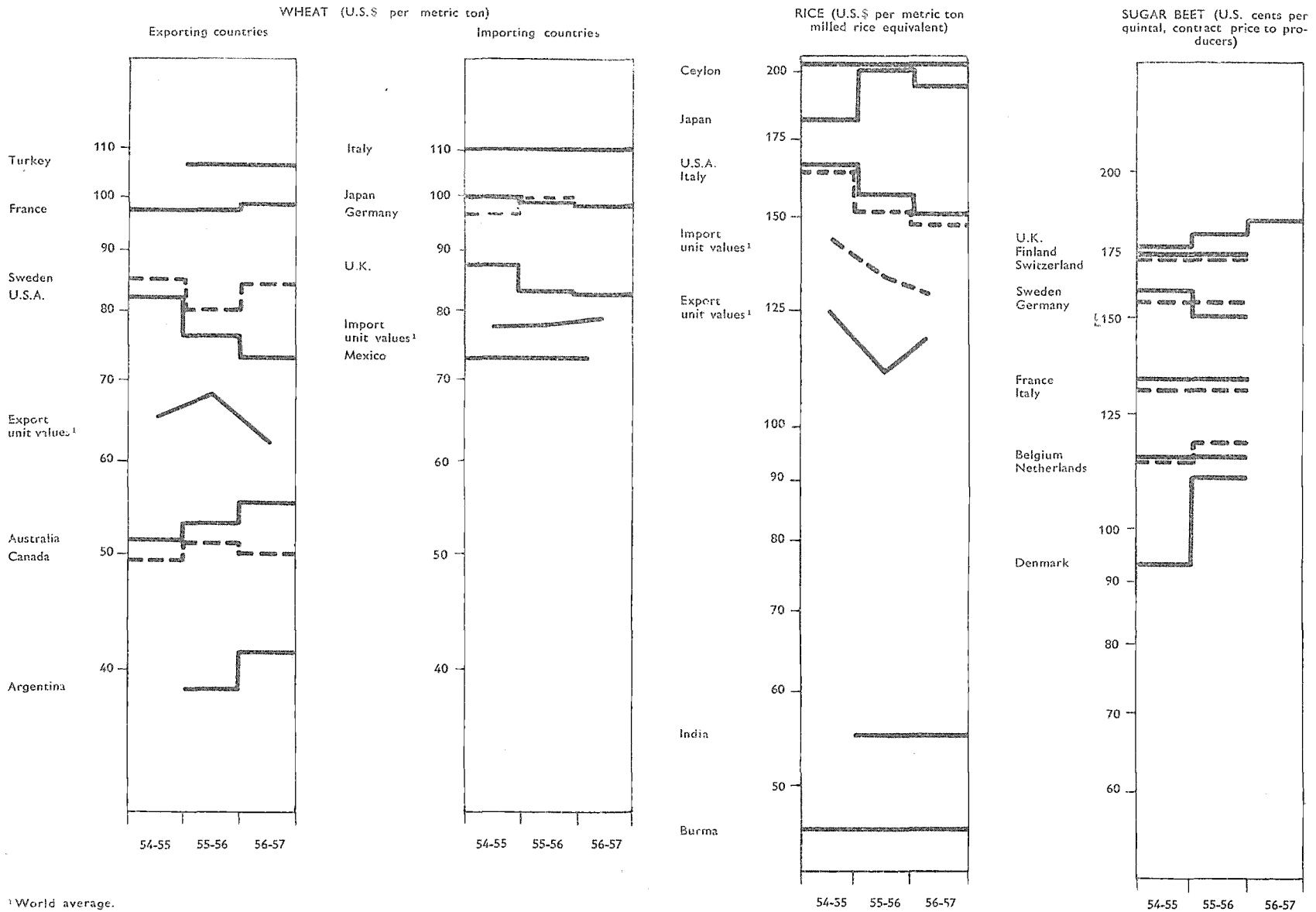
For wheat, two exporting countries guaranteed farmers prices ranging in 1955/56 from 40 to 60 percent above world average export unit values, while for two others the excess was of the order of 10 to 20 percent. The extent to which they exceeded export unit values would be increased if transport and marketing costs were taken into account. On the other hand, support prices in other wheat-exporting countries in the same year ranged from 20 to 40 percent below average world export values. For rice, the support price levels in one major exporting country were less than half world average export unit values, but in two other exporting countries they were slightly above them. For sugar no such comparisons are made, because of differences in the sugar content of the beet and inadequate information on the manufacturing costs of sugar.

On the import side, the main wheat-importing countries guaranteed their own farmers' prices at levels ranging from 5 to 40 percent above world average import unit values in 1955/56. Again, transport and marketing costs would tend to increase the extent to which these prices exceeded import values. Similarly Ceylon and Japan guaranteed the domestic farm price of rice at levels some 50 percent above world average import unit values. In India, in contrast, the guaranteed minimum price for rice was less than half the average unit value of imports.

These wide differences in support levels seem fairly readily explicable in relation to the declared agricultural policies of the countries concerned, e.g., to expand exportable supplies, to reduce imports, to raise farm incomes, to raise production efficiency without price incentives, etc. It should be added that the support prices in Figure II-6 do not necessarily reflect the prices which farmers actually received. Where supports are set at a low "insurance" level, as for example in India, actual receipts may often be considerably higher. Again, some support prices (e.g., for wheat in the United States, Canada and Argentina) cover total marketings, while in other cases (e.g., wheat in France, Sweden and Australia) only part of the output is eligible for guarantee. Further, price supports in some countries are supplemented by measures to reduce the cost to farmers of credit, fertilizers, fuel and other production expenses, while in other countries there are no such types of additional financial assistance.

The year-to-year movements in the support levels shown in Figure II-6 are also of interest. In a number of countries they have not changed or have shown an upward trend, which is perhaps remarkable in view of the surplus of wheat and, earlier, of rice and sugar. This emphasizes the difficulty of supporting farm incomes at a reasonable level and at the same time keeping production in line with demand, a problem discussed more fully in earlier issues of this report. It is also clear, however, that in a good many countries changes in the relative levels of support prices for different commodities are being used to adjust the pattern of production more closely to demand. Such changes have sometimes, though not inevitably, contributed to declines in farm income.

FIGURE II-6. The Level of Farm Support Prices for Wheat, Rice and Sugar Beet in Certain Countries



[1] World average.

PRICES AND THE CONSUMER

The renewal of inflationary pressures in 1956 was reflected in a rise in retail food prices in most countries of the world, in contrast to the continued downward movement in the prices of most food products on world markets. While in many cases the increase in retail food prices was a continuation of a trend that has gone on for some years, a feature of 1956 was the resumption of a rising trend in a rather large number of countries where it had previously been temporarily halted. In general, retail food prices kept fairly closely in line with movements in the index of the cost of living as a whole, but in a few countries, including Australia, Finland, Chile and Pakistan, food prices have recently tended to take the lead in the upward movement.

Indices of the retail price of food are now published regularly for 85 countries and territories.[7] Only 14 of these indices averaged lower (or the same as in 1955) in 1956. It is noteworthy that no less than nine of the countries where food prices fell or remained stable were in Central America and the Caribbean, or in the adjacent part of South America. The others were Ceylon, Japan, Malaya and Mauritius.

At the other extreme, 16 countries showed rises of over 10 percent in retail food prices between the two years. Again, they tended to be concentrated in a few geographical areas: five (including most of those with the sharpest inflation) were in the southern part of South America, six in Southeast Asia, three in the Near East and the remaining two in Scandinavia.

For the rest there was a modest increase in retail food prices in North America, Northern Europe (apart from Scandinavia) and most countries of Africa, and a rather larger increase in Southern Europe, Scandinavia, Oceania and the Near East.

The rise in retail food prices in 1956 was by no means always a continuation of a previous trend. Of the 85 countries under review, 26 have shown an increase in the retail price index in each of the past five years, but all the others have shown temporary declines, or at least price stability, at some time during the period. In no less than 21 countries the renewed upward movement began in 1956, including Canada, the United States, Belgium, Iran and Pakistan and, among the countries where there were increases of more than 10 percent in 1956, Burma, India, Finland and Syria. India affords a striking example: the index of retail food prices (1953 = 100) averaged 93 in 1954 and 85 in 1955 when government measures to maintain farm prices were necessary to prevent a steeper decline, but rose again to an average level of 100 in the second half of 1956 in spite of the running down of government stocks.

The continuing rise in retail food prices is in sharp contrast to the abundant, and indeed surplus, supplies of food in the world as a whole and the general downward trend of food prices in international trade. It illustrates once more how extensively the economies of most countries have been insulated from world price movements, largely as a result of agricultural support policies and of similar measures to safeguard national interests in other sectors of the economy. To some extent the rise in retail prices reflected higher farm price supports where these are not neutralized by subsidies, or higher farm prices resulting from, for example, the severe winter in Western Europe or crop failures in Pakistan. The inflationary forces were not, however, the same in all countries. In some Near Eastern countries prices of imported products such as sugar, tea and coffee rose after the political crisis in the autumn. In a number of countries of Latin America and Southeast Asia, it appeared that the expansion of consumer demand as a result of economic development and population growth had outrun the expansion of food production and that, for example, for balance-of-payments reasons, the quantity of imports brought in was not sufficient to stabilize prices. Nevertheless, in some countries, including Indonesia, India and Pakistan, food imported under special terms limited the rise in prices.

Again, some disinflationary measures were, paradoxically, of a nature tending to raise food prices, e.g., the reduction or removal of food subsidies as in the United Kingdom and some Scandinavian countries, or the stabilization of exchange rates in, for example, Bolivia and Colombia.

Widening marketing margins are a factor tending to raise retail food prices even at times of farm price stability, especially in the more developed countries where processing and services are becoming more elaborate and higher

[7] See *Monthly Bulletin of Agricultural Economics and Statistics*. FAO, Rome, May 1957.

labor costs tend to increase the cost of existing services. As usual, however, up-to-date information on the course of marketing margins is available only for the United States. In that country the marketing margin for the average urban family's " market basket " of farm foods increased from $575 in March 1956 to $600 in March 1957, or by a little over 4 percent. During the same period the farm value of the market basket rose by about 3 percent and its retail cost by about 4 percent.

Developments during the first few months of 1957 indicate that the upward pressure on food prices will continue in most countries. In Western Europe new claims for higher farm prices of key products, particularly milk, have already been raised in several countries. In the Netherlands the relatively low farm prices are to be raised and the subsidy on sugar has been abolished. A tendency to increase producer prices and to make wider use of producer price guarantees for domestic food crops is also noticeable in Latin America, while at the same time many governments are attempting to shake off the burden of subsidies. Among the few indications of greater price stability in the future is the establishment of reserve stocks in India, Japan and Brazil out of concessional food imports from the United States.

The influence of retail prices on food consumption levels is discussed in the next Chapter.

AGRICULTURAL POLICIES AND DEVELOPMENT PLANS IN 1956/57

In 1956/57 changes in agricultural policies and programs have again been rather widespread. The year 1955/56 saw the establishment of the United States Soil Bank program and the preparation or initiation in a great many of the less developed countries of new development programs, often with significant changes in emphasis from those that had preceded them. It seemed therefore that few further major changes were likely until these relatively long-term programs had been completed. In fact, however, some of the new programs instituted in 1955/56 have already been modified during the year now under review.

It now appears that the success of the Soil Bank program in reducing United States stocks may not be as great as was hoped for, and new proposals are under consideration for substantial changes in the United States crop control mechanisms and price support system.

In Europe also there have been important policy developments during 1956/57. In Western Europe six countries have signed a treaty, now awaiting ratification, for the establishment of a Common Market, to include also their dependent territories. A Free Trade Area which would include additional Western European countries is also under discussion, while somewhat similar trade agreements are being considered in some other regions. In Eastern Europe, major changes have occurred in the organization of agricultural production and distribution, mainly as a result of growing consumer pressure.

In the less developed parts of the world, while some new plans have been established or projects begun, the most general feature of 1956/57 has been a temporary slackening in the pace of implementation of agricultural development projects. The revision or postponement of previous plans and projects, because of inflationary pressure, reduced export earnings or political factors, has been more frequent than in most recent years. There appears in some cases to be a need for greater flexibility in agricultural development planning, so that changing circumstances do not entail the complete abandonment or postponement of previous plans.

North America

Recent developments appear to indicate that the present production and price policies of the United States, in particular the Soil Bank program and the system of flexible price supports, may not be able to bring about a sufficient temporary reduction in output for surplus stocks to be eliminated. Such reductions in stocks as have so far been achieved are mainly the result of the marked stepping-up of surplus disposal programs in 1956/57, noted in an earlier part of this chapter.

United States acreage of some crops was reduced in 1956/57 under the Soil Bank program and there have been larger reductions in 1957/1958, the program's first full season of operation, especially under the Conservation Reserve, the longer-term part of the program. Participation in the Soil Bank has not, however, been as great as was anticipated and its effects have been disappointing. For example in 1957/1958 the reduction of almost 25 percent in the wheat acreage is likely to result in a crop that is only about 3 percent smaller than last year's because of higher yields.

The probable need for further changes in the United States price support system was foreshadowed when the Government's proposals for the 1957/58 acreage allotments and support price for maize failed to receive the required majority in the farmers' referendum. Later, while the continuation of the Soil Bank was under discussion in Congress, the Government made proposals which, if they become law, would eliminate (a) the automatic raising of the support level for a commodity when its supply is less than "normal"; (b) the floor of 75 percent of parity under the support level for the "basic" crops (wheat, maize, rice, groundnuts and cotton) and certain dairy products; and (c) the legal requirement to impose production controls when the supply of a commodity exceeds "normal". It was proposed that either the floor price under the basic crops should be lowered to 60 percent of parity, or that there should be the same discretionary authority to set the support level between zero and 90 percent of parity as now applies to the "non-basic" crops.

In Canada, although grain stocks remain large, specific measures to reduce output have still not been considered necessary and the interim payment for deliveries to the Wheat Pool was even raised by a small amount in 1956/57. A measure that will slightly reduce the wheat acreage, however, is the recent decision of the Wheat Board to allow soil-conserving feedingstuffs to be grown on part of the acreage used as the base for determining wheat delivery quotas. Special assistance to farmers has also been increased and, in addition to paying part of the carrying costs of stocks, the Government now also grants short-term loans to wheat farmers in the Prairie Provincies to meet financial difficulties arising from their inability to deliver grain because of the congestion of storage facilities. The maximum loan has recently been raised from $ 1,500 to $ 3,000.

Possible future changes in Canadian policy are under consideration, including the proposal in the Preliminary Report of the Royal Commission on Canada's Economic Prospects (the Gordon Report) that the present price support system should be changed to some form of deficiency payments.

Oceania

In Australia also, no measures to reduce output have been taken and the support level for wheat has again been raised. The Chairman of the Wheat Board, however, has issued a further warning that the wheat acreage should be reduced in favor of other crops in greater demand.

The trade relations of both Australia and New Zealand are being re-assessed in view of the increased output of livestock products in the United Kingdom, their principal market, and the re-appearance of Argentine meat as a major competitor. Both countries have sent trade missions to the United Kingdom and negotiated agreements modifying and supplementing the Ottawa Agreements of 1932. It was agreed that the United Kingdom would import a slightly larger quantity of Australian wheat than in recent years, though still considerably less than the prewar average. The agreement with New Zealand included the cancellation, for ten years, of the United Kingdom's right (never used) to impose quota restrictions on its imports of New Zealand dairy products and pork. There are to be annual consultations between the New Zealand and United Kingdom governments on agricultural and marketing policies and the food import policy of the United Kingdom, and consultations when necessary on the needs of the New Zealand meat trade.

Western Europe

In March 1957 the Governments of Belgium, France, Italy, Luxembourg, the Netherlands and Western Germany signed the treaty for the establishment of the European Economic Community, better known as the Common Market. If ratified, the treaty will probably go into operation in 1958 and its phased program be introduced gradually over a period of 12 years or more. The program includes the gradual removal of customs duties and quantitative trade restrictions between members; a common tariff and commercial policy toward non-members; the co-ordination of economic policies; a common agricultural policy (including the possible establishment of supranational European Marketing Boards for some products); a European Investment Bank for economic expansion (including development projects in underdeveloped parts of member countries); and the association of the overseas territories of members, for whom a special development fund is to be established.

It is too early to assess in detail the likely effects of the Common Market on agricultural

policies, especially as it is not yet known whether other countries will join or whether it will be associated with a wider European free trade area, which would include the United Kingdom and other countries and would not have a common tariff against the rest of the world nor cover agricultural products. Above all, the details of the proposed common agricultural policy will not be decided until after the treaty actually comes into operation, and much will depend on the type of policy agreed and on how it is to be co-ordinated. If the treaty is ratified, substantial changes are likely in production and trade policies for agricultural, fisheries and forestry products, not only in the six member countries. Other countries, in Europe and elsewhere, will be faced with the common tariff barrier of the six and possibly by larger exportable surpluses from these countries, while the inclusion of the overseas territories of Belgium and France may result in some shifts in the pattern of European imports of tropical products.

While the changes that may result from the establishment of the Common Market still lie in the future, the year under review has seen some further adjustments in the agricultural policies of a number of Western European countries. Government efforts to bring farm incomes nearer to those received in other occupations have continued as far as possible to stress measures to help farmers reduce costs and increase productivity, rather than the payment of higher farm prices, particularly where these would strengthen inflationary tendencies. There has therefore been increasing emphasis on modifications in farm structure, such as the consolidation of uneconomic holdings, and on measures to provide assistance for long-term improvements. Nevertheless governments have agreed to some increases in farm prices because of rising costs of production.

In the United Kingdom a farm modernization program has been introduced, under which grants of one third of the cost will be paid for all the main permanent improvements not previously covered by grant. Special encouragement is to be given under this program to voluntary amalgamation schemes for the elimination of uneconomic holdings. The subsidy on nitrogen fertilizers has again been raised for 1957/58. In Western Germany the 1957 " Green Plan " puts increased funds at the disposal of agriculture, mainly for improvements in farm structure and rural conditions. The emphasis in the less developed countries of Southern Europe continues to be on technical methods of increasing production. In Yugoslavia greater investment in irrigation and mechanization is planned in 1957 and in Italy the life of the *Cassa per il Mezzogiorno*, which, however, is not exclusively for agricultural projects, has been extended to 1965 and new funds raised.

At the same time as these measures to increase output and efficiency, firmer guarantees have been given in some countries against reductions in farm prices and to compensate for increased costs. A new system of guaranteed prices has been introduced in France under the third development plan for 1957-60 ; the price of milk will be automatically linked to the movement of non-farm price indices and an annual report will be made to Parliament on the economic situation of agriculture. The United Kingdom announced new long-term assurances, in November 1956, under which the farm price of any commodity may not be lowered by more than 4 percent in one year (for livestock and livestock products the limit is 9 percent in three years) and the total value of the guarantees by more than 2½ percent, this total figure to be adjusted to take account of cost increases or decreases since the previous review.

Some Western European governments have also taken further steps, mainly through their price policies, to bring the pattern of agricultural production more in line with prospective demand and with the conditions of international trade. Agricultural production in France is to be oriented by the third plan toward greater regional specialization. Mainly by means of price control the area of wheat is to be confined to the most suitable land, so that in spite of a reduction in area production may increase further ; the production of wine and potatoes is to be reduced and production of animal products, feedingstuffs, fruit and vegetables increased, in order to raise exports and reduce imports. In Italy the area of rice, for which there have been marketing problems, is being reduced by limiting the guaranteed price to a certain quota of area, and the production of feedingstuffs is being increased. The latest changes in guaranteed prices in the United Kingdom are designed to discourage the expansion of milk, pigmeat and eggs and further stimulate home-grown animal feed.

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

During the latter part of 1956 and the beginning of 1957 there have been some important modifications in agricultural policies in the U.S.S.R. and, especially, in the Eastern European countries, mainly as a result of growing consumer pressure.

The revision of the new Eastern European five-year plans which were begun in 1956 is reported to be under consideration, with a view to giving greater encouragement to agriculture. Bulgaria, the only Eastern European country that did not begin a new plan in 1956, is to follow its present five-year plan with a three-year one for 1958-60, which will bring the timing of its plans in step with the other countries. In addition, Bulgaria is preparing a long-term plan for agriculture (1957-70), emphasizing the development of labor-intensive crops, such as vegetables, fruit and grapes, as a means of combatting rural underemployment. The plan is based mainly on the possibilities for increased trade within the Communist bloc. In the U.S.S.R., although the sixth five-year plan is based largely on increased yields, a further substantial extension of the agricultural area has been announced and 4 to 5 million hectares of virgin land are to be opened up in 1957.

There have been further major changes in marketing and price policies, reflecting the decision to let agricultural incomes rise as an incentive to better performance. Increased reliance is being placed on contract sales and on encouragement by means of higher prices, rather than on compulsory deliveries. In all countries the gap between prices for compulsory deliveries and those for above-quota sales has tended to be reduced, and 1956/57 marked a new stage in which official procurement prices were brought nearer to free market prices. While in the U.S.S.R. state procurements are still the main marketing channel, the increase in state farms (*sovkhozes*) has enabled the Government to rely increasingly on incentives instead of compulsion in dealing with the collective farms (*kolkhozes*). State procurements of grain, which had previously changed little from the prewar level, rose by some two thirds in 1956 as a result of the good harvests in Siberia and Kazakhstan, where the virgin lands have to a great extent been opened up by state farms. It is also planned that, after two or three years, state farms near the big towns and industrial centers will completely cover their needs for vegetables, potatoes and milk. Increased production on the collective farms appears to be oriented mainly toward the more profitable industrial crops, while from 1958 the family plots of collective farm members are to be exempt from compulsory deliveries.

In most of the Eastern European countries the compulsory delivery system has suffered a considerable setback. In Poland quotas have been substantially cut; in Romania the compulsory delivery system has been almost completely abandoned and in Bulgaria and Czechoslovakia it has been abolished for certain products. Procurements are to be partially replaced by an extension of contract production and deliveries in Hungary, where the system of compulsory deliveries broke down during the insurrection. Although compulsory deliveries are maintained in Eastern Germany, the effects of the system have been attenuated by improved price conditions.

Collectivization policies have also been changed in several countries of Eastern Europe and, to a smaller extent, in the U.S.S.R. itself, where agricultural land is fully collectivized. In the U.S.S.R. the emphasis is now on measures to improve incentives to communal work; in addition, the further amalgamation of small collective farms has been announced. While since 1953 some encouragement has been given to increased production on the family plots of *kolkhoze* members, collective farms were directed in 1956 to take steps to prevent members from neglecting communal work in favor of these plots, and in some cases to limit individual possession of land and livestock on the plots. It appears therefore that the share of the family plots in total agricultural production is not to be permitted to acquire any greater importance. Various restrictions have also been placed on town dwellers keeping livestock, which are now being bought by collective farms by means of credits from the Agricultural Bank.

The first part of 1956 was marked by an intensified collectivization drive in Eastern Europe. Except in Bulgaria, however, where co-operatives accounted for 78 percent of the agricultural area at the end of 1956, and also in Albania, the campaign was halted because of growing resistance in the countryside. Collectivization remains the ultimate objective, but its implementation has been considerably slowed down because of the need to raise output in the short run by encouraging private farming. In Poland three quarters of the existing co-operatives were

disbanded in 1956 and individual farmers have been encouraged to acquire land up to the maximum set at the time of the agrarian reform. Official policy now appears to aim at the consolidation of efficient existing co-operatives and the encouragement of farmers to co-operate on more limited lines than through complete collectivization. In Hungary also the events of October swept away half of the collective farms, though a large part of them are now being restored on a somewhat different basis.

Far East

In the Far East there was some slowing down in the execution of agricultural development projects in a number of countries during 1956/57. The long-term plans of Burma and Indonesia still await official approval, having been postponed because of civil disturbances and a precarious budgetary situation; in Burma only projects that increase exports or selfsufficiency, such as the replanting of abandoned paddy areas, are to be started. The implementation of plans in British Borneo has been hampered by scarcity of labor, among other factors. Ceylon's six-year plan (1954-59) was not found satisfactory by the new Government and a National Planning Council has been set up to prepare a new plan, in which there will be more emphasis on industry, although the encouragement of food production is to be continued. Progress was retarded in Pakistan and South Korea in 1956/57, as attention had to be concentrated on immediate food problems, and in Thailand because of lack of capital and transport facilities.

In India, in spite of restrictive budgetary measures to combat inflationary pressures, including the postponement of development projects involving foreign exchange expenditure, continued progress has been made in hydro-electric schemes benefiting agriculture, such as the completion of the Hirakud Dam, in community development and in marketing and credit reform. Substantial quantities of United States surplus commodities have been imported in an attempt to stabilize the rising price of food. The agricultural production target for the second five-year plan has been revised upwards to 28 percent above the 1955/56 output. With the help of an International Bank for Reconstruction and Developement (IBRD) loan, Japan has started pilot projects for land reclamation on an initial area of 22,000 hectares of uncultivated land and 5,000 head of dairy breeding cattle are to be imported from Australia in a two-year period. Malaya's development plan for 1957-61 is being finalized and the outcome of the London conference in early 1957 was favorable to financial assistance for its implementation.

Mainland China's second five-year plan for 1958-62 has been revised, reducing targets for heavy industry because of the shortage of coal and the delay in deliveries of industrial equipment from Eastern Europe. Greater emphasis will be placed on agriculture and light industry to meet the growing demand for consumer goods. Farming policy is to concentrate on improved methods rather than large-scale projects and the import of machinery. A notable development is that some form of collectivization now applies to 96 percent of peasant households, the advanced forms of co-operative rising from 4 percent in 1955 to over 60 percent in 1956.

Latin America

There have also been setbacks in the implementation of development projects in some Latin-American countries, though in most of the region good progress has continued. Persistent inflation and financial difficulties have slowed down the implementation of the eight-year Agricultural Development Plan in Chile and of the Cauca Valley project in Colombia. In the latter country, however, a National Production Corporation has been established with an authorized capital of 500 million pesos to implement new development projects which are in preparation.

In Argentina a new development plan is expected following the survey carried out by a United Nations/FAO Mission in collaboration with the Government. The colonization plan to increase agricultural production in new areas has been strengthened. As part of the gradual liberalization of the grain market, the National Grain Board has been re-established to guarantee marketing facilities and assist the expansion of production. In Mexico irrigation works, farm credit, crop insurance and the provision of improved seeds and fertilizers have been accelerated. Agricultural development projects in Brazil are to be expanded, using funds obtained as a loan from the United States through a surplus disposal deal; Brazil plans to increase wheat production to a total of 1.5 million tons

by 1960. In Peru a new Agricultural Planning Office has been set up. In Bolivia strong efforts at price stabilization, through devaluation and wage freezes, have increased incentives to farmers to raise agricultural output.

Progress in the Central American Integration Program includes the signing of a ten-year treaty to set up a free trade area as a prelude to a full customs union.

Near East

Development activities were temporarily curtailed in several countries of the Near East in 1956/57 as a result of the political crisis and of the decline in oil and other revenues following the closure of the Suez Canal.

The curtailment of agricultural development projects was particularly marked in Jordan, in view of the ending of United Kingdom aid and the temporary withdrawal of Point Four, the two major contributors to development expenditure. In spite of the sharp fall in oil production and revenue in the last two months of 1956, the total for the calendar year showed an increase in all the oil-producing countries except Iraq, where, however, there is unlikely to have been any serious reduction in the development program, as it has never kept pace with revenue and there are substantial balances in hand. Although oil revenues increased in Iran, they remain below prenationalization levels and for the next two years or so will fall somewhat short of the expenditure needed for the development plan, so that international loans are still sought ; an agreement was reached recently with the IBRD for the loan of $75 million.

In some other countries of the Near East new development plans have been prepared or projects begun. Long-term development programs, mostly for agricultural projects, are under discussion in both Afghanistan and Ethiopia. In the Lebanon a five-year plan for the development of agriculture is proposed which would make the country more self-sufficient in grains and greatly increase the annual return from viticulture and pistachio production ; this is in addition to the Litani hydro-electric project, for which an IBRD loan was obtained in early 1956. In Egypt an " Economic Organization " has been established to supervise government investment, together with a High Council for National Planning to replace the more limited National Production Council previously responsible for economic planning. Although restrictions on new public and private investment continue in Turkey, development projects already started are being completed, including the extension of the cultivated area by irrigation and flood control and the establishment of additional fertilizer plants and facilities for the processing and storage of food.

In Egypt the minimum acreage for wheat has again been raised ; additional encouragement is also being given to alternative export crops to cotton, such as rice and onions. In Turkey, where farmers have been badly hit by drought, official prices for wheat and other products were raised by as much as one third in May 1957. The official price for hard wheat is thus only a little below the free market price.

The Near East is another region in which a common market is under consideration. The economic committee of the Baghdad Pact has decided to organize a detailed study of the possibility of establishing a customs union, a free trade area and a common market.

Africa

Progress has been slowed down in North Africa by the severe drought of late 1956 and early 1957. In Morocco, where the drought was worst, emergency measures include the banning of all grain exports from February 1957, and longer-term measures to make agriculture less dependent on climatic fluctuations are under consideration.

In the rest of Africa former policies and programs have been continued with little modification, though in such areas as Ghana and the Federation of Rhodesia and Nyasaland reduced export earnings caused by lower prices may affect the pace of agricultural development. Uganda's five-year capital development plan has been revised with a slight increase in capital expenditure, and in Kenya, following the development program of 1954-57, an expenditure of £ 23 to 24 million on social and economic development is envisaged for the next three years, including £ 9 million for agricultural schemes.

Increased investment in some of the dependent territories is likely under the European Common Market Treaty described above. During the first five years of the treaty's implementation $580 million are to be invested, almost all in the French territories. In addition a new private investment consortium has recently been set up to develop the natural resources of the African region. Agriculture may

benefit from the more rapid development of the Sahara expected as a result of the French decision to treat it as a single economic unit under the *Organisation commune pour les régions du Sahara*.

Fisheries Policies in 1956/57

Many of the measures discussed above, especially trade agreements and development plans, affect the fishing industry. In addition there have been a few changes in specific fishery policies during the year.

The United States Fish and Wildlife Act of 1956 reorganized the federal fishery services. One of the new functions is the granting of loans from a $10 million revolving fund for the financing of operations, for the replacement and maintenance of vessels and gear and for research into basic problems. The Act also made permanent the arrangement whereby 30 percent of the customs duties on fishery produce is allocated for the promotion of the free flow of domestically produced fishery products. In Canada the size limit on vessels eligible for the grant for building vessels has been raised for those built in the Atlantic Provinces, in accordance with the Government's policy to encourage the development of the Atlantic area, and in order to increase the number of large ships able to fish the Grand Banks and other traditional grounds where foreign competition is growing.

In Norway an investigating committee has recommended further centralization of exports, including the establishment of a co-operative with the sole right to export processed fish. Additional assistance for the United Kingdom herring industry has been under consideration and in February 1957 the Government proposed a direct subsidy to herring fishermen in place of the present indirect assistance, which would substantially increase the level of financial aid. In the remainder of the main fish-producing countries, most of whose policies were discussed in detail in last year's issue of this report, no major changes in policy have occurred during the year.

Forestry Policies in 1956/57

Forestry also is affected by some of the policy developments already discussed. The United States Conservation Reserve Program, for example, includes afforestation as a conservation measure, while the European Common Market would necessitate adjustments in forest policies as a result of its influence on the trade in forest products and the use of marginal land. During the year under review forestry policy developments have mainly concerned the strengthening of established policies, the clarification of objectives and the integration of forestry projects into over-all planning.

Both Canada and the United States have made long-term forecasts of needs and resources of forest products as a basis for policy, and several Western European countries have made progress in the establishment of forest inventories for the same purpose. The U.S.S.R. also has classified its forests for management purposes, and regional development plans based on consumption trends are being drawn up. In Western Europe further measures have been taken to increase productivity by promoting more efficient logging and utilization, by the setting up (as in Greece and Yugoslavia) of afforestation and rehabilitation plans, or by the consolidation of the management of small privately owned woodlands, as in France where the law on *groupements forestiers* has begun to be implemented. In the U.S.S.R. a program for the intensified mechanization of silvicultural work was finalized in 1956.

A number of countries in the Far East have strengthened their forest legislation and administration and their land allocation or development authorities. In Burma a considerable increase in the area of reserved forests has been approved and in Japan and other countries steps have been taken to further the establishment or management of community forests. Developments in the planning of forest industries have included the setting up of a ten-year forestry industrialization program in Indonesia. In Latin America interest has centered on the investigation, development or expansion of projects relating to pulp, paper and board industries, while several countries have taken steps to incorporate forest utilization projects into over-all economic plans and a regional study of long-term forest development has been initiated. A first sawmilling training center commenced operations in the Amazon valley. In the Near East, Turkey has promulgated a consolidated forest law, emphasizing forest protection and utilization and village development; a five-year plan began in 1956 for the creation of community forests and increased protective afforestation. Several other countries in this re-

gion have also reviewed their forest policy, legislation or administration. A recent development is the initiation, with the help of FAO, of a study aiming at the formulation of large-scale afforestation or reforestation projects in the countries of the Eastern Mediterranean basin.

COMMODITY SURVEY AND OUTLOOK

Wheat

In the 1956/57 trade season wheat supplies (outside the U.S.S.R., Eastern Europe and China) were about as large as in 1955/56. Opening stocks in the four major exporting countries were almost unchanged, a decline in Argentina being offset by a rise in Canada.

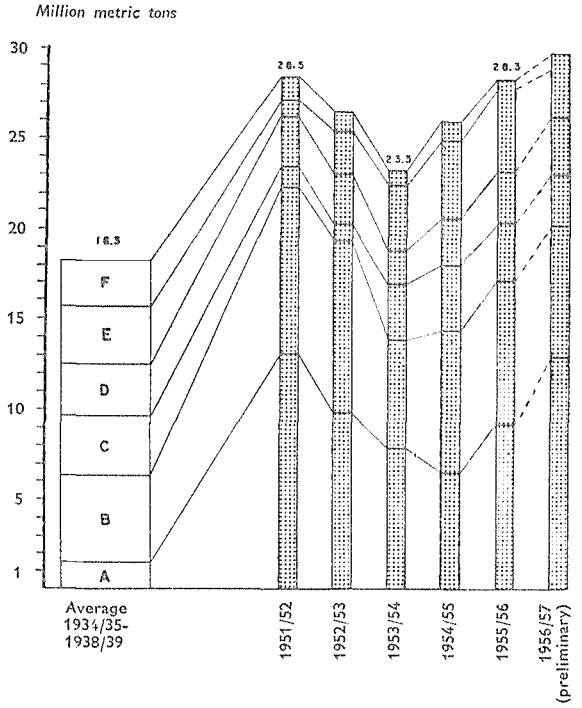
There was a slight decrease in the world wheat crop in 1956/57, mainly the result of large declines in Western Europe and Australia (Table II-12). Production rose in the Americas, partly because of the continuing expansion in Brazil and Mexico, but mainly owing to higher yields in the large exporting countries. In Canada the area sown to wheat was again smaller than in the preceding year, but the outturn was 9 percent larger; in the United States the area was more than 1 million hectares larger than in 1955 and production increased by 7 percent. In Argentina also sowings expanded substantially and production increased by one third.

TABLE II-12. WORLD WHEAT PRODUCTION, PREWAR AND 1951-56

COUNTRY	Prewar average	Average 1951/52-1955/56	1955/56	1956/57 (preliminary)
	Million metric tons			
Argentina	6.6	5.8	5.3	7.1
Australia	4.2	5.0	5.3	3.7
Canada[1]	7.2	14.5	13.4	14.6
United States[1]	19.5	29.3	25.4	27.1
Total four countries	37.5	54.6	49.4	52.5
Western Europe	31.1	34.3	37.8	31.8
Importing countries outside Europe[2]	12.4	13.7	15.6	15.5
North Africa and Near East[3]	7.6	12.0	12.0	13.5
Others[4]	6.4	7.6	8.6	8.2
WORLD[4]	95.0	122.2	123.4	121.5

[1]Production for the years 1934-38 was abnormally low owing to the extreme droughts of 1934 and 1936. The 1937-41 averages for Canada and the United States were 10.4 and 23.4 million tons respectively. — [2]Japan, India, Pakistan, Brazil and Mexico. — [3]Algeria, Morocco, Tunisia and Egypt, Iraq, Syria, Turkey. — [4]Excluding the U.S.S.R., China and Eastern Europe.

FIGURE II-7. World Exports of Wheat and Wheat Flour (Grain Equivalent), 1934/35 - 1938/39 Average and 1951/52 - 1956/57



A. U.S.A.
B. Canada
C. Argentina
E. Other exporting countries outside the Communist group
F. U.S.S.R., Eastern Europe and China

World exports of wheat and flour[8] in 1956/57 were a record, probably reaching 30 million tons (Figure II-7). Changes in trade in 1956/57 were only in part due to the influence of weather on crops. Sales under special terms increased and carry-over stocks enabled other countries to maintain and even increase their shipments, despite smaller crops. Thus Australia and Italy increased their exports, but Turkey and France were wheat importers in 1956/57 and small crops elsewhere in Western Europe also increased import requirements.

Deficits were readily covered by the North American exporting countries or by the U.S.S.R. While Canada could not maintain wheat exports at the high 1955/56 level, despite larger supplies, the United States once more expanded its shipments, mainly through surplus disposal measures. The needs of Eastern Europe, Yugoslavia and

[8]Including East-West trade, but excluding trade within the Communist group of countries.

Egypt were partly covered out of the increased U.S.S.R. supply, and the Communist bloc as a whole had a small export surplus in 1956/57 similar to that in 1953/54 and before. In spite of the expansion in total exports and of reductions in the carry-over stocks of the United States and Australia, the year 1956/57 appeared likely to end with aggregate world stocks of wheat scarcely changed. There was a large increase in stocks in Canada by about 3 million tons at the end of July 1957.

Prospects for the 1957 crop are good in India and also in Western Europe. The consequent decrease in import requirements in 1957/58 in the latter region will hardly be offset by the imports made necessary by drought in North Africa and Turkey. In Argentina, where the grain area is much smaller than before the war, higher minimum prices were announced in 1956 which should give new incentives to wheat sowings in 1957. In the United States farmers have placed 5 million hectares, equivalent to 20 per cent of the 1956 wheat acreage, in the Soil Bank. With higher yields, however, the 1957 crop will probably be only about 8 percent lower than that of 1956; considerably smaller exports are expected in 1957/58 but nevertheless the carry-over stocks in the United States are likely to show some further reduction by mid-1958. Plantings in Canada have resulted in reduction in acreage by almost 5 percent which, with the recent average yields, would mean a crop 1.3 million tons less than in 1956. If carry-over stocks are to be reduced, however, Canadian exports would have to be larger than at present.

Export prices for wheat showed little change in 1956/57. The sharp rise in freight rates in the autumn of 1956 added about 10 percent to c. i. f. prices at northern European ports betwen July and November, but early in 1957 rates fell back to levels similar to those which prevailed a year earlier. At the same time, Argentina offered wheat from her abundant new crop at lower prices in Western Europe.

Coarse Grains

Total supplies (opening stocks plus new crops) of coarse grains in 1956/57 were again larger than in the preceding year. Carry-over stocks, concentrated mainly in North America, were 4.6 million tons larger, and total production outside the Communist bloc rose by 9-10 million tons (Table II-13).

TABLE II-13. WORLD PRODUCTION OF COARSE GRAINS, PREWAR AND 1951-56[1]

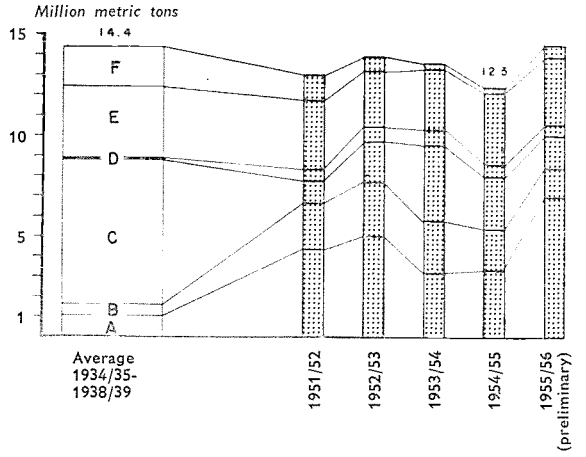
COUNTRY	Prewar average	Average 1951/52-1955/56	1955/56	1956/57 (preliminary)
	..... *Million metric tons*			
Argentina	9.2	5.2	5.8	5.1
Australia	0.7	1.7	2.2	2.1
Canada[2]	7.7	13.5	13.8	16.2
United States[2]	72.8	109.8	118.4	117.7
Total four countries	90.4	130.2	140.2	141.1
Western Europe	37.4	40.4	42.6	47.8
Importing countries outside Europe[3]	28.6	34.5	35.7	35.7
North Africa and Near East[4]	8.7	11.4	10.6	12.0
Other countries[5]	25.0	32.8	33.2	35.2
WORLD[5]	190.1	249.3	262.3	271.8

[1]Barley, oats, maize, sorghum, millets and mixed grains.— [2]Production for the years 1934-38 was abnormally low owing to the extreme droughts of 1934 and 1936. The 1937-41 averages for Canada and the United States were 9.7 and 89.9 million tons respectively. — [3]Japan, India, Pakistan, Brazil and Mexico. — [4]Algeria, Morocco, Tunisia and Egypt, Iraq, Syria, Turkey. — [5]Excluding the U.S.S.R., China and Eastern Europe.

In Canada production increased by 2.4 million tons (mainly oats and barley), enough to outweigh declines in the other large producers; the United States maize crop was more than 5 million tons larger than in 1955, owing to the highest yield on record, but oats, barley and grain sorghums fell. In Argentina, on the contrary, sowings of small coarse grains expanded whereas the maize crop was reduced. The Union of South Africa had another large maize crop, and barley output rose in North Africa and the Near East, important suppliers for Western Europe. India was adversely affected last year by weather extremes and production of coarse grains decreased by about 12 percent; the current year does not seem more favorable though areas have expanded slightly. Western Europe reaped 5.2 million tons more coarse grains than in the preceding year, much of the wheat area affected by winter kill being resown to coarse grains. France alone produced an additional 4 million tons of barley.

Western Europe, the main market, has recently absorbed about three quarters of world exports and, with less feed-wheat available and an expanding livestock industry, imports increased by one million tons in 1955/56, so that world exports of coarse grains reached a postwar peak

FIGURE II-8. World Exports of Coarse Grains 1934/35-1938/39 Average and 1951/52 - 1955/56



A. U.S.A.
B. Canada
C. Argentina
D. Australia
E. Other exporting Countries outside the Communist group.
F. U.S.S.R., Eastern Europe and China.

(Figure II-8). The exceptionally large 1956 crop of coarse grains in Western Europe reduced import requirements, however, especially since it was followed by a mild winter, and the year 1956/57 will therefore probably close with record carry-over stocks. In the United States the season is expected to end with stocks of oats, barley and grain sorghum about 2 million tons less, but stocks of maize may increase by nearly 8 million tons. A substantial increase of about 3 million tons is forecast also for Canada's carry-over stocks of barley and, especially, of oats. Export prices, which had increased during the first half of 1956, have again receded considerably.

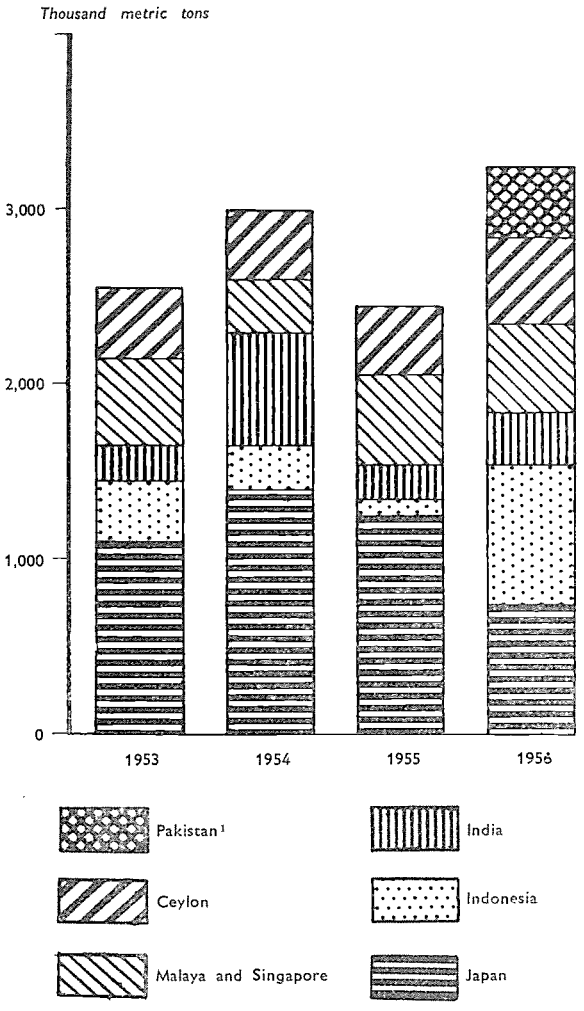
As in the case of wheat, the outlook for 1957/1958 is influenced by the new Argentine policy which has substantially raised minimum prices for barley, oats and maize. The Soil Bank program in the United States has reduced the 1957 maize area by 1.8 million hectares, or 5 to 6 percent, but stocks will not be reduced in 1957/58 unless yields per hectare also fall.

Rice

Rice production, consumption and trade all increased during 1956. Exportable stocks were reduced drastically and prices were fairly steady.

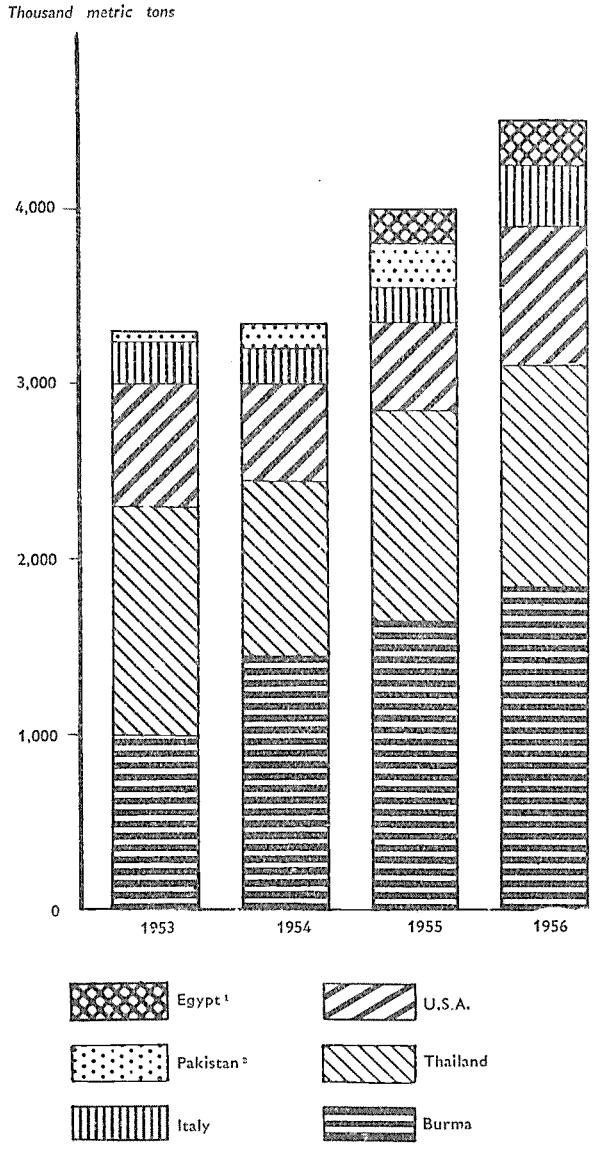
Production continues to expand and the 200 million ton mark was again surpassed in 1956/57. The increase was once more concentrated in Asia; Italy and the United States, on the other hand, took steps to limit acreage. Import demand for rice continues to be well sustained, notwithstanding the good crops harvested in most countries which are normally importers. There were large purchase commitments made in late 1956, and the increase in world trade which was a marked feature of 1956 is therefore likely to be maintained in 1957. This general expansion, however, masks divergent movements in purchases by the individual importing countries (see Figure II-9 (a). Thus Japan, which in recent years has been the main importer, reduced imports sharply in 1956 following an exceptionally good rice harvest; Japanese imports are likely to be still further reduced this year, although per caput rice consumption is apparently recovering at the expense of other cereals. This sharp fall in Ja-

FIGURE II-9 (a). Net Imports of Milled Rice of Six Leading Importing Countries



[1]Net export in 1953-55

FIGURE II-9 (*b*). Net Exports of Milled Rice of Six Leading Exporting Countries



[1] Exports less than 50,000 tons in 1954 and negligible in 1953.
[2] Net importer in 1956.

pan's imports has coincided, however, with greatly increased purchases by Indonesia and the emergence of Pakistan and Korea as importers, while with rising consumption India's rice imports will probably be maintained for the next few years at the annual rate of at least half a million tons.

The expansion of shipments during 1956 was not shared equally among the leading exporters (see Figure II-9 (b)). Notwithstanding the great rise in Burma's exports, non-Asian exporters supplied a larger share of world shipments than in 1955, owing to the successful efforts of Italy and the United States to dispose of stocks, and the bigger crops in Brazil and Egypt.

As a result of the increased import demand, accumulated stocks in the hands of exporters have been disposed of and most export prices have kept fairly steady in the past year in contrast to the declines in previous years. The basic Burmese price for 1957 to private buyers has been set at about £36½ f.o.b. per long ton ($101 per metric ton), compared with £ 36 in 1956 and £ 43 in 1955, and prices for some special qualities have increased. Some price reductions were made, however, in Burmese sales to governments and favorable payment terms have been granted under the various special agreements for United States surplus rice procured by Asian countries. Paddy prices to farmers have generally remained fairly steady, though there was a small reduction in the United States support price.

From 1954 to 1956, the area sown to rice in the United States was successively reduced by about 40 percent, and this year it will contract further as a result of the Soil Bank program, probably by about 14 percent of the 1956 acreage. The Italian rice area was also reduced in 1956 and it is aimed to keep it down to this lower level in 1957. On the other hand, the successful disposal of surplus stocks and the expansion of import requirements are leading the main Asian exporters, particularly Burma, to plan a substantial extension of acreage. At the same time, almost all rice-growing countries are taking steps to increase yields per hectare. Whether (or when) the resultant increased production of rice will outstrip rising consumption will depend largely on the price policies pursued by governments for rice itself as well as for alternative foods.

Sugar

The world sugar economy experienced profound changes during 1956-57. Reflecting the widening disparity between production and consumption, stocks were reduced and world market prices almost doubled in a very short time. In many countries these developments stimulated a reappraisal of sugar production policies, the results of which will become apparent in the next few years.

In 1955/56 production of centrifugal sugar outside the U.S.S.R., Eastern Europe and China

reached 32.0 million tons (raw value), which was 400,000 tons higher than in the previous year (1.3 percent), and 12 million tons (60 percent) above the prewar average. The 1956/57 production is provisionally estimated at 33 million tons. Because, however, of unfavorable weather conditions, restrictions on production and the relatively lower profitability of sugar than of competitive crops, production increased more slowly during the last two years than previously. In the U.S.S.R. and China production is reported to have increased, but it declined in Eastern Europe.

Consumption has, however, expanded rapidly. Since 1951 world consumption (excluding the U.S.S.R., Eastern Europe and China) has increased by an average of 1.4 million tons, or 4.8 percent, annually and preliminary estimates indicate that it may have exceeded 33 million tons in 1956, 1.5 million tons above 1955. Per caput consumption has risen from 14.3 kilograms in 1934-38 to 18.3 kilograms last year. Inclusive of the U.S.S.R., Eastern Europe and China, total consumption approached 40.5 million tons, or some 10 million tons more than in 1951 (see Table II-14). The increase has been smallest in the United States, Australia and the northern European countries which even before the war had a per caput consumption of over 45 kilograms. In Latin America, Asia, the Near East and Africa, however, rising per caput income and a decline in the price of sugar in relation to other commodities, have helped to bring about an average per caput

TABLE II-14. WORLD CONSUMPTION OF SUGAR, PREWAR, 1951 AND 1956

REGION	Average prewar	1951	1956 (preliminary)
	..... *Million metric tons*		
Western Europe	6.9	8.0	9.6
North America	6.5	7.7	8.8
Central America	0.6	1.3	1.6
South America	1.4	3.0	3.8
Near East	0.3	0.6	0.9
Asia	2.9	3.2	5.3
Africa	0.8	1.7	2.3
Oceania	0.5	0.6	0.7
TOTAL	19.9	26.1	33.0
U.S.S.R., Eastern Europe and China[1]	4.4	4.4	7.4

[1]Published production estimates adjusted for exports and imports.

increase of about 100 percent since the prewar period.

Between 1949 and 1954 total world stocks increased from about 6 million tons to 12 million tons, almost one third of world consumption. In the three years 1951, 1952 and 1954, production of centrifugal sugar exceeded consumption by an average of about 2 million tons a year. But consumption has since risen rapidly and this necessitated a substantial drawing upon stocks in 1956, especially of the major exporting countries. When it became apparent at the end of 1956 that world production in the new crop year would be, at best, only about 1 million tons higher than in the previous year, prices began to rise very rapidly. As usual, various temporary and special factors were also at work, accelerating the rate of advance. Prices rose by 60 to 70 percent in a period of a few weeks; during the first part of 1957 the world price fluctuated around 6 cents per lb. and September "futures" were quoted at around 6.60 cents. One factor of major importance has been that the U.S.S.R. and Eastern Europe, instead of exporting their quota of about a million tons under the International Sugar Agreement, became very substantial net importers.

In many importing countries where expansion plans where held back by the relatively low world market price during 1953-56, a revival of interest in expanding production has taken place. In exporting countries also production appears to have received a new impetus. There are indications that the long-term trend in consumption is also rising at an accelerating rate. Assuming a continuation of the current trends in population and per caput real income and with retail sugar prices at 1953-56 levels, world consumption of centrifugal sugar will approach 45 million tons by 1960, some 7 million tons more than in 1955, if supplies are available.

Meat

World meat production (excluding the U.S.S.R., Eastern Europe and China) set a new record in 1956, owing largely to marked increases in North America and Argentina. In Western Europe, the growth of production has slowed down considerably in the last two years. This year, world production will increase less than in recent years, as a slight decline is expected in the United States, and Argentina's production is unlikely to increase as rapidly as in 1955 and 1956.

TABLE II-15. MEAT EXPORTS[1] OF SELECTED COUNTRIES, PREWAR AND 1950-56

COUNTRY	Average 1934-38	Average 1950-52	1953	1954	1955	1956 (preliminary)
	Thousand metric tons product weight					
Argentina	496	212	209	211	306	[2]484
Uruguay	73	71	52	54	4	[2]39
Australia	244	169	267	209	234	185
New Zealand	267	339	333	377	394	[2]425
Canada	84	62	42	42	38	44
United States	57	55	76	70	94	137
Denmark	217	235	318	350	363	317
France	3	20	16	55	61	28
Ireland, Rep. of	[3]45	[3]42	74	95	49	41
Netherlands	40	59	66	68	101	102
TOTAL	1 526	1 264	1 453	1 531	1 644	1 801

[1]Excludes canned meat. Includes fresh, chilled and frozen meat: beef and veal, mutton and lamb, pork, poultry, offal and other meat; prepared meat: bacon, ham and salted pork, other prepared meat. — [2]FAO estimates. — [3]Including some canned bacon and ham.

Meat trade expanded further last year, world exports in terms of carcass weight being nearly 30 percent above the average for 1950-52 and one fifth larger than before the war (Table II-15). Beef exports increased from 360,000 tons in 1951 to 820,000 tons last year. Exports of canned meat, however, continued to decline in 1956. United Kingdom meat imports rose to the highest level since 1947 and, as domestic production also expanded, supplies per caput were above the prewar average. Imports into several other Western European countries were also considerably larger, particularly in Western Germany. In contrast, purchases by the U.S.S.R. and Eastern European countries in world markets were further reduced.

With sharply increased exports, prices for beef from Southern Hemisphere countries declined heavily, averaging about 20 percent less than in 1955. As supplies of mutton and lamb rose only slightly, the decline in lamb prices was small. Bacon prices were higher than in 1955, reflecting a reduction of supplies in the United Kingdom. In North America prices were on the whole somewhat below 1955, and last autumn the United States Government purchased beef and pork for $ 31 million to assist producers in the period of heavy marketings. In Continental Europe, on the other hand, cattle and beef prices were very firm.

In the current year, the increase in world trade will probably be less than in 1956. In Europe no marked increases in exportable supplies are expected (except bacon in the main exporting countries). Argentina's exports will probably not rise much above last year's high level, unless domestic consumption is reduced by the increase in prices that may follow the removal of consumer subsidies. In Australia, however, exportable supplies may recover substantially.

As the growth of over-all meat supplies is expected to be moderate and demand to remain strong, the general levels of meat prices are not likely to change much in 1957, though there may be increases in some countries, as in the United States, where total meat production will probably be less than in 1956. In the United Kingdom, guaranteed prices for 1957/1958 for fat cattle, sheep and lambs were increased and for pigs left unchanged. Current supplies in the United Kingdom and other importing countries of Western Europe are at their highest postwar levels, mainly owing to a sharp increase in domestic production, and government policies continue to encourage domestic output to meet at least a major part of the expected increases in demand. In the next few years, Western Europe's import demand is thus likely to grow slowly, so that any sharp increase in export supplies, such as occurred last year in the case of beef, would cause substantial declines in world prices.

Dairy Products

World milk production is estimated to have shown a further small increase in 1956 and is now approximately one fifth above the 1934-1938 and 1948-52 averages. In most countries the

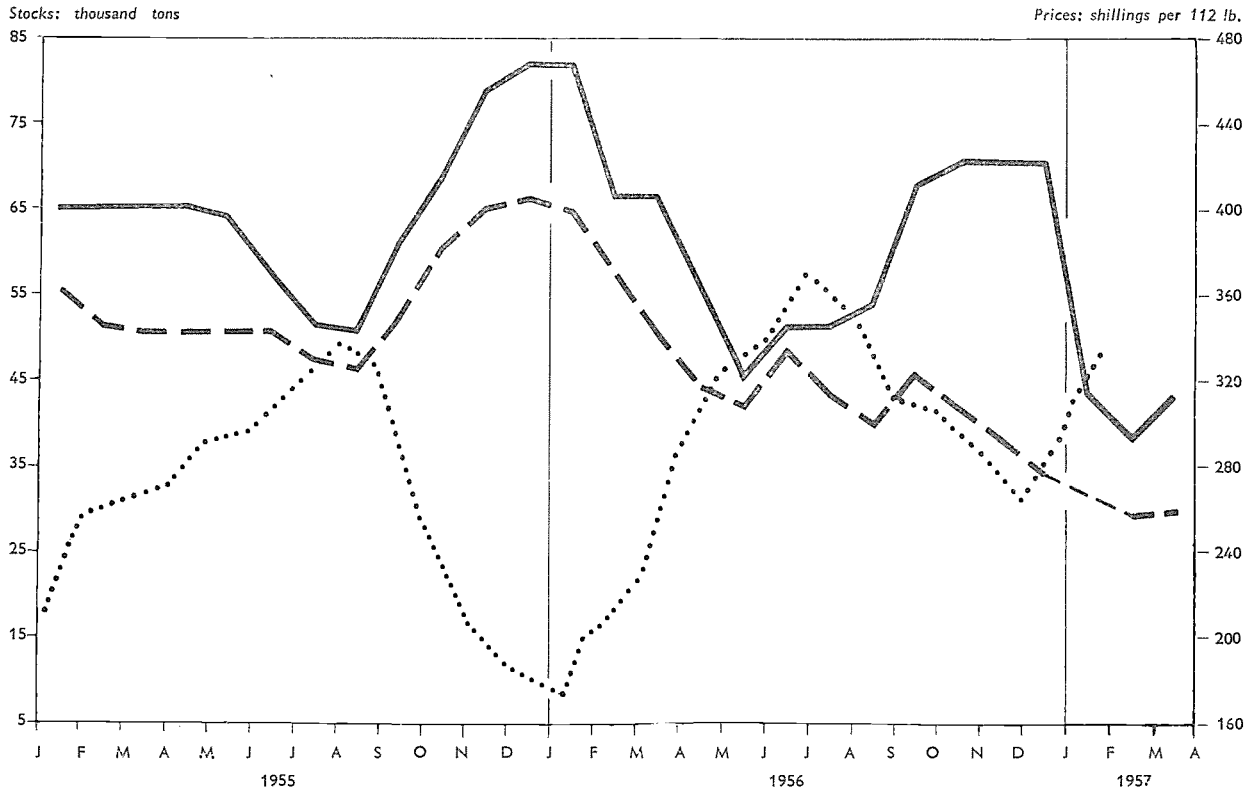
greater part of the increase came from higher yields rather than from increased numbers of cows in milk. It is expected that final figures will show world production of processed milks to have increased in 1956, with butter and cheese around the previous year's level. The milk utilization pattern generally remained stable, although a large increase in the U.S.S.R. butter production was reported and in exporting countries dependent on the London market some switch from butter to cheese production occurred.

Prices of butter in the London market fell heavily in the first part of 1956 and again later in the year and in early 1957. London cheese prices were relatively stable in 1956, but they too declined heavily in the first part of 1957. It is necessary to go back to the prewar period of free markets to find such violent price movements. The chief cause was the build-up of large stocks in the United Kingdom (see Figure II-10), reflecting the heavy exports from New Zealand and Australia.

Producer and consumer prices of dairy products in most countries were insulated from the price falls in international trade, and the average wholesale prices of butter in, for example, the United States, Western Germany, France and Australia were actually higher in 1956 than in 1955. In the United Kingdom, however, consumer prices were lower and the estimated disappearance of butter increased during 1956, while that of competing margarine fell slightly.

The volume of international trade in dairy products as a whole continued to increase in 1956. Commercial skim milk powder exports again showed the greatest increase in the group. Of the four leading exporters of butter, New Zealand is the only country whose exports surpass those of prewar and in 1956 its exports again increased substantially. The exports of Denmark and the Netherlands continued to decline in 1956, while Australian exports rose slightly. United States commercial exports, although much smaller than overseas donations, more than doubled in

FIGURE II-10. Stocks and Prices of Butter in the United Kingdom



Price of Danish butter, salted.

Price of New Zealand butter, finest salted.

Stocks of butter in public or government-owned cold stores. Prices are arithmetical averages of top weekly figures, London provision exchange.

TABLE II-16. INTERNATIONAL TRADE IN BUTTER

COUNTRY	Average 1934-38	1954	1955	1956 (preliminary)
	..... *Thousand metric tons*			
Major Exporters				
New Zealand	140.1	135.0	158.0	165.8
Australia	99.8	47.7	82.2	85.0
Denmark	149.1	141.1	129.3	120.7
Netherlands	49.7	52.0	44.5	31.6
United States	0.5	1.5	10.2	[1]23.0
Minor Exporters[2]				
Sweden, Argentina, Finland, France, Norway	48.9	36.0	28.1	51.7
TOTAL, above countries	488.1	413.3	452.3	477.8
Importing Countries				
United Kingdom	487.5	285.7	312.4	359.8
Germany, Western	...	13.3	33.1	34.6
France	1.7	1.3	7.2	17.1
Italy	1.0	6.4	5.8	9.9
Switzerland	0.9	2.0	5.9	6.1
Belgium	4.5	7.8	9.4	5.8
TOTAL, above countries	...	316.5	373.8	433.3

[1]Excluding overseas donations. Exports including donations were 103,000 tons in 1955 and 77,000 tons in 1956. — [2]Ranked according to relative importance in exports of butter in 1956.

1956, and shipments from minor exporters also rose. There was a rise of some 15 percent in United Kingdom imports and those of France and Italy increased very sharply (see Table II-16). Butter and cheese imports by the U.S.S.R. and Eastern Europe were smaller. Increased exports of cheese in 1956 were fairly evenly shared among the leading countries, New Zealand being the exception.

As a result of vigorous disposal policies, stocks held by the United States Commodity Credit Corporation (CCC) fell. Those of butter temporarily disappeared toward the end of 1956 and cheese stocks were halved. Despite record shipments, stocks of dried skim milk rose during the year, however, reflecting an increase in CCC purchases from 252,000 tons in 1955 to 372,000 tons in 1956.

The outlook for 1957 is for a further modest increase in world milk production. Lower producer prices in some countries will not significantly affect production this year, although milk utilization in exporting countries may show some switch from butter to cheese production. In countries where exports or imports play a major role, both producer and consumer prices can be expected to be at lower levels than in 1956. There will be a tendency in European exporting countries to rely to a greater extent on domestic markets. Consumption in general is likely to continue to rise in 1957.

Eggs

World egg production (excluding the U.S.S.R., Eastern Europe and China) in 1956 was about 55 percent above prewar. In recent years its growth has slowed down considerably and on the whole no substantial increases are expected in the near future.

World trade in eggs in the shell was only slightly higher than in 1955, but nearly 20 percent larger than before the war. Western Germany's imports rose 16 percent above 1955 and were over twice as large as five years before. Italy's imports also increased, but in the United Kingdom, owing to strongly increased home production, imports were reduced to one sixth of the prewar volume.

Following the heavy expansion of production last autumn and winter, particularly in the United Kingdom and the Netherlands, egg prices in Europe fell sharply. In the United Kingdom, the price guarantee for eggs for 1957/58 was reduced by the maximum possible under the long-term assurance announced last November, with a view to reducing production, which was subsidized in 1956/57 to the extent of £ 35 million. United States prices also declined in the second half of last year and the Government purchased 12,500 tons of eggs to lessen the pressure of large supplies on markets; in February 1957 the Government resumed egg purchases, because of the continued depressed level of prices.

While it is expected that the growth of imports into Western Germany will continue, United Kingdom imports in the current year may be insignificant. The prospects for a further expansion of world egg trade in the next few years are not favorable, although the situation may improve if the reduction of the United Kingdom guaranteed price results in a decline in domestic production.

Fishery Products

The 1956 world catch of fish, crustaceans and mollusks was about the same as in 1955. While several countries had record catches, they were

reduced in some others mainly because of declines in the abundance of fish. In most of those fisheries where there have been declines in recent years, there is optimism about the market for the preserved and processed products (because of improved natural abundance during early 1957 in certain of these fisheries) in view of comparatively low stocks for most commodities.

Fresh and Frozen Fish. In the fresh and frozen fish markets the most notable trend has been the continued expansion of the filleting industry. Exports to the United States from Canada, Iceland, Western Germany and Denmark have been strong, and it is also expected that Icelandic exports to the United Kingdom will show significant increases now that the Anglo-Icelandic fisheries dispute has been settled. Iceland's exports to the U.S.S.R. are expected to be maintained on high levels as a result of a new trade agreement operating from 1 January 1957. In the United States fishstick production has levelled off, but it is expected that the market for this commodity will be strong in future years as a result of improved quality and related control measures.

Dried, Salted and Smoked Fish. The outlook for dried, unsalted products prepared from cod and similar species appears to be satisfactory in both the West African and Italian markets. Sales of salted cod have been maintained, but difficulties are being experienced by Newfoundland producers as a result of high shipping costs to low-income countries in Southern Europe, especially in the face of strong competition from North European producers. Norwegian exports to Brazil, their most important market, have been satisfactory since currency control measures favored the soft-currency salt fish producers in comparison with Canada. Ceiling prices in Caribbean countries are somewhat limiting returns to producers.

Canned Fish. The canned salmon pack, both in Canada and the United States, was very low, but the Japanese output increased by 12 percent as a result of intensified fishing operations. Record United States output of canned tuna caused no great concern as a result of the establishment of this product as an important foodstuff on the American market. Generally speaking, canned fish markets for all types of fish, crustaceans and mollusks appear to be firm and demand satisfactory, with stocks at low levels as a result of declines in the output of some producers due to shortage of fish on the grounds. Rising costs are the main problem.

Fishmeal. Due to the highest-ever catch of menhaden in the United States the production of fishmeal was maintained, even though the pilchard catch in California was halved. In South Africa the small catch of pilchard and maasbanker decreased production of fishmeal, but this was partially compensated by improved reduction methods due to stickwater plants and by good catches off Walvis Bay in South West Africa. In Angola fishmeal output reached new heights as a result of the best catch on record. The Pacific herring fisheries of Canada also reached a new record.

In most countries the demand for fishmeal as food for livestock remained strong and the price has been maintained at very satisfactory levels. The outlook for 1957 appears to be favorable for most producers, in particular because of the reduced winter herring catch off Norway in the season ending in early April 1957, which amounted to only 8.5 million hectoliters, compared with 12.3 million in the previous season.

Fats, Oils and Oilseeds

The upward trend in world fats and oils production continued in 1956, and output outside the U.S.S.R. rose to more than 25 million tons (oil equivalent). Since 1952, the rate of increase (excluding olive oil) has been from 2.5 to 3.5 percent each year, and some further increase is likely in 1957. The olive harvest was well below average in 1955/56, but there were heavier groundnut, soybean and sunflower crops and larger output of copra, palm oil, palm kernels and lard. Production of cottonseed and tallow remained high. Preliminary information on 1957 supplies suggests that reductions in the world output of cottonseed oil and animal slaughter fats will be more than offset by increases in groundnut, soybean, olive and linseed oils, and that the output of copra and sunflowerseed will not decline.

Production expansion has permitted a modest increase in world consumption per person. By the end of 1955, consumption (food and non-food) recovered to the 1934-38 average level of 11 kilograms per person, while by the end of 1956 a moderate improvement over this figure was achieved (see Table II-17). However, the development of substitutes for fats and oils in

TABLE II-17. WORLD INDIGENOUS PRODUCTION, BALANCE OF TRADE AND CONSUMPTION OF ALL FATS AND OILS, AVERAGE 1955-56 WITH COMPARISONS

REGION	Indigenous Production			Balance of Imports (+) or Exports (—)			Total Apparent Consumption[1]			Apparent Consumption Per Caput[1]		
	1934-38	1948-52	1955-56	1934-38	1948-52	1955-56	1934-38	1948-52	1955-56	1934-38	1948-52	1955-56
	Million metric tons									*Kilograms*		
Western Europe	3.1	3.1	3.5	+ 3.4	+ 3.0	+ 4.0	6.5	6.1	7.4	23.6	20.0	23.5
North America	3.2	5.5	6.9	+ 0.9	— 0.3	— 1.6	4.1	5.2	5.3	29.3	31.6	29.0
Latin America	1.5	1.7	1.8	— 0.6	— 0.2	+ 0.1	0.9	1.5	1.9	7.5	9.2	10.3
Africa	1.8	2.1	2.4	— 0.9	— 1.0	— 1.4	0.9	1.1	1.1	5.1	5.4	4.6
Asia[2]	4.2	4.3	4.9	— 1.4	— 1.0	— 1.0	2.8	3.3	3.9	4.1	4.1	4.4
Oceania	0.6	0.6	0.7	— 0.3	— 0.3	— 0.4	0.3	0.2	0.3	22.4	18.6	19.1
Antarctic	0.4	0.3	0.3	— 0.4	— 0.3	— 0.3	—	—	—	—	—	—
Undistributed above[3]	0.2	0.3	0.3	—	—	—	0.2	0.3	0.3	—	—	—
WORLD (excluding U.S.S.R., Eastern Europe and China)	15.0	17.9	20.8	+ [4]0.7	— [4]0.2	— [4]0.7	15.7	17.7	20.1	11.0	10.6	11.2

[1]No allowance for changes in stocks. — [2]Excluding U.S.S.R., and China. — [3]Rough estimates for output from minor oilseeds. — [4]Net import or export balances with U.S.S.R., Eastern Europe and China taken as a group and differences in quantities in transit at the beginning and end of the period.

the manufacture of inedible products has arrested growth in the total use of fats and oils in the importing regions with high fat consumption, and the greatest increase has occurred in the underdeveloped producing regions, where, however, consumption is still very low.

The proportion of world production traded internationally has tended to increase slowly in recent years and in 1956 reached nearly 30 percent. Exports rose to 7.2 million tons, in terms of oil, 4 percent above 1955. The 1956 trade in "soft" oils and oilseeds rose to 2.3 million tons (oil equivalent), over 1 million tons greater than the average for 1950-52. The main markets remain Western Europe, Japan and, for "hard" oils, North America; 1956 was characterized by the continued growth of North American shipments and the high level of African shipments. Asian indigenous exports expanded to 2 million tons, but were still well below prewar levels, and Latin-American exports continued to fall.

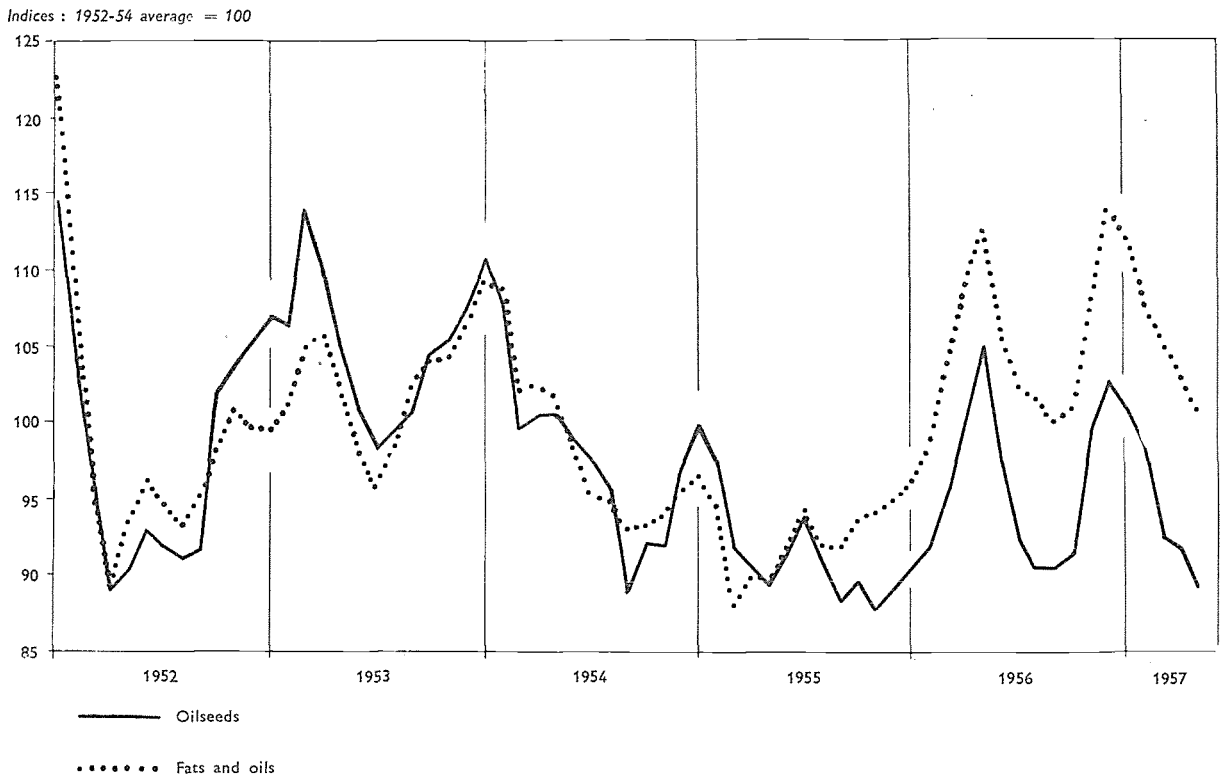
International market prices of drying and liquid edible oils have been exceptionally unstable since the beginning of 1956, while other commodities were affected more moderately. The FAO index of oils and fats prices (see Figure II-11) moved from 96 to 112 in the first five months of 1956 (1952-54 = 100). Import demand was unusually heavy in countries facing deficits in domestic production, and the volume of trading in the United States was stimulated by government export programs. When this activity slackened and the prospect of good 1956/57 crops became more certain, international prices declined sharply. During the last quarter of 1956 pronounced increases again occurred, reflecting the Suez crisis, but by March 1957 prices had generally declined to about the same point as a year previously.

World exports remain large in 1957, reflecting higher output in the United States, Mediterranean countries, Argentina and West Africa, as well as lower beginning stocks in importing countries. United States carry-over stocks are likely to rise this year and production to remain large in 1957/58. However, although prices this year are unlikely to return to levels reached in 1956, barring unforeseen events, international demand is expected to be sufficiently strong for prices to retain some of the gains made last year.

Fresh Fruit

The international citrus market in 1956/57 was greatly affected by the severe frost damage in Spain early in 1956. Preliminary indications of Spanish orange production in 1956/57 range between 500,000 and 700,000 tons, against an average of 1,100,000 tons in 1953/54 - 1955/56, and damage to trees is likely to keep production well below average at least for the next two seasons. The 1956/57 output of winter oranges in other Mediterranean countries is expected to exceed that of the previous season, except in Italy, but total Mediterranean production may be at least 10 percent lower than

FIGURE II-11. Indices of International Market Prices of Fats and Oils (excluding Butter) and Oilseeds



the previous season, when production was also affected by the frost damage to the Spanish crop. Therefore, although United States output is expected to set a new record, demand may be strengthened for early shipments of summer oranges from the Union of South Africa and Brazil in 1957.

The fear of surpluses of citrus has abated for the present, but the rate of new plantings of oranges indicates that severe marketing or price problems may occur in the future. A sharp increase in the output of summer oranges in Brazil is expected from 1958 as a result of extensive plantings in 1953-55 while the 1955 citrus census in the Union of South Africa shows a 50 percent increase since 1950 in the number of trees in orchards producing for export.

The production of table apples rose sharply in 1956 from the low 1955 level, while world output of pears was lower. In Western Europe the table apple crop was the largest ever recorded, but European exports decreased. Within the framework of OEEC, efforts are being made to induce importing countries to relax their restrictions on imports of apples and pears outside the main marketing season for domestic supplies.

Together with the long-term increase in supplies of citrus fruit and the steady increase of banana imports into Western Europe, the upward trend in the output of apples and pears makes the question of Europe's fruit-consuming capacity in the next decade extremely important for the fruit industry. Per caput consumption in most European countries has increased substantially above the prewar level as a result of higher incomes and better understanding of the nutritive value of fruit. With further increases in incomes, consumer expenditure on fruit is more likely to expand than the quantities purchased, as the consumer may demand better quality and service and less common types of fruit. The efforts being made to improve quality, grading and packing are thus of the utmost importance.

Dried Fruit and Wine

The raisin market in 1956/57 was affected by the Turkish bumper crop of sultanas, but Government support measures kept prices relatively high. The season opened with no carry-overs in exporting or importing countries and the United States and Australian crops were

smaller than in 1955. The United States price stabilization pools were entirely disbanded in early 1957 as farm prices exceeded parity. However, both Greece and Turkey are expected to carry over stocks at the end of the 1956/57 season. Turkish minimum export prices were maintained, although a special agreement at reduced prices was made with the United Kingdom to help move the large crop. Greece also maintained prices by various stabilization measures. No export subsidies have been paid for United States raisins in the last two seasons. Greek output of currants, Turkish output of figs and United States prune production were high in 1956, but Iraq's date production was unusually low and there will be no date surplus at the end of the 1956/57 season.

World wine production in 1956 was only slightly lower than in 1955, but output in France, Germany and Austria was greatly affected by the frost damage in early 1956. France terminated minimum prices to producers as wholesale prices increased, and the payment of export premiums continued. The distillation of surplus stocks was sharply reduced, but stocks remain high in spite of larger consumption and expanded exports. Italy, which had a larger output in 1956, has also expanded exports, but Italian wholesale prices have weakened since late 1956. Germany and Austria increased imports in 1956/57 to compensate for their low domestic output. Frost damage in France again this spring may affect 1957 output. Much progress was achieved in the implementation of the French long-term adjustment program, including voluntary uprooting against payment of indemnity, and classification of the country into those districts suitable for viticulture and those recommended for conversion to other crops.

With the exception of traditional wine-growing regions where per caput consumption is already very high, wine consumption is slowly increasing in exporting and importing countries, probably reflecting higher incomes. There is no similar trend in the consumption of dried fruit, which at best is maintained at its recent levels.

Cocoa

The year 1957 may prove an important turning-point for the world cocoa economy, which during the previous few years had been in a deep crisis. The long-term trend toward higher consumption was drastically reversed in 1954 by an extremely sharp rise in prices (10 to 12 times above the prewar average) following a fall in production. Research on and the use of substitutes and the development of other manufacturing techniques to reduce use of cocoa beans was stimulated. Consumption continued to fall long after production had begun to recover, and prices declined almost continuously, placing considerable strains on the economies of important producing countries. Both production and consumption have now again increased sharply, however, and a new equilibrium has begun to emerge.

Production improved in 1954/55 and 1955/56, but it was not until the great rise in 1956/57 (from 848,000 to 925,000 tons, or about 125,000 tons more than in the highest prewar year) that consuming interests began to contemplate the possibility of a definite change in the long-term production outlook. The greatest increases took place in Ghana, Nigeria and Brazil, but production also rose in Asia and Oceania. While favorable weather conditions contributed significantly, especially in Ghana and Nigeria, in some countries the coming into production of new plantings has begun to make itself felt, and in others improved cultivation practices, and especially disease control, have been major factors.

The long-term significance of the improvement in consumption may prove at least as great as that of the production expansion. In 1955 consumption fell sharply to about 725,000 tons, the lowest level since the end of international allocations. The steady fall in prices during 1955 and the following year stimulated some consumption increases, but they were comparatively small, especially in the largest consuming countries. Only since the last part of 1956, and especially in 1957, has there emerged a real change of trend that is likely to be maintained. In 1957, notwithstanding the development of various industrial techniques for substantial economies in the use of cocoa beans, consumption may possibly reach 880,000 tons - about 20 percent more than in 1955.

Despite the unprecedented level of production, this vigorous growth of consumption finally reversed the long downward price movement which began in August 1954. Indeed, there are indications that, unless production again increases very sharply in 1957/58, the bottom of the price recession may have been passed. If

a period of relatively gradual expansion of both production and consumption is beginning, prices might in the future fluctuate less violently around a range of 25 to 30 U.S. cents per lb., which would be considered equitable by producers and would probably help to stimulate further expansion in consumption. It is by no means certain, however, that production will continue to rise by even 3 to 4 percent a year, in spite of reports from some producing countries of a world production of a million tons in the very near future. On the other hand, for the first time since the war, comprehensive programs have been begun to stimulate consumer demand, while studies of long-term price and income effects suggest that the world could absorb at relatively favorable prices a significantly larger production than that of the current year, provided the year-to-year increases are gradual and steady.

Coffee

World coffee production in 1956/57 is estimated at about 2.5 million tons, a decline of 10 percent from the 1955/56 record output. While a reduction had been foreseen ever since Brazil's new producing regions were damaged by frost in 1955, a further contributory factor was the lower output in the main French and British African territories. These reductions were partly offset by a modest rise in Asian production and larger crops of mild coffees in Central America.

Demand was stronger in the principal world markets. Total world imports in 1956 are provisionally placed at 2.2 million tons or almost 10 percent above 1955. United States imports in 1956 rose by 8 percent to nearly 1.3 million tons, though they remained below the record imports of 1949, and a large part of the increase has probably been consumed. Though about 17 percent higher than in the prewar period, United States per caput consumption has still not caught up with the peak years 1947-49. Imports into Europe, at about 750-760,000 tons, were some 15 percent above 1955, though part of the increase is likely to have gone into stocks at the time of the Suez crisis.

The sustained trade activity during 1956 made it possible for producing countries to dispose of part of their carry-over stocks. Exports from Brazil amounted to more than a million tons, and were the largest since 1949; if, as seems likely, exports continue at the same rate during the remainder of the crop year, carry-over stocks will have run very low. The Government-held Brazilian stocks of about 220,000 tons (reported to include inferior quality coffees) will not enter regular market channels, according to official declarations, unless a shortage of coffee develops.

The reduction in available supplies combined with the pressure of demand kept coffee prices steady at a comparatively high level. The price of the Brazilian standard quality Santos 4 rose slightly during the year, averaging 58.1 cents per pound, 2 percent higher than in 1955. The exceptionally wide margin which had developed during 1956 between the price of Santos 4 and of better quality milds narrowed steadily after October, however, as larger supplies of mild coffees came forward. Various price support measures, and the efforts of the governments of the Central American and some other Latin-American countries to support mild coffee prices, further contributed to the strength of the market.

Until the end of the summer, when the 1957 Brazilian crop will be available on world markets, no fundamental change is likely in the present rather balanced demand and supply situation and prices can be expected to remain firm. If, however, the Brazilian crop turns out as large as some forecasts indicate, a decline in prices might follow. Consumption in overseas markets is likely to continue the upward trend, but in both producing and importing countries the expansion in consumption, which has been affected by prices during the last few years, will probably be comparatively gradual.

Tea

The apprehension of a surplus of production over consumption which was prevalent in the early part of 1956 caused the North Indian Growers' Association to end the plucking season earlier than usual. Nevertheless, the total Indian crop turned out as large as that of 1955. Slightly lower output in Ceylon, due to drought and frost, and a further reduction in the Indonesian crop were offest by larger production in Pakistan, Japan and Africa, and world production (excluding China and the U.R.S.S.) is estimated to exceed slightly the 675,000 tons produced in 1955.

Demand was strong in the main export markets and domestic consumption was rising in

producing countries in 1956. Exports from India, mainly to the United Kingdom, were 42 percent more than in 1955, but the export unit value for Indian tea was about 20 percent lower. Larger exports from Indonesia, Pakistan and Africa more than balanced smaller shipments from Japan, Taiwan and Ceylon, and total exports from producing countries were about 510,000 tons or almost 20 percent higher than in 1955. Imports into the United Kingdom, the Dominions and the Netherlands rose, whereas United States imports declined for the second successive year. Domestic consumption in India was evaluated in 1956 at almost 96,000 tons, 18,000 tons more than in the preceding year. Consumption in Pakistan absorbed about 60 percent of total output, and rising internal demand in Japan, made less tea available for export.

Tea prices remained generally steady in 1956, although the margin between common and quality teas widened, at times very considerably. The large Indian crop, inflated by heavy carry-over stocks, tended to depress prices at the Calcutta auctions in the first half of the year, but the Suez crisis was reflected in a strong price rise at the London auctions. The delay in shipping, coupled with declining stocks and heavy buying down to the retail level, raised London prices in the last quarter by 37 percent over the levels of the preceding nine months. With more normal shipping conditions in the first months of 1957 and heavy arrivals, prices in London began to decline from January to March and in the past few months the price differential between London and Far Eastern auctions has almost disappeared. Selective buying may result in a weaker trend for all but high quality teas, until consumers' stocks have been worked off. Later in the year, however, markets for the new crops will be strengthened by the absence of large carry-over stocks in producing countries. It is as yet too early to give an estimate of the 1957 crop, but the long-term trend points upward. In view of rising production costs in the Far Eastern countries and steadily growing competition from lower priced African tea, the problems of raising yields and improving quality become more pressing.

Tobacco

World tobacco production was slightly higher than in 1955, reaching a new record level. United States output decreased slightly, but this was offset by larger output elsewhere, especially in Rhodesia and Canada. Output of oriental type cigarette leaf in the main exporting countries decreased about 12 percent, mainly due to unfavorable weather in Greece and Yugoslavia.

Exports of cigarette tobacco in 1955/56 were about 12 percent larger than in 1954/55 and total leaf exports rose 9 percent. United States exports were the largest since 1946/47, mainly because of special export sales for foreign currencies (about 12 percent was shipped under P. L. 480 in 1956), but exports are expected to be nearly 10 percent lower in 1956/57. Exports from Rhodesia and India rose in 1956, while those of Canada reflected the low 1955 output.

Prices obtained at the United States auctions in 1956 for flue-cured leaf were slightly lower, but for Burley were the highest on record. Of flue-cured leaf output, 22.5 percent was placed under Government loans, the largest proportion ever reached. Rhodesian auction prices in 1956 were low, but oriental leaf prices rose further. Prices at the Rhodesia auctions recovered in March 1957, reflecting a reduction in output and improved quality.

Supplies in exporting countries remain large, and an increase in working stocks in importing countries is reported, especially in the United Kingdom. Total United States stocks at the end of 1956/57 will exceed last year's record level and Canadian stocks may also rise, following the very large crop. In 1957, however, United States output will be reduced substantially. Acreage allotments for flue-cured plantings in 1957 were lowered by 20 percent to 289 thousand hectares, but actual plantings are expected to be only 269 thousand hectares, 24 percent below the harvested area in 1956, mainly because of the Soil Bank. The total area may be 17 percent below 1956 and the smallest in nearly a half century.

Although the long-term outlook for demand is good, the tobacco industry is facing a number of adjustment problems. Relatively high prices in some major exporting countries have stimulated production and created surplus stocks. New production techniques and the shift in demand toward filter-tip cigarettes have reduced cigarette manufacturers' requirements of raw leaf per unit of product and this reduction has not been fully offset by the increase in number of units sold.

of fiber accumulated and exports were resumed in mid-1956.

Hard fiber production is likely to increase further in 1957, but the increase seems likely to be much less than last year. Consumption prospects are favorable. A continued strong demand for marine ropes should ensure a firm market for abaca and, if crops are better this year, there should also be a good demand for the twine fibers, sisal and henequen. The return to a surplus situation in Mexican henequen may, however, serve to check any substantial recovery in sisal prices.

Rubber

Production of natural rubber declined slightly from the 1955 peak. With lower prices, smallholders tapped less in Indonesia and Malaya, but on Malayan estates, where replanting with higher yielding materials has long been in operation, and in Ceylon and elsewhere in South-East Asia, production was well maintained or increased. In contrast to natural rubber, the output of the synthetic product increased by about 10 percent.

After a marked expansion in the previous year, world consumption of natural and synthetic rubber was levelling off in 1956, principally as a result of a recession in the United States, which consumes about half the world total. At about 3 million tons, however, world consumption was 25 percent larger than five years ago, the expansion over this period being somewhat less marked in natural than in synthetic rubber.

Despite the increasing use of synthetic rubber, consumption of natural rubber exceeded the volume of production in 1956. At the end of the year stocks in producing countries were slightly larger, but this increase was more than offset by a reduction in stocks afloat and in consuming countries. The over-all stock was still somewhat larger than five years earlier, but since expansion in consumption has been so marked, stocks now represent only 5½ months' consumption as compared with 6 ¾ months' five years ago.

The price of natural rubber at the beginning of 1956 was at the highest point since the Korean boom period. With more immediate consumption prospects somewhat less favorable, however, prices declined continuously until mid-year. Thereafter trade became influenced by uncertainty of supply and advancing freight rates as a result of the Suez crisis. A fluctuating advance occurred in the second half of 1956, but was followed by a recession in the early months of 1957.

The expanding requirements of road and air transport and newer uses in roads, furniture, etc., indicate a favorable long-term outlook for rubber, but the widely varying volume of automobile production affects more immediate prospects. Recovery in United States and United Kingdom production from the 1956 recession now appears to be in prospect and, if consumption in other regions and other uses is maintained, total requirements in 1957/58 may show a sizeable advance. At the same time new synthetic rubber production capacity is scheduled to grow rapidly in the United States in 1957 and, further ahead, in the United Kingdom and other countries. This might stem a price advance, such as has produced expansion in smallholders' output of natural rubber in the past, and lead to some change in the direction of exports.

Forest Products

Roundwood. World production of roundwood increased only slightly in 1956, industrial roundwood rising by some 2 percent and fuelwood changing very little. In Europe and North America the output of sawlogs fell noticeably, while pulpwood production rose; in other regions both sawlogs and pulpwood showed small increases.

The 5 percent increase in world output of pulpwood and pitprops, which reached the record level of 216 million cubic meters, was due entirely to rising pulpwood output. International trade in pulpwood, however, was smaller in 1956, because domestic supplies in many importing countries had increased and because rising needs were met to some extent from stocks. For 1957, the prospects are for a further increase in pulpwood production and trade. Much new wood pulp capacity in importing countries is based primarily on non-coniferous pulpwood, the production of which is tending to increase more rapidly than that of coniferous pulpwood. Trade in pitprops, chiefly within Europe, fell by 3 percent in 1956, with the continuing tendency to reduce requirements per ton of coal and to rely increasingly on domestic sources.

International prices of both pitprops and pulpwood have changed little for the past three years, and the opening of the 1957 marketing

TABLE II-18. FOREST PRODUCTS: WORLD PRODUCTION AND TRADE, 1953-56

PRODUCT		1953	1954	1955	1956 (preliminary)
		Million cubic meters			
Roundwood	Production	1 370	1 424	1 465	1 490
	Exports	16.3	18.9	24.3	23.8
Sawnwood	Production	265.4	277.3	296.6	296.1
	Exports	26.0	30.9	34.6	31.7
Plywood	Production	8.4	8.9	10.4	10.6
	Exports	0.5	0.8	1.0	0.9
		Million metric tons			
Wood pulp	Production	38.4	41.9	46.1	48.9
	Exports	5.9	6.8	7.6	8.0
Newsprint	Production	10.1	10.5	11.5	12.1
	Exports	5.9	6.2	6.6	7.0
Other paper and paperboard	Production	38.3	40.6	44.9	46.5
	Exports	2.2	2.8	3.1	3.3

season in Europe confirmed this stability. Fluctuation in c.i.f. values have been primarily due to freight rates.

Sawnwood. The steady postwar increase in world sawnwood production was halted for the first time in 1956, output declining to about 296.1 million cubic meters from 296.6 million in 1955. Increases in the Soviet Union and Asia (particularly in Japan) were insufficient to offset reductions of almost 4 percent in Europe and North America. In Europe, where total consumption of sawnwood had hitherto risen slightly in spite of a gradual decline in per unit consumption, the slackening in industrial expansion in 1956 decreased requirements, while there was also some downward adjustment of stocks. In North America the decline in United States building activity reduced demand for both United States and Canadian sawnwood. United States output decreased by only 4 percent compared with a 7 percent fall in consumption, and stocks at the mills rose by as much as 13 percent during 1956. Canadian production was also affected by lower sales to Europe and other overseas markets, caused by high ocean freight rates.

World trade in sawnwood thus dropped from 34.6 million cubic meters in 1955 to 31.7 million cubic meters. There was a general weakening in international export price quotations in Europe in the spring of 1956, but toward the end of the year there was a slight recovery which has since been maintained. In North America the prices of most categories of sawnwood were somewhat higher during the first half of 1956, but as reduced consumer demand became more pronounced, prices tended in general to weaken toward the end of the year and in early 1957. In Latin America and Asia, on the other hand, prices of almost all categories of sawnwood have continued to rise.

World consumption of sawnwood probably increased somewhat in 1956, but it seems clear that in both Europe and North America it has reached a level which will rise only slowly, if at all. New wood-based materials, such as particle boards, production of which has increased exceptionally rapidly in the past two years, will no doubt provide an important supplement to the various cheaper competing materials which have already made serious inroads into many of the traditional sawnwood markets in Europe and North America.

Wood pulp. The steady postwar expansion of world wood pulp production continued in 1956 with an increase of 6 percent. The greatest increases were in Northern Europe, North America and in Japan, where the spectacular postwar expansion continued. Mill capacity in Europe expanded even more than output, and plans for new capacity indicate the continuation of the present rate of growth for some years. In North America capacity was only about 5 percent higher than actual production in 1956, but almost 4 million tons of new capacity is now under construction, and further substantial in-

Cotton

World production outside the U.S.S.R. and China, which had shown a very mild tendency to increase over the past few years, turned downward in 1956/57. In the United States, restriction on acreages was on the severest scale, the Soil Bank had some effect, yields dropped slightly and the total crop was reduced by 350 thousand tons to 2.9 million tons. Elsewhere, production fell by 1 million tons to 3.4 million tons. With lower prices, plantings in Latin America, notably Mexico, have been considerably reduced. Plantings in Egypt were more severely restricted in 1956/57 and a slight recovery in yields will not prevent some reduction in the crop. In Africa, the Near East and Asia, the area in cotton tends to be maintained or, as in India, to expand, and production is expected to be larger.

World consumption has been increasing steadily over the past five years and there is evidence of a further advance in 1956/57. In the United States there is no apparent increase and in Western Europe the upward trend is rather slight, although it was probably given impetus by the reduction in international cotton prices. In other regions, however, particularly producing countries where prices have been continuously below the international level and elsewhere in the East, notably Japan, where relatively low wages favor conversion costs, the marked expansion in cotton consumption continues.

With fiber consumption trends generally upward and stocks of cotton in importing countries reduced, the disposal of United States government surpluses at prices some 20 percent below the level at which they had been acquired has set in motion a marked expansion in international trade. World exports (excluding the U.S.S.R. and China) totalled 2.5 million tons last season, of which countries other than the United States accounted for 2.0 million tons. A total volume of over 2.9 million tons seems quite possible in 1956/57. At least 1.5 million tons will be accounted for by United States surpluses, however, and a sharp reduction in shipments from other countries is to be expected. As production has been reduced in some countries, while domestic consumption is on the increase and outlets in the U.S.S.R., China and Eastern Europe appear to be expanding, stock additions outside the United States may not be too serious.

In the United States and in the world as a whole, however, the carry-over is expected to be smaller at the end of the 1956/57 season and a further contraction appears possible in 1957/58. The United States support price may be reduced from 82½ to a minimum of 77 percent of parity in 1957/58. Moreover, with acreage restrictions continuing and farmers reserving under the Soil Bank Program about 1.2 million hectares of their allotments, plantings have dropped to 5.7 million hectares, which, at current yields, would produce 2.54 million tons, 330,000 tons less than in 1956/57. In other exporting countries the disincentive of lower export prices, where not offset by reduced export taxes, may continue to hold production down. Consumption should continue its upward course, possibly reinforced in importing countries where the cotton/rayon price relationship has improved. Since the stock replacement demand may have been largely exhausted, however, import requirements may not hold at the current high level. In this case the release of Unites States cotton surpluses, which is scheduled to continue in 1957/58, will require skillful handling if it is to avoid undue pressure on cotton markets.

Wool

The world wool clip is estimated to be again slightly larger in 1956/57 at 1.29 million tons (clean basis). Over the last ten seasons, production has increased by 30 percent. The increase has been relatively rapid in the southern Commonwealth countries, but in South America production has fallen by 10 percent in this period as a result of a decline in the Argentine clip, and in the rest of the world the average rate of growth has been only about 1 percent per annum.

Wool consumption increased to a record volume of 1.28 million tons in 1956, the expansion being especially notable in the United States where competition from synthetic fibers is relatively intense. This rate of consumption was, however, only made possible by some running down of both commercial and governmental stocks. Thus wool has been sold on a rising market, even though prices remain a little below the levels ruling three or four years previously.

The demand for wool textiles should be well maintained. There is little to suggest that wool consumption by industry in 1957 will be much different from last year and, with commercial stocks dwindling, especially in relation to the

higher volume of consumption in recent years, demand for wool may outstrip production. Limited releases from government stocks are, however, in prospect. In the United States, the CCC holdings of domestic wool had already been reduced to 13,000 tons at the beginning of 1957 and releases were scheduled at the rate of 1,250 tons per month. The United Kingdom proposes to release a further 8,000 tons from the strategic stockpile (estimated at 42,000 tons in mid-1956) in the 12 months beginning April 1957. In general, the use of a greater proportion of materials other than virgin wool and competition from man-made fibers would serve eventually to correct any further substantial rise in wool prices.

Jute

The 1956/57 jute crop in Pakistan and India is estimated at 2 million tons, much the same as in the previous season. Larger areas were sown in both countries, but growing and harvesting conditions were relatively unfavorable. Consumption has been rising in the last four years and is now running at a rate of about 2 million tons a year, so that production this season is probably just about adequate to meet current requirements. Nevertheless, prices advanced by as much as 40 percent in the first half of the season. The movement of the Pakistani crop was impeded by the disorganization in internal rail transport caused by heavy imports of rice, but most of the price rise took place in November and December after the closing of the Suez Canal.

As a result of the resealing of 12½ percent of the looms, Indian consumption has been reduced slightly and may amount to 1.1 million tons in 1956/57. Pakistani consumption has been increasing and has reached a rate of 200,000 tons a year. In Europe and elsewhere consumption, mostly for domestic requirements, has been well maintained. There is, however, intense competition in the international jute goods market where prices have not followed the advance in raw jute prices.

It seems possible that rather more jute will be grown in 1957/58, especially if the rice supply situation improves in Pakistan, where the licensed jute acreage has been increased by 10 percent. In India the high import price of raw jute in relation to jute goods prices has focussed attention on the prospects for increasing local production, particularly by improving yields through more extensive use of better seeds, fertilizers, etc. At the same time, the running down of stocks of jute goods in Indian mills holds the promise of a recovery in raw jute consumption. There is at present no sign of recession elsewhere and stocks of raw jute are not believed to be excessive.

The state of the raw jute market in 1957/58 therefore will depend as usual mainly on the outcome of the crop. In view of the instability which characterizes the jute market it is worth noting that, under the Indo-Pakistani trade agreement signed in January 1957, India will give advance notice of import requirements, while a proposal for a government-sponsored Jute Marketing Corporation is under consideration in Pakistan.

Hard Fibers

Total production of hard fibers continues to expand, increasing by nearly 10 percent in 1956 to about 820,000 metric tons. The increase occurred in all major fibers, abaca, sisal and henequen. A 15 percent increase in Philippine abaca production more than offset a cutback on the Central American estates operated on behalf of the United States government, but a strong demand for rope from the shipping industry ensured a very firm market. The larger output occurred entirely in the non-Davao (mainly hand-stripped) grades. The price of Davao fiber advanced twice as much as non-Davao fiber.

In spite of reduced requirements of farm twines and a smaller consumption of padding fibers in automobile upholstery, more sisal was imported into North America in 1956 than in 1955, due to the total ban on henequen exports from Mexico in the first half of the year, and the narrowing of the price spread between sisal and henequen. The demand for farm twines in some European countries, particularly for baling hay, was below normal due to the bad weather. In total, sisal production was slightly in excess of the offtake and prices declined by 10 percent in the course of the year. Sales from a rapidly expanding production in Brazil at comparatively low prices (assisted by the devaluation of the "sisal cruzeiro" in July) continue to be an important influence on the market. In henequen, a 15 percent increase in production coincided with a fall in Mexican cordage exports to the United States. Stocks

creases are scheduled for 1958 and 1959, while there is a possibility of an additional 3 million tons in 1960.

Per caput paper consumption in the United States rose slightly in 1956, but the rate of increase is clearly slackening and no major change in United States paper and board production is envisaged for 1957. The main result of the substantial rise in North American wood pulp capacity has been a marked increase in the region's exports of wood pulp and, to some extent, also of paper. Europe, formerly a net exporter, has in fact increasingly become a net importer of wood pulp and pulp products, chiefly of North American origin. In other regions, with the exception of Japan, the wood pulp industry remains small, although percentage increases have been quite considerable.

World trade in wood pulp showed a further increase in 1956, the main features of the year being a rise in trade within Europe, the maintenance of Europe's exports at the 1955 level, and a noticeable increase in North American exports. Prices on both international and domestic markets have in general remained remarkably firm, except for minor adjustments for certain grades, and no change in wood pulp prices is expected in 1957.

Newsprint. World production of newsprint increased by almost 8 percent in 1956 and reached a new record level. Canada, the world's largest producer, accounted for almost half the increase, but the output of most other producers also increased considerably. World capacity in newsprint production rose by about 6 percent, compared with an increase of 5 percent in 1955, and a further rise of almost 9 percent is foreseen for 1957.

World trade in newsprint rose by almost 6 percent in 1956 and prices generally remained very firm. Canadian mill prices declined gradually during the year and United States prices did not change much. An increase, initiated by the Canadian producers and followed by the United States, Finland and the United Kingdom, took place, however, in prices of newsprint delivered overseas, primarily because of rising freight rates.

The increase in consumption in 1956 was somewhat smaller than in production, mainly because of the replenishment of United States consumers' stocks which had become depleted in 1955. Prospects for world newsprint production and trade in 1957 appear very favorable indeed, and consumption should continue to rise. Further capacity increases are either under construction or scheduled in most countries.

Chapter III - FACTORS INFLUENCING THE TREND OF FOOD CONSUMPTION

INTRODUCTION

A number of things have contributed to the growing interest, evident in the past few decades, in determining the factors which influence the consumption of food. Most important, perhaps, is the emergence of nutritional science and the realization that human health requires not only a sufficient diet, but also a properly balanced diet. A second factor has been the growth of large-scale enterprises for the processing and distribution of food, including private companies, producers' marketing organizations and government agencies. Like other large enterprises, these must be well informed of likely changes and trends in the demand for their products if they are to conduct their business efficiently. The widespread adoption of some degree of planning for economic development is a third important influence. It is important to be able to foresee fairly accurately, and to make provision for, the increased demand for foodstuffs which accompanies economic development in order to avoid on the one hand the inflationary strains when demand outruns supplies and, on the other, the surpluses when supplies exceed demand. Conversely, it is important to judge what level of investment is feasible at a given level of food supplies without engendering inflationary pressures. These last considerations are particularly important in economically underdeveloped countries where food commonly accounts for more than half the total consumers' expenditure.

The purpose of this chapter is to review briefly the main information available in this field and to see what general conclusions may be drawn as a result, particularly, of experience since the war. The whole subject is complex and such a review inevitably reveals large and important gaps in present knowledge. To identify such gaps can in itself, however, be useful.

In this section, a brief review is given of the general background and of some of the main developments since World War II. Subsequent sections deal in turn with some of the more important factors influencing food consumption.

The principal factors which determine the pattern and level of food consumption in any group have, of course, long been known in a general way. Probably the most important is tradition. Most people tend to be conservative in their eating habits and prefer the foods to which they are accustomed. Very largely, this still means the foods which lay to hand or were readily produced in the area where a people first settled : for example, rice in tropical river valleys ; millets and sorghums in arid areas ; barley, wheat, rye and oats in progressively colder and more humid climates ; meat and milk in areas better suited to pastoral than to crop production ; fish near seas, lakes and rivers, etc. If domestic production becomes inadequate, the tendency is to import from abroad the same foods that form the basis of the traditional diet. When peoples migrate, they take their familiar crops and domestic animals with them.

People of Northwestern European, Mediterranean or Southeast Asian origin, for example, still eat much the same foods as their forefathers did centuries ago, even if they now inhabit different parts of the world, or have been subjected to strong influences from foreign cultures in their own lands. Sometimes food traditions are reinforced by religious sanctions, particularly in eating or not eating certain types of animal food.

At the same time, the force of tradition should not be overestimated and there are many historic and recent examples of marked changes in dietary patterns under the influence of need or convenience. The most striking is the way in which foods indigenous to the Americas,

e.g., maize, potatoes, cassava, groundnuts, tomatoes, have since the sixteenth century become part of the basic diet in other parts of the world. This development may occur even in primitive tribal societies. When they first crossed Equatorial Africa in the 1850's both Livingstone and Stanley found that throughout the region a staple foodstuff was cassava, first brought to the West Coast of Africa from South America by the Portuguese in the early sixteenth century. There is indeed good evidence that this root was grown in the central Congo basin within 150 years of Columbus' voyage, though at that time there can have been very little direct contact with Portuguese or other foreigners.[1] Figure III-2 (discussed later) shows the geographical distribution of the basic staple foods and, among other things, makes clear how maize has spread throughout large areas of the world.

In more recent times, examples of sharp changes in traditional diets include the partial substitution of margarine and other vegetable fats for butter, the gradual acceptance of many highly processed foods, and the substantial replacement of rice by wheat in certain Asian countries during the postwar period of shortage, a change which seems likely to persist to a considerable extent.

Within the broad outline established by tradition, the most potent factor influencing both the level and pattern of food consumption is income. The first essential is to satisfy hunger and at low income levels this can only be done by a diet consisting mainly of cereals and starchy foods, such as potatoes, yams, cassava and plantains. Thus in most of the low-income countries of the Near East, Africa and the Far East these foods contribute some three fourths of the total calorie intake (see Annex Table 12).

But once hunger is satisfied, increased incomes result in a larger consumption of more expensive foods which add variety to the diet, including both the protective foods which improve health, such as dairy products, meat, fruit and vegetables, and others with no particular nutritional qualities, such as sugar and various beverages, including tea and coffee. The increasing consumption of sugar and various sweetened beverages is assuming such proportions in some countries, especially in the Near East, that it has sometimes been called a " catastrophe ". The poorer working class populations of towns often spend so much of their meager incomes on such consumption that little money is left for more essential foods. This seems to be a phase often associated with the beginnings of rising incomes in towns and much the same thing happened during the nineteenth century in some countries of Western Europe. It can be overcome only by education and, of course, still higher incomes.

The process of " urbanization " is in itself a major factor at the present time in influencing food consumption. It is most striking in the less developed countries where industry and other urban pursuits are only now getting under way. But although the main impact came earlier in the countries already highly industrialized, the process even there is by no means complete. In the United States the farm population fell from 23 to 13 percent between the years 1940 and 1955. Even in the United Kingdom with a farm population of only about 5 percent, there is still a steady drift of workers into urban employment. The main motive for such movements is economic : the higher wages and incomes to be earned in towns.

Latterly a good deal of attention has been given, mainly in the more developed countries but to some extent in economically underdeveloped countries as well, to measuring statistically the quantitative relations between income changes and the level and pattern of food consumption. A main section of this chapter examines the available evidence on this question from all parts of the world. Local conditions naturally greatly affect the detail of the picture. Nevertheless certain general trends and conclusions seem to emerge which may be of considerable utility in agricultural and economic planning, though they must naturally be checked by observation in each particular locality.

Another factor of great importance, but one which in general has been less studied from this point of view, is price. Here a distinction should be made between short-term price changes and longer-term trends. Most work on the relationships between prices and food consumption relates to year-to-year changes in price levels. This type of study is useful for estimating the likely effect of short-term changes in supplies on prices, or as a basis for governmental decisions on price policies, e.g., the level of price

[1] William O. Jones, " Manioc : An Example of Innovation in African Economies ", *Economic Development and Cultural Change*, Vol. V, Jan. 1957, University of Chicago.

supports. Less has been done on the one hand on seasonal variations in price, though this too should be useful for policy decisions, and on the other on the effect of longer-term price trends. Thus longer-term projections of the demand for food tend to be based on the assumption of a fairly rigid pattern of price relations over long periods, an assumption which is demonstrably not always in accordance with past experience. For example, a more rapid increase in production, or improvements in the technical methods of producing one foodstuff rather than another or than food in general, may lead to a long-term shift in relative prices.

In the economically developed countries, where most work on price/consumption relationships has been carried out, the quantity of food consumed as a whole is generally not very sensitive to the relative prices of food and non-food items. As a consequence, expenditure on food consumption may vary considerably with a general change in food prices. Thus a general rise in food prices, as in Japan, for example, and in some countries of Western Europe immediately after the war, may considerably increase the proportion of the income spent on food at most income levels. It may even depress the calorie intake of the poorer income groups. The most common effect of price changes, however, is usually on the pattern of the diet, depressing the consumption of some foods and increasing the consumption of others in substitution. The interrelationships involved are extremely complex and difficult to establish satisfactorily on a quantitative basis. Within the space available, it has not been possible to discuss this question as fully as the effect of income ; nor indeed are the available data adequate to do so.

In recent years welfare schemes, such as school meals, and also nutritional and consumer education have become an increasingly significant influence on consumption patterns, especially perhaps, though by no means exclusively, on the diets of children. This is an important field where much further progress is possible and desirable. It is discussed fairly fully below, though it does not yet lend itself to quantitative treatment.

Yet another relatively new factor, discussed only briefly, is availability. Modern improvements in transport and in food storage and processing bring a much wider range of foods within the reach of many more people and, for some perishable foods, for a much longer season. This development has already had an important influence on dietary habits and in future is likely to become still more important. For example, fresh or properly preserved milk can become much more widely available in tropical countries, as also can fish in inland areas, tropical fruits in cold climates and vice versa.

All these trends have important effects on the development of the world's agriculture. They demand the constant attention of planners and administrators. They are likely to have considerable and generally beneficial effects on the health and well-being of mankind. Guided wisely, these benefits can be obtained more surely and more quickly, and with less dislocation to agriculture and to the economy as a whole, than if the problems of food consumption and requirements are left to work themselves out.

Methodology

It will be convenient to conclude this introductory section with a brief note on the methods by which the level and pattern of diets are estimated and the influence of various factors assessed. There are broadly three, all of which supplement each other : the food balance sheet, the consumer survey and the time series.

The *food balance sheet* shows the estimated per caput supply of a foodstuff in a country or other area as measured by the total production, adjusted for in and out movements in trade, for changes in stocks, and for any quantities used for animal feeding, seed, industrial production, or other purposes apart from food. When such commodity balances are available for all main foods the calorie value and content of protein and other nutrients can be calculated for the diet as a whole. Food balance sheets can provide useful data on the average per caput food supply in a country or larger unit, and within limits may be used for comparison between countries, but they do not provide any information on variations between different social or other groupings within a country. This more detailed information may be obtained only from consumer surveys.

The *consumer survey* data are based on a representative sample of households in a country or smaller area, and ideally covers their total expenditure in a given period for food and other items, the quantities of food purchased and consumed, and the quantities of food obtained

for consumption other than by purchase. This information may be related to data collected at the same time on income, size of family, etc. The survey method may be used not only for assessing the pattern of consumption within a country, but also to obtain information on food consumption in areas for which food balance sheets could not be made, e.g., primitive societies or small areas for which data on production and trade are lacking, and on commodities in more developed countries for which quantitative statistics are inadequate, e.g., game. Consumer surveys are carried out both for nutritional studies and for the measurement of household expenditures, for example, to calculate indices of the cost of living.

A *time series* showing variations in food consumption or food expenditures from year to year may be built up either from balance sheets for single commodities, from complete food balance sheets or from consumer survey data. Such series are of great value in estimating the influence on consumption of changes in income, price or other factors. Unfortunately accurate time series over a fairly long period are available for relatively few countries.

DIETARY PATTERNS AND LEVELS

Except in relatively few countries, including industrialized countries in Western Europe, countries such as Ceylon or Kuwait specializing in the production of primary products for export, and specialized trading areas such as Hong Kong and Singapore, the supplies of food available for consumption in a country or territory are largely determined by the supplies produced. International trade accounts for a relatively small part of the world's food supply. The fall in food consumption levels resulting from the decline or lull in agricultural production during the war years was not made good in most countries until production had again caught up with population, not just in the world as a whole, but in individual countries or small groups of countries.

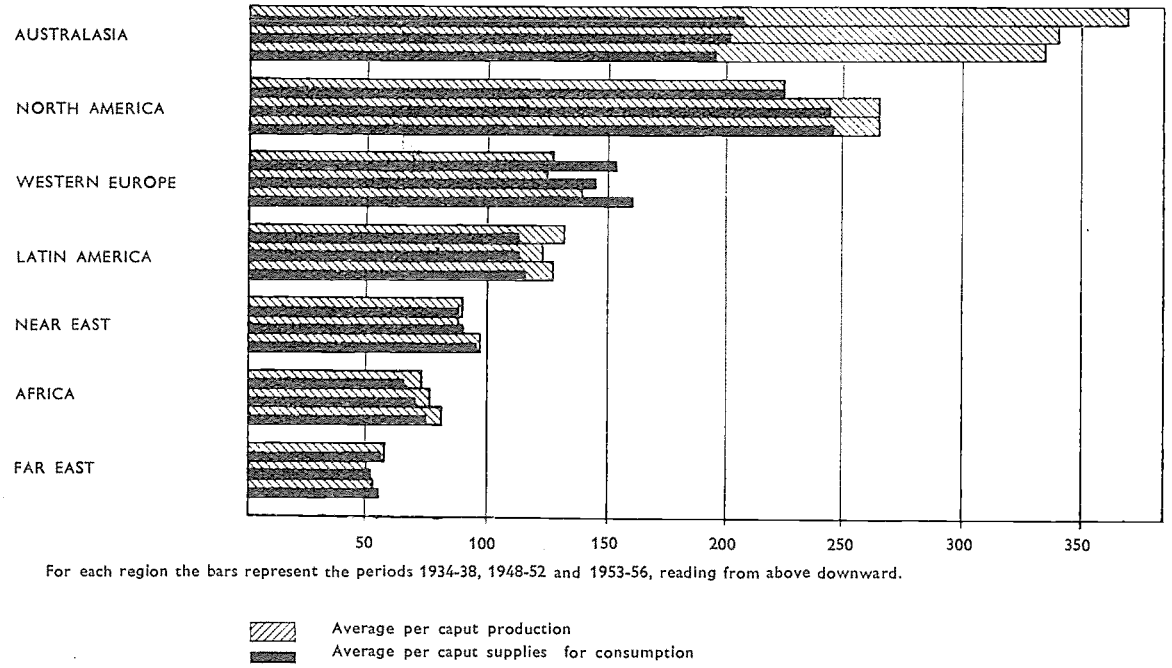
The preponderant importance of domestic production is evident from Figure III-1, which shows the average per caput production of food in each main region of the world and the average per caput supply available for consumption in each of three periods : 1934-38, 1948-52, when the worst postwar shortages had been overcome, and 1953-56. The data are shown as price-weighted indices (world per caput production 1953-56 = 100, excluding the U.S.S.R., Eastern Europe and Mainland China). It will be noted that it is only in Australasia that food production greatly exceeds supplies moving into consumption, because of the proportionately large export, though there is also an appreciable excess of production (5 to 10 percent) in North America, Latin America and Africa. Conversely, Western Europe is the only main region where food supplies available for consumption significantly exceed the supplies produced, currently by some 12 percent. In all underdeveloped regions the correspondence between food production and food consumption is rather close.

With the possible exception of Australasia, where no important nutritional problems arise, all regions have shown a small improvement in per caput food supplies since 1948-52 and usually a still larger increase since 1934-38. Western Europe and the Far East are exceptions to the latter statement, as in 1948-52 neither region had fully regained its prewar consumption level after the wartime and postwar shortages. The Far Eastern region has, in fact, only recently done so with the aid of food imports, mainly of cereals and sugar.

The figure shows also the large disparities in the level of per caput food supplies between the more and the less developed regions respectively. The indices, it may be repeated, are on a price-weighted basis and the much higher values for the more developed regions largely reflect the increasing substitution of cereals, etc., by more expensive foods.

The total energy value of the diet measured in calories naturally shows a more limited range. In the least well-fed countries estimated food supplies usually provide, on average, rather under 2,000 calories per head per day ; in the best-fed rather over 3,000 calories. The differences in actual consumption levels are probably smaller. In the economically underdeveloped countries in the first group, statistical services are less complete and probably a larger proportion of the food supply is unrecorded. In wealthier countries proportionately more of the food is likely to be left uneaten and wasted. Again, average calorie requirements tend to be on the low side in many of the economically underdeveloped countries ; many have tropical climates, while in many the proportion of children is higher and the average size and body weight of adults lower than in, for example,

FIGURE III-1. Average per Caput Food Production and per Caput Food Supplies Available for Consumption, by Regions, 1934-38, 1948-52 and 1953-56 (Indices : per Caput World Production 1953-56 = 100)



North American and Western European countries. All of these factors tend to reduce calorie requirements and some of the difference in average per caput calorie supplies therefore probably reflect differences in physiological needs (see also Figure III-7 (b) below).

Average food supplies per head in terms of calories, during approximately the same periods as in Figure III-1, are set out for a wide range of countries in Annex Table 12 and show in greater detail the broad trend of food consumption since 1934-38. The same table shows also the percentage contribution of cereals and starchy foods to the total calorie intake in each country. In many underdeveloped countries these commonly provide about three quarters of the total calorie supply, in many Western European countries and some of the more developed countries of Latin America, 40 to 50 percent. In the higher income countries of Western Europe the ratio lies in the range 30 to 40 percent, but it is below 30 percent only in the United States, Canada and New Zealand, where the consumption of protective foods is highest. These figures may be taken as a fairly reliable indicator of the nutritional quality of the diets of the various countries, since the basic foods are rich only in energy-yielding carbohydrates and comparatively poor in proteins and other essential nutrients. Since these foods are usually the cheapest sources of calories, this indicator is also closely associated with the economic aspects of food consumption.

The quality of the diet is better expressed, however, through its content of protein, vitamins and minerals. Thus the consumption of the so-called protective foods (such as milk, meat, eggs, fish, pulses, fruits and vegetables), which are rich in these essential nutrients, is very useful in indicating qualitative changes in the patterns of consumption. Judging from the consumption of some protective foods (pulses, fish and meat), there has been some improvement in many countries, particularly during the postwar years (see Annex Table 13). In most countries prewar levels have been regained and in a few cases they have even been surpassed, e.g., meat in North America, fish in Japan and pulses in Turkey. On the other hand, even the prewar levels have still to be attained in some countries, in spite of the significant improvement over the low levels of the early postwar period, e.g., pulses in Chile and meat in Austria. On the whole, there has been a gradual improvement in Western Europe, while the areas which traditionally have a high consumption of meat and a low consumption of fish, viz., North America, Australasia and the River Plate countries, have

remained at about the same levels. In the Far East slight improvements only have taken place.

The increase in the per caput consumption of milk, which is probably the most important of all the protective foods, has been very encouraging, especially in some regions such as Western Europe (see Annex Table 14). While there has been comparatively less improvement in other regions such as the Far East and the Near East, substantial improvements can be noted in a few countries even in those regions, e.g., Japan and Egypt.

Even more significant than the total consumption of milk and its products is probably the proportion consumed as liquid milk. Special efforts have been made in many countries, particularly in the postwar years, to increase consumption of liquid milk, partly because of the growing realization of the vital role of milk in safeguarding the health of the vulnerable groups of the population, i.e., mothers and children. Moreover, many countries have initiated or expanded since the war various schemes to improve the nutritional status of vulnerable groups through supplementary feeding schemes in schools and maternal and child health centers. Surplus milk products, mainly dried skim milk, have often been the basis of such feeding schemes and thus milk products have become familiar in many parts of the world to people who were not formerly used to milk products and, in some cases, to milk in any form. On the whole, these milk distribution programs, often combined with education in nutrition and home economics, have been rather effective in stimulating demand for milk in general and liquid milk in particular. As these measures are gaining momentum in many countries, substantial increases in milk consumption can be expected. Nevertheless, two other points should be noted here. Firstly, milk consumption has been rather stable or even decreasing slightly in some of the high milk-consuming countries. Secondly, in Western Europe the percentage of milk consumed as liquid is slightly lower than it was a few years ago in most countries, indicating that a larger part of the increased milk production is used for the manufacture of products, although the actual consumption of liquid milk as such has not fallen.

Geographical Distribution of Staple Foods

But although the proportion of protective foods in the diet gives a good indication of its quality, it should not be assumed that all the basic cereal and starchy foods are of equal value, or that they contribute nothing more than energy to the diet. On the contrary, they also provide some protein as well as essential vitamins, especially of the B complex, and where the staple foods consist mainly of foods deficient in these respects, such as cassava, maize or highly polished rice, serious nutritional disorders may arise. Considerable interest therefore attaches to Figure III-2 which shows the geographical distribution of the main staple foodstuffs.

In this diagram the area of each country has been made proportionate to its population, so that the relative importance of each basic foodstuff in terms of human nutrition is broadly apparent. For simplicity, only the main basic food in a country has been shown, except where different foods are predominant in different regions of the country. As a rule, however, basic food is supplemented by one or more other types, e.g., wheat and potatoes.

A recent striking example of the important influence on health of the predominant staple food was provided by an investigation in Egypt during 1954.[2] Pellagra was found to some extent in almost all areas visited, but its incidence was highest in the villages of the North, where the principal cereal is maize, and low in the coastal regions where fish, rice, barley and wheat are consumed. Pellagra was also uncommon in regions where millet and dates made up a large part of the diet, or in cities and villages where government-subsidized wheat was available and less maize was consumed.

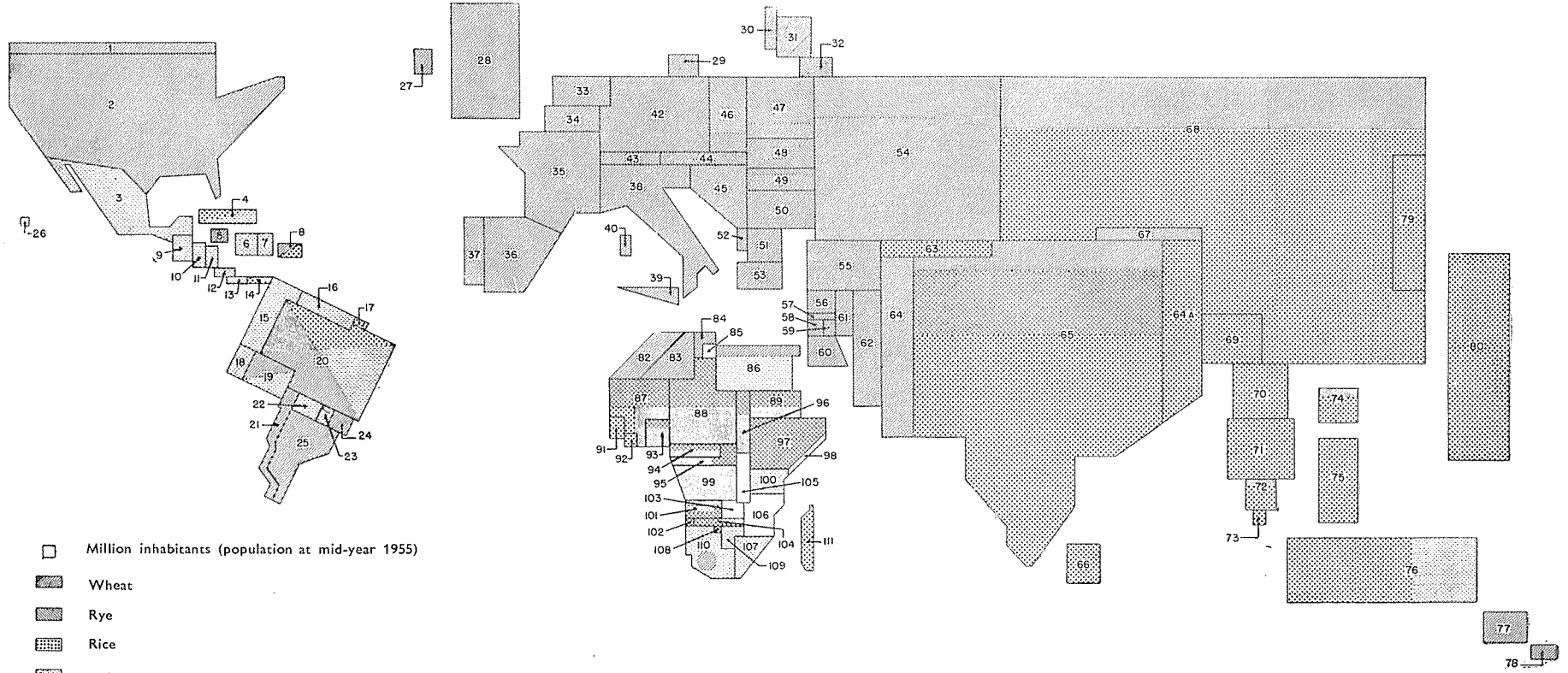
The prevalence of pellagra was closely connected with poverty, which caused people to shift from other cereals to maize. In Upper Nubia, for example, as many as 70 percent of the population were pellagrins in some villages which had been impoverished by successive elevations of the Aswan dam, which had flooded much of their most fertile land. Another instance noted was in the lower Delta region near Alexandria, where villagers living along the coast eat rice, wheat and maize. Little pellagra was found except where economic changes had forced a change in the diet. In the town of Edfu, for example, fishing and hand-weaving were the main occupations, but the lake in which fishing was carried out was being drained to provide more tillable land, while the hand-weavers were suffering from increasing competition from factories. Incomes had fallen in

[2] Vilter, Darby and Glazer, *A Survey of Pellagra and Nutrional Anaemia in Egypt, 1954*, WHO, 1954.

FIGURE III-2. Distribution of the Population of the World Depending on the Main Staple Foods

NOTE : Areas on this map are proportional to population. For each country the main staple food in the diet (the chief source of calories) is shown. While the map is only a rough approximation and small local differences in diet are ignored, for some countries two or more staple foods are shown. A vertical or horizontal division within a country indicates the existence of a clear geographical pattern, e. g. in China, India and some African countries. A circle shows a population group depending on a staple food different from that of the bulk of the population, e. g. Union of South Africa. Where two or more staple foods are of approximately equal importance in the diet without any geographical pattern as far as is known, diagonals divide the area into segments proportional to the calorie supply derived from each food, e. g. Brazil, Cuba, Paraguay, Peru.

The map shows only the most important staple foods, and does not indicate the relati vely small population groups depending chiefly on, e. g. barley, etc. The group " starchy roots and plantains " includes mainly cassava, sweet potatoes, yams, cocoyams and plantains.



Million inhabitants (population at mid-year 1955)

Wheat

Rye

Rice

Maize

Millets and sorghums

Starchy roots and plantains

Data not available

1 — Canada
2 — United States of America
3 — Mexico
4 — Cuba
5 — Jamaica
6 — Haiti
7 — Dominican Republic
8 — Puerto Rico
9 — Guatemala
10 — El Salvador
11 — Honduras
12 — Nicaragua
13 — Costa Rica
14 — Panama
15 — Colombia
16 — Venezuela
17 — Guianas
18 — Ecuador
19 — Peru
20 — Brazil
21 — Chile
22 — Bolivia
23 — Paraguay
24 — Uruguay
25 — Argentina
26 — Hawaii
27 — Ireland
28 — United Kingdom
29 — Denmark
30 — Norway
31 — Sweden
32 — Finland
33 — Netherlands
34 — Belgium
35 — France
36 — Spain
37 — Portugal
38 — Italy
39 — Sicily
40 — Sardinia
42 — Western Germany
43 — Switzerland
44 — Austria
45 — Yugoslavia
46 — Eastern Germany
47 — Poland
48 — Czechoslovakia
49 — Hungary
50 — Romania
51 — Bulgaria
52 — Albania
53 — Greece
54 — U.S.S.R.
55 — Turkey
56 — Syria
57 — Lebanon
58 — Israel
59 — Jordan
60 — Saudi Arabia
61 — Iraq
62 — Iran
63 — Afghanistan
64 and 64 A — Pakistan
65 — India
66 — Ceylon
67 — Nepal
68 — China
69 — Burma
70 — Thailand
71 — Indochina
72 — Malaya
73 — Singapore
74 — Formosa
75 — Philippines
76 — Indonesia
77 — Australia
78 — New Zealand
79 — Korea
80 — Japan
82 — Morocco
83 — Algeria
84 — Tunisia
85 — Libya
86 — Egypt
87 — French West Africa
88 — Nigeria
89 — Sudan
91 — Sierra Leone
92 — Liberia
93 — Ghana
94 — Cameroons
95 — Fench Equatorial Africa
96 — Uganda
97 — Ethiopia
98 — Somalia
99 — Belgian Congo
100 — Kenya
101 — Angola
102 — South-West Africa
103 — Northern Rhodesia
104 — Southern Rhodesia
105 — Ruanda Urundi
106 — Tanganyika
107 — Mozambique
108 — Bechuanaland
109 — Nyasaland
110 — Union of South Africa
111 — Madagascar

many cases from 20 to 5 piasters (60 to 15 U. S. cents) per family per day and pellagra had increased appreciably. Since maize sold at 2 piasters per kilogram, compared with 4.5 piasters for wheat, the shift to maize and the resultant pellagra are easily understood. It was therefore recommended that the problem of pellagra should be tackled either by enrichment of maize at village mills with niacin, or by the government-subsidized exchange of village maize for wheat.

INCOME AND FOOD CONSUMPTION

The primary importance of income in determining the level and pattern of food consumption was stressed in the introductory section. For most foods, per caput consumption rises as income rises, but the rate of increase varies considerably for different foods, and for different levels on the income scale. The average change in food consumption for a given change in income is usually measured by a so-called " coefficient of elasticity ". Essentially this represents the percentage increase in the consumption of all foods, or of particular foods, corresponding to an increase of 1 percent in income. The increased consumption is measured in terms either of increased expenditure or sometimes of increased quantities, according to the purpose in hand.

It is of course often difficult to isolate the influence of income on food consumption from that of other factors which may be changing at the same time. One such complicating factor is price, though its effect is reduced in the case of the consumer survey approach if, as is not unusual, all the observations are taken during a relatively short space of time. Another complicating factor is the inter-substitution of similar foods, e.g., beef and pork, apples and pears. In order to minimize this effect it is often convenient, as has been done in many of the examples below, to aggregate the expenditure on (or consumption of) a fairly large group of foods such as " vegetables and fruits " or " milk products ". This device obviously cannot be adopted if the effect of income changes on the consumption of a single food is under consideration, and special methods are then necessary to allow for differing substitution effects at different price levels and other factors.

The most direct method of examining the influence of income on food expenditure is through consumer survey data, and this approach is therefore considered first below. Supplementary and confirmatory data derived from commodity balance sheets, from over-all food balance sheets, and from time series in particular countries are dealt with subsequently.

Consumer Survey Data : Basic Material and Method of Analysis

Household consumption surveys have been made in a number of countries for nutritional studies or in order to establish weighting systems for cost-of-living indices, or for other various purposes. By no means all of these surveys can be made use of in the present enquiry. For this purpose the sample should be representative of a large group of the population (at least one city), the sample of households should be classified in groups according to increasing income (or total expenditure), the consumption data should be tabulated separately for each group and at least the total number of individuals in each houschold should be recorded.

Fourteen recent household surveys with a wide geographical coverage which fulfilled these conditions have been used for the following analysis. Details of these and certain other recent surveys are set out in Annex Table 15. Their geographical coverage is as follows :

Africa	Ghana (Kumasi)
America	Canada, Panama, United States
Asia	Ceylon, India (Faridabad), Japan
Europe	Austria, Finland, Ireland, Portugal (Lisbon and Oporto), Sweden, Switzerland.

Other household survey data are of course also available, particularly in Western Europe, and some of this additional material has also been drawn on., e.g., in Table III-1.

Only three of the surveys used for the study covered the farm as well as the urban population, and the data presented below generally relate to urban consumption levels. As is shown later, lack of data on rural consumption at different income levels is a serious deficiency, especially if the results are to be utilized in agricultural planning. The deficiency is particularly important in economically underdeveloped countries where the rural people make up the larger part of the population.

Before proceeding to set out the main findings, it is important to record briefly the procedure which has been followed. Total living expenditure rather than income itself was used in all cases as an indicator of the level of income. Income data were not always known and, even where available, they are notoriously subject to inaccuracy. Moreover, for households with an income varying from year to year, total living expenditure may be the better indicator of the customary standard of living. As savings, and usually taxation, tend to rise rapidly with higher incomes, elasticities tend to be higher when calculated in relation to total living expenditure rather than to total income. The difference between the two coefficients varies from country to country, but is roughly of the order of 10 percent.

In order to eliminate the influence of the size of the household, total living expenditures and food expenditures were in all cases expressed on a per caput basis, but the available data did not often permit any allowance to be made for differences in the proportion of children, etc. Expenditures were computed on an annual basis and for purposes of comparison converted into United States 1948 dollars by means of official exchange rates and changes in the cost-of-living index in the United States between the year of the survey and 1948. Since the same conversion factors were used for both total and food expenditures, this procedure did not affect the slope of the curves reproduced below (on a logarithmic scale) and thus the estimates of elasticity, though unrealistic exchange rates may in some instances tend to displace somewhat the whole curve.

Total Expenditure on Food

The over-all picture emerging from the 14 consumer surveys is apparent from Figure III-3, showing in relation to total living expenditure total expenditure on food, excluding alcoholic beverages and meals taken outside the home. There is a remarkable similarity between the curves from the various countries, which is one of the most striking results of the present enquiry. It suggests that in most urban societies consumers react in much the same way in their food-buying habits at any given level of income.

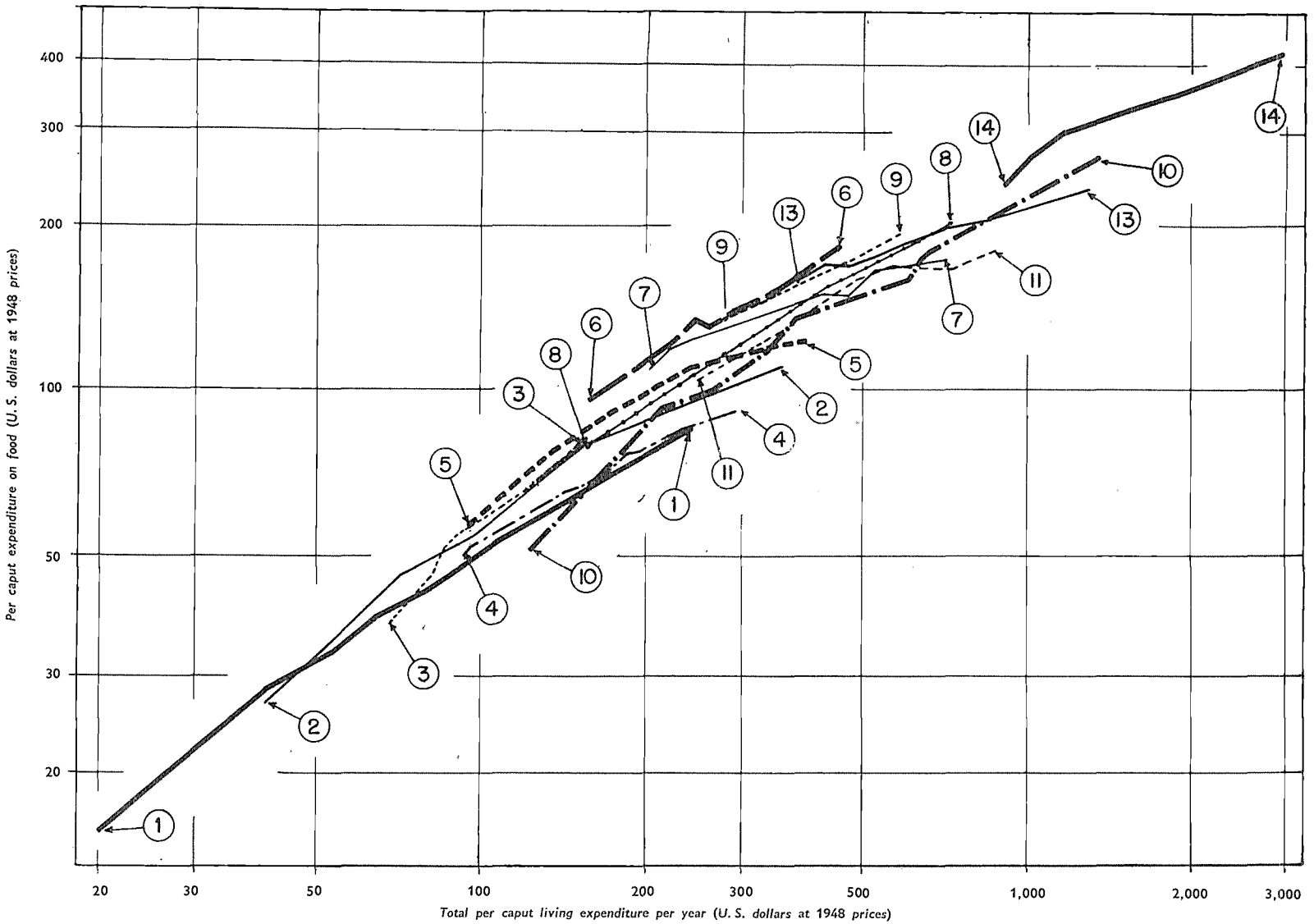
The set of curves, taken as a whole, tends to flatten out at the higher income levels, thus confirming the well recognized fact that at low income levels an increase in income results in a greater response in food consumption than does a corresponding increase at higher income levels. In fact the coefficient of elasticity declines from about 0.75 at the lower end of the series of curves to about 0.4 at the upper end. In other words, in very poor households an increase of 1 percent in income leads, on average, to an increased expenditure of some 0.75 percent on additional or better food supplies, but in relatively wealthy households to an increased expenditure of less than 0.5 percent, with of course all gradations between.

These data are of obvious significance in agricultural planning and give a first indication (on an over-all basis) of the additional per caput food supply needed to avoid inflationary trends for any given rise in incomes in the course of economic development. But while they tell the essentials of the story, there is more to be said on the side of consumption expenditure. Thus, if meals taken outside the home and alcoholic beverages are included in food expenditure, the degree of flattening of the curve at the higher income levels is much less, and the curves approximate more closely to straight lines. This is evident in Figure III-4, where for three countries in different regions and at different income levels the curves in Figure III-3 are reproduced side by side with similar curves in which restaurant meals and alcoholic beverages are included under food expenditure. Consumers at higher income levels appear to react to a further increase in income by considerably larger expenditures on both these items for which income elasticity is very high. And while the cost of restaurant meals in particular may fall more largely under the heading of services than of food, the curves suggest that a large potential demand still remains even in the wealthier countries. This, however, is one aspect of a more general tendency which is discussed more fully in a later section.

Consumer Expenditure on Individual Foods

From the point of view of planning production or the organization of marketing, much more interest attaches to the change in the consumption levels of individual foods than to the income elasticity of foods taken as a whole. At this stage, however, traditional preferences and habits come into play and, as would be expected,

FIGURE III-3. Average per Caput Expenditure on Food Consumed in the Home (excluding Alcoholic Beverages) in Relation to per Caput Income, as Indicated by Total Living Expenditure (Logarithmic Scale)



1. India (Faridabad) 1954
2. Ceylon 1952/53
3. Ghana (Kumasi) 1955
4. Japan 1954
5. Portugal (Oporto) 1950/51
6. Portugal (Lisbon) 1948/49
7. Austria 1954/55
8. Ireland 1951/52
9. Finland 1950/51
10. Panama 1952/53
11. Switzerland 1936/37
13. Sweden 1948
14. U.S.A. 1950

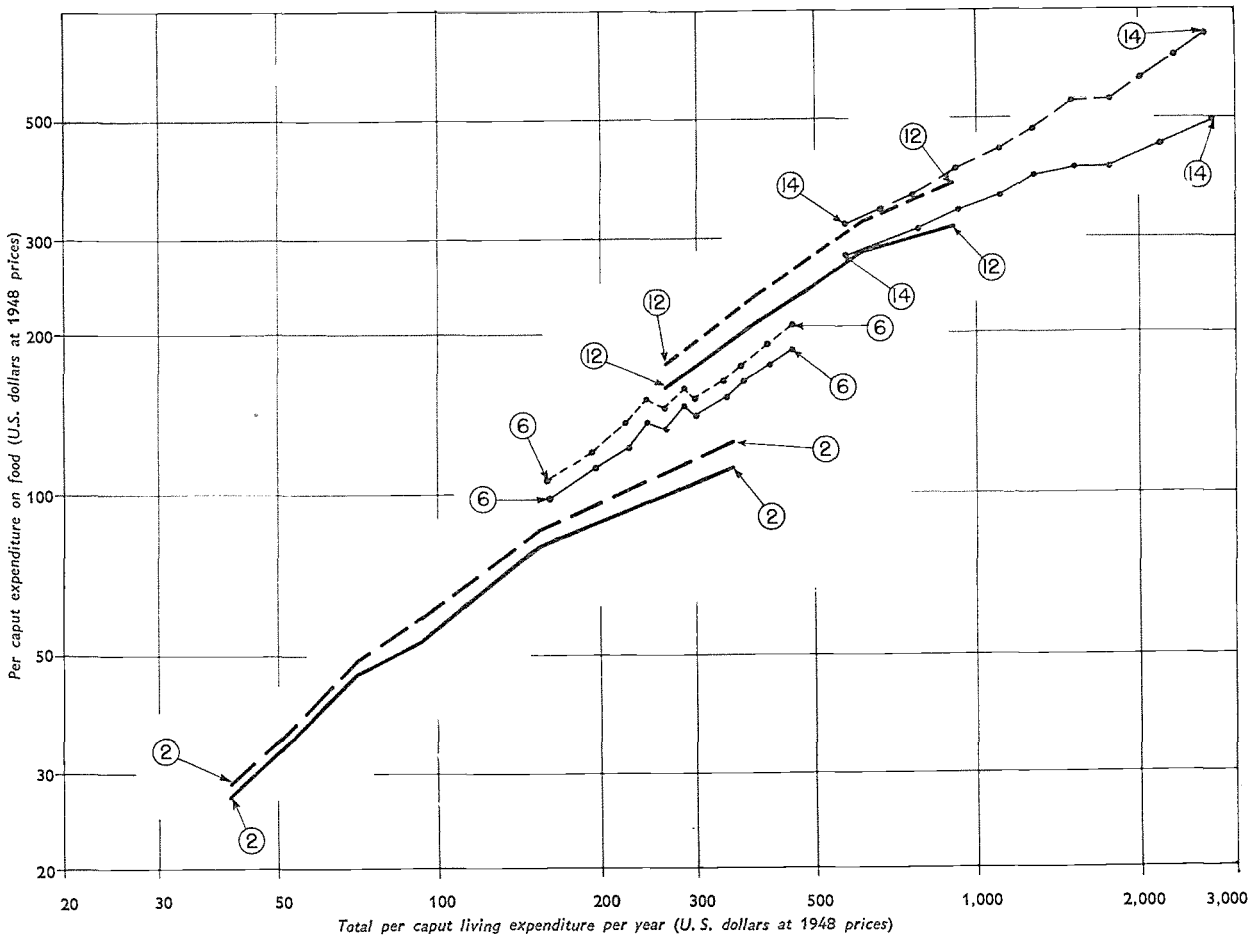
there is much less uniformity from country to country than is apparent in Figures III-3 and III-4 above. Even so, if fairly broad groups of food are taken, a considerable similarity of behavior begins to emerge.

Expenditure on Staple Foods (Cereals, Bread and Starchy Foods)

As would be anticipated from the earlier discussion, the income elasticity of these foods is less than average, and the expenditure curves tend to flatten at a lower income level than do the curves for food as a whole (Figure III-5). The elasticity coefficient is usually of the order of 0.6 at the lower part of the income range, but at the upper part of the range falls to zero. The most noticeable differences from the general trend occur in the surveys in Ghana, Lisbon and, to some extent, Panama; the reasons for the higher income elasticities which appear to occur in these instances are not altogether clear, though price relationships between foods may be one factor.

If the data for this group of foods are further broken down, a number of interesting substitution effects emerge, especially at the lower income levels. In Ghana, for example, the basic foods are cassava, plantains and yams rather than cereals, but when income rises, expenditure on cereal foods sharply increases with an elasticity close to 1.5, compared with 0.6 for the two starchy foods. It is thus clear that starchy food is considered an "inferior food" relative to cereals. It may be recalled that formerly in Western Europe, and to some extent even today, black rye bread was consid-

FIGURE III-4. Average per Caput Expenditure on Food in Relation to Income (a) Including and (*b*) Excluding Meals in Restaurants and Alcoholic Beverages (Logarithmic Scale)



2. Ceylon 6. Portugal (Lisbon) 12. France (cities with over 100,000 in habitants, excluding Paris) 14. U. S. A. 1955
For each country the broken line represents total expenditure on food, including meals in restaurants and alcoholic beverages, and the solid line represents expenditure on food consumed in homes, excluding alcoholic beverages.

Source : Household surveys in four selected countries.

ered the bread of the poor and with rising incomes consumption switched gradually to white wheaten bread. Other current examples of substitution within this group include the change from millets to wheat or rice in India, from maize and cassava to wheat in Brazil, and from wheat to rice in the traditionally rice-consuming countries of the Far East. Because of such substitution, with rising incomes, of more expensive for less expensive foods, the fact that expenditure on basic starchy foods does not decline at the higher income levels does not mean that calorie supplies from these foods are maintained; on the contrary, the average quantities of cereals and starchy foods eaten begin to decline after incomes reach a certain level. In general the survey data do not give enough information on the quantities consumed (as distinct from expenditure) for this to be demonstrated. The decline apparent in Annex Table 12, however, is more clearly brought out in a later chart (Figure III-7) based on food balance sheet data.

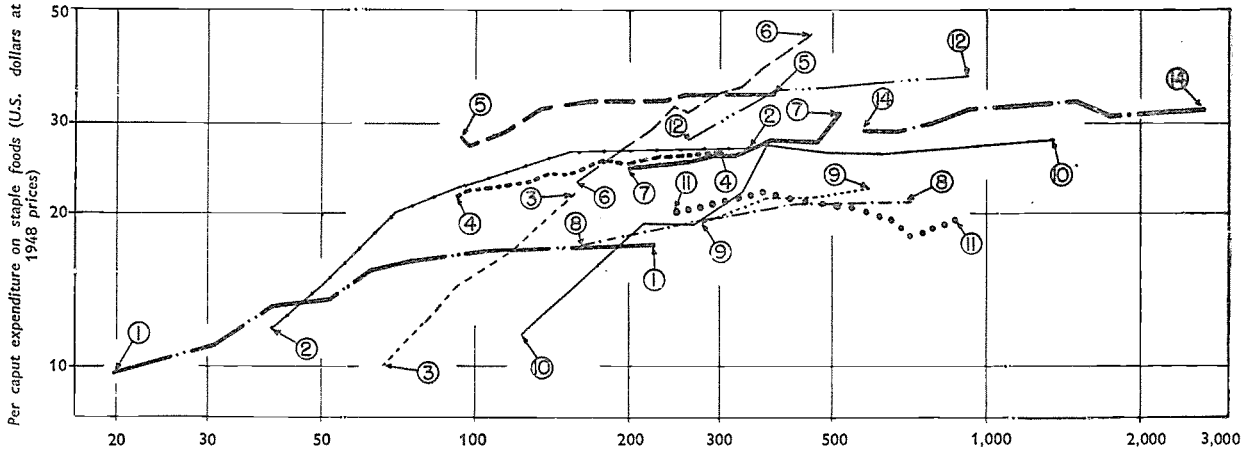
Expenditure on Other Foods

Data comparable to those in Figure III-5 are shown for a number of more expensive foods or groups of foods in Figure III-6. In every case the elasticity of demand in respect to income is clearly much greater than that for basic foods and for some there is little or no flattening of the demand curves, even at the higher income levels. Brief notes on each food follow.

Sugar. At the lower income levels the elasticity of demand is considerable : of the order of 0.7. Saturation is reached at the higher income levels and in curve 14 (United States) there is clearly a "negative" elasticity, i.e., beyond a certain income level expenditure on sugar begins to decline (Figure III-6 (a)). The rather wide differences between countries are no doubt partly due to food habits, but (as is shown later) are largely to be explained by price elasticities, including differences in retail prices due to taxation, guaranteed producer prices, etc.

Vegetables and Fruit. This group of foods shows the highest income elasticity (close to 1) of any group of foods other than livestock products. No saturation level is apparent in Figure III-6 (b), though some curves, e.g., 14, suggest a certain levelling off. The rise in expenditure is probably due mainly to an increase in the quantities consumed at the lower income levels and to a change to more expensive types, with more elaborate marketing services, in the higher income range.

FIGURE III-5. Average per Caput Expenditure on Bread, Cereals and Starchy Foods in Relation to Income (Logarithmic Scale)



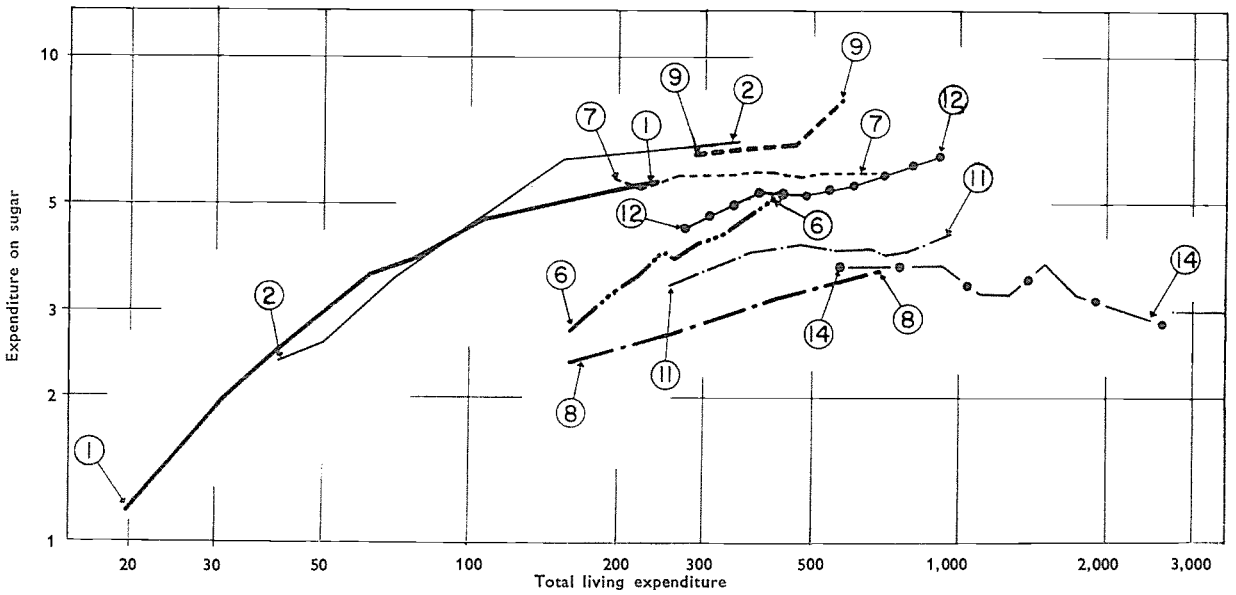
1. India (Faridabad) 1954
2. Ceylon 1952/53
3. Ghana (Kumasi) 1955
4. Japan 1954
5. Portugal (Oporto) 1950/51
6. Portugal (Lisbon) 1948/49
7. Austria 1954/55
8. Ireland 1951/52
9. Finland 1950/51
10. Panama 1952/53
11. Switzerland 1936/37
12. France (large cities) 1951
14. U.S.A. 1950

Source : Household surveys in selected countries.

FIGURE III-6. Average Yearly per Caput Expenditure on Selected Foods in Relation to per Caput Income. U.S. Dollars at 1948 Prices

1. India (Faridabad) 1954
2. Ceylon 1952-53
4. Japan 1954
5. Portugal (Oporto) 1950/51
6. Portugal (Lisbon) 1950/51
7. Austria 1954/55
8. Ireland 1951/52
9. Finland 1950/51
10. Panama 1952/53
11. Switzerland 1936/37
12. France (major cities) 1951
14. U.S.A. 1950

(a) SUGAR



(b) FRUIT AND VEGETABLES

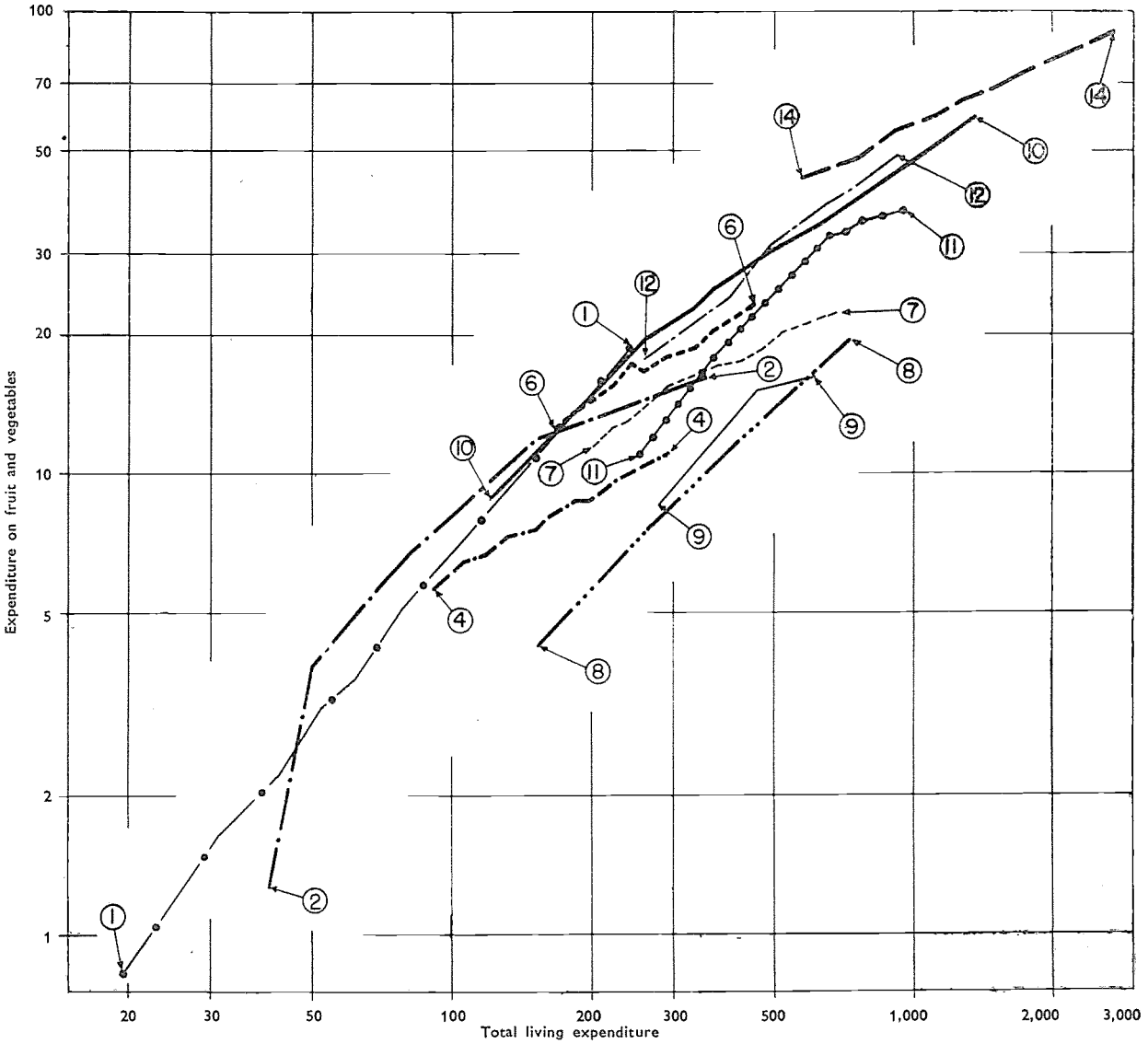
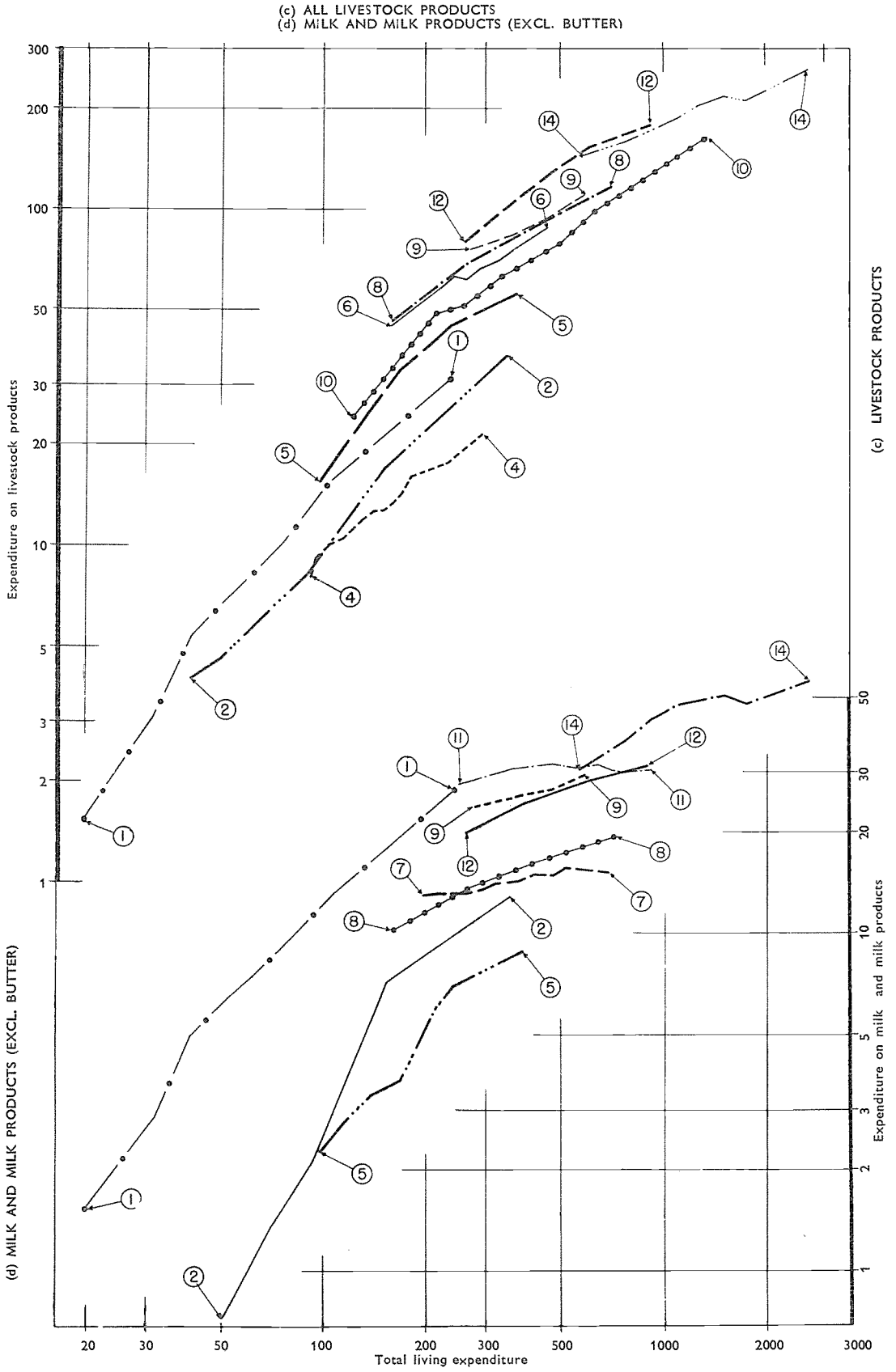


FIGURE III-6 (Concluded). Average Yearly per Caput Expenditure on Selected Foods in Relation to per Caput Income. U.S. Dollars at 1948 Prices



Livestock Products (*Meat, Fish, Eggs, Milk, Butter*). Expenditure on foods of animal origin is clearly very sensitive to income (Figure III-6 (c)), income elasticity declining from 1 at the lower to 0.4 at the highest part of the income range. It is noticeable, however, that the slope of the line for each country is rather less steep than would be that of a line drawn through all available points, irrespective of country. This appears to reflect differences in national habits and the type of livestock products most widely consumed in the various countries. For a given income level, expenditure on animal foods is relatively lower than average for countries in the lower income range (e.g., India, Ceylon, Japan) and relatively higher in those in the higher income range (e.g., the United States). Possibly the taste for livestock products grows as they become a more general item in the diet.

The differences between the countries become still more noticeable in the charts for individual livestock products and indicate differences in national dietary habits and the extent of substitution within this group. For example, meat consumption is relatively low in Switzerland and Finland, where the consumption of milk is particularly high, and also in Japan and Portugal, where there is a large consumption of fish.

Fish consumption shows in all the surveys and at all income levels a rather high coefficient of elasticity (around 0.6), but, as would be expected, the consumption level at any particular income range varies widely from country to country according to availability, which in turn is likely to be reflected in consumption habits and also in price.

For *meat* the elasticity declines substantially as income rises : from about 1.5 at the lowest to about 0.3 at the highest income levels. The graph for *eggs* is very similar to that for meat.

For *milk and milk products*, elasticity is very high (over 1.0) in the lowest income groups and it is apparent that a rise in purchasing power in low-income countries such as India and Ceylon (curves 1 and 2) would greatly increase the demand for milk. On the other hand, in countries with a high milk consumption such as Austria, Finland and Switzerland (curves 7, 9 and 11), elasticity is very low, close to 0.2, and an increase in income would not lead to any substantial further rise (Figure III-6 (d)).

Butter. Elasticity for butter alone is generally close to 0.5 and in the surveys for which data were available did not vary much with the level of income. The data were too meager for effective analysis at the lowest income range, however, and it is likely that here the elasticity would be higher. An unusually low elasticity (0.1) was found for Ireland, a country with a high butter consumption. The absolute value of expenditure at any given income level varies considerably from country to country, partly because of substitution between butter and other fats.

Fats and Oils (*Excluding Butter*). In the low-income countries, including India, Ceylon, Ghana and Portugal, expenditure rose sharply with income, with an elasticity of the order of 0.8. In the high-income countries expenditure was almost independent of income level, or even decreased slightly at the higher incomes owing to substitution by butter.

Tea and Coffee. The elasticity of demand declines from about 1.0 to 0.3 from the lowest to the highest income levels. For a given income level the absolute value varies widely from country to country, according to consumer habits and relative prices.

Alcoholic Beverages. Expenditure is generally very sensitive to income with an elasticity of the order of 1.0. None of the surveys give any clear indication of a falling off in the rate of increased expenditure with increased purchasing power at the higher income levels, but it is uncertain how far this is due to a larger volume of consumption and how far to a change to higher-priced drinks. However, there are significant differences between countries, depending on consumer habits, regional supplies and prices.

Meals Outside the Home. As already indicated, expenditure for meals outside the home is highly income elastic. Except for Ceylon and Switzerland, the elasticity indicated in the surveys ranges from 1.2 to 2.4 and it is these exceptionally high values which largely account for the rather more constant elasticity of demand throughout the income range when expenditure of all kinds on foodstuffs is considered (Figure III-4). The curves for the various countries (with the exception of Ireland) lie rather closely along the same regression line.

The increase in expenditure on meals outside the home in the countries at higher income levels may be intensified by the following con-

siderations : (*a*) the cost of services, which is an important part of the cost of restaurant meals, increases in countries at a high income level ; (*b*) the scarcity of domestic servants in such countries is likely to lead people to eat more often outside their homes. The increase in purchasing power and the various social changes which accompany economic development are thus likely to raise the level of expenditure on meals outside the home, but without greatly affecting the total demand for agricultural products at the farm level.

Elasticity of Expenditure on Food with Respect to Income : General

The most interesting conclusion which emerges from this review of 14 consumer surveys, distributed over a much wider range of incomes than is commonly found in a single country, is the very large variation in the income elasticity of most foods with the level of income. Fats and oils (excluding butter) are a striking example, with an elasticity of expenditure of about 0.8 at the lowest income level, falling to zero (or even a slight negative elasticity) at the highest. But the same trend is evident for most items, with the exception of alcoholic beverages, meals outside homes and possibly butter and fish. It is to be emphasized that these data relate to expenditures, not quantities consumed, and that they involve a good deal of quality and other substitution.

Most published estimates of income elasticities for food are for countries in the upper and middle income range. The published data are generally consistent with the findings reported above, but it is perhaps worth stressing that, because of the variation of elasticity with income level, they are applicable only to countries at about the same degree of economic development as those in which the studies were made. To apply them to underdeveloped countries with lower levels of average income would involve serious errors.

A representative series of published data of expenditure elasticities in respect to income is set out in Table III-1 in comparison with those established above. Some of the published data (marked CS) are derived from consumer survey data and some (marked TS) from time series usually based on commodity balance sheets for the countries concerned. The sources of these data are in all cases indicated. It will be noted that with few exceptions the coefficients are within the range derived from the data in Figures III-5 and 6.

In deriving income elasticities from time series, multiple correlation analysis is generally used to eliminate the influence of factors other than per caput income, such as the price of the particular commodity, the price of close substitutes, changes in taste, etc. In two instances (Sweden and the United States) the original data related to the level of total income rather than to total living expenditure. Since elasticities relative to income are lower than elasticities relative to total living expenditure, for reasons already noted, a correction factor was used to convert them to the latter basis for purposes of comparability.[3] It should be added that a very large number of estimates of income elasticities have been made, particularly in the United States, on the basis of time series of total supplies for consumption of individual commodities and sometimes of production. Those quoted in Table III-1 are representative. But if comparisons are made between authors, rather large variations in the actual values estimated are apparent, both among elasticities at the retail level, as in Table III-1, and among many similar estimates at the farm level, according to the method of calculation, the other variables taken into account, and the period covered by the data, etc.

The point has been stressed in a recent discussion on consumption trends in the United Kingdom.[4] " On the basis of the changes of the past three or four years, one would infer that the expenditure elasticity of demand for food ... is of the order of 0.6 ... But ... there is some conflict of evidence. If one relies principally on the evidence of the consumption patterns revealed by family budget studies,

[3]The coefficient of elasticity relative to income is equal to the coefficient of elasticity relative to total living expenditure multiplied by the coefficient of elasticity of total living expenditure relative to income. The latter coefficient was close to 0.94 in the 1933 Swedish survey for workers and low grade employees. The 1948 U.S. food survey did not contain data on total living expenditure. Therefore, elasticity of total living expenditure relative to income (0.77) was measured from the 1950 survey among the population of large cities. The coefficients of elasticity relative to income, as given by the authors, were therefore multiplied by 1/0.94 and 1/0.77 respectively for Sweden and the U.S. in order to obtain the elasticity relative to total living expenditure.

[4]E. A. G. Robinson, " Agriculture 's Place in the National Economy ", Proceedings of Conference *Agriculture in the British Economy*. Imperial Chemical Industries Ltd, 1957. p. 22.

rather than on recent trends of national consumption, the expenditure elasticity may be thought to be no more than about 0.4 ... One obtains a figure of the same order of magnitude by comparing the relative total expenditures on consumption in this country and the United States with the relative expenditures on food consumption." Another recent publication in the United Kingdom,[5] based on a national consumer survey, estimates the total expenditure elasticity of food at a still lower level: at about 0.31 in summer, and at 0.25 in winter.

[5] J.A.C. Brown, "The Consumption of Food in Relation to Household Composition and income" *Econometrica*, Vol. 22, No. 4, Oct. 1954.

It may be concluded therefore that it would be erroneous to attribute any high degree of general significance to estimates of elasticities of expenditure on food. They are rather to be regarded as indicators of the general order of magnitude of the response to income changes.

Effect on Farm Receipts of Changes in Retail Expenditure on Food

A point which should be made here is that all the expenditure data in the preceding analysis relate to expenditure at the retail level. Retail prices are higher than farm prices, while distribution costs are relatively inelastic, and

TABLE III — 1. PUBLISHED ESTIMATES OF THE ELASTICITY OF EXPENDITURE ON FOOD IN RELATION TO TOTAL LIVING EXPENDITURE COMPARRED WITH THE RANGE OF ELASTICITIES INDICATED IN FIGURES III-3 — III-6

	France		Nether-lands	Sweden		United Kingdom	United States		Preceding Consumer Surveys
	CS (a)	CS (b)	TS (a)	CS (a)	TS (b)	CS (a)	CS (a)	TS (b)	Figures for elasticity at botton and top of income range
Total expenditure on food and drink	0.7	0 6		0.53		0.6			
Food consumed in home[1]	0 64	0.58			0.70	0.54			0.75–0.4
Bread and cereals	0.32	0 27		0.43	–1.14	0.25	0.03		
Starchy foods	0.2	0 3			–[3]0 46	0 2	0.06		0.6 – 0.0
Pulses	0 2	0.0				0.0	–0.09		
Sugar	0.3	0.1	0.26	0 24	[1]0.46	0.1	0.26		0.7 – negative
Vegetables and fruits	0.9	0.7	[4]1.12	0.68	1.44	1.1	0 55		about 1.0
Livestock products	0.7	0.6		0.42		0.6	0.43	0.47	1.0 – 0.4
Meat	0.8	0.6	[5]1.0	0 51	[5]0.82	0.6		[7]0.51	1.5 – 0.3
Fish	0.9	1.2		0.6	0 43	1.0			about 0.6
Eggs	0.8	0.5	0.55	0.54		0.6	0.29	0.57	
Milk and milk products (ex. butter)	0.4	0.5	[6]0.65	0.29	0.60	0.5	0.42		1.0 – 0.2
Butter	0.7	0.6		0.7		0.4			about 0.5
Fats and oils	0.4	0.2		0.35	0.31	0.0	0.13		0.8 – 0.0
Tea and coffee	0.5	0.4			0.28	0.15			
Alcoholic beverages	0.9	0.9		1.13	1.05	1.3			about 1.0
Meals outside home				2.25	1.38				1.2 – 2.4

CS = Consumer Survey. TS = Time Series.
[1] Includes chocolate. — [2] Includes eggs. — [3] Includes pulses. — [4] Tomatoes only. — [5] Beef only. — [6] Cheese and milk respectively. — [7] Separate elasticities were calculated for particular meats as follows: pork 0.72, beef 0.73, chicken 1.01

SOURCES:

France (a and b): J. Voranger, "L'elasticité des dépenses des ménages". *Annales de Recherches et de documentation sur la consommation*, CREDOC, April-June 1956. (a) relates to cities of over 100.000 inhabitants (excluding Paris) and covers 1.739 households; (b) relates to Paris only and covers 275 households. Both surveys undertaken in 1951.

Netherlands: W.H. Somermeijer and H.C. Bos; *Outlook on Demand Studies in the Netherlands*. Central Statistical Office, Report E.18, The Hague. Time series covers the interwar period.

Sweden: (a) H. Wold in association with Lars Jureen, *Demand Analysis*. John Wiley, 1933. Tables 16.5,2, 16.5.3, Survey (undertaken in 1953) covers 1,050 families made up of workers and lower level employees; (b) R. Bentzel et al., *Den Privata Konsumtionen*. The Industrial Institute for Economic and Social Research, Stockholm, Sweden. Time series 1931-55.

United Kingdom: R. Stone, *Measurement of Consumers' Expenditure and Behaviour in the United Kingdom*, 1920-38. Tables 104, 105. Cambridge, 1954. Based on surveys of 3,580 working- and middle-class households, 1937-39.

United States: (a) K.A. Fox, "Factors Affecting Farm Income, Farm Prices and Food Consumption", *Agricultural Economic Research*, July 1951, Table 10. Survey covers 1,358 urban households of two or more persons: 1948; (b) K.A. Fox, "Factors Affecting Farm Income, Farm Prices and Food Consumption". *Agricultural Economic Research*, July 1951, and K.A. Fox, "The Analysis of Demand for Farm Products", *U.S.D.A. Bulletin* 1801. Time series covers 1922-41.

indeed tend to rise at higher income levels because of the more elaborate processing and services provided, and because of the higher wages paid to distributive workers in higher income countries. It follows therefore that the effect of rising incomes on farm receipts and incomes will be smaller than their effect at the retail level.

An interesting attempt has been made by Miss M.C. Burk [6] in the United States to measure the impact of an increase in consumers' disposable income on gross farm receipts. A distinction was made between two major elements determining the retail cost of food : (1) the value of agricultural products at farm level ; (2) the processing and marketing added value for these products. Miss Burk found that the income elasticity for food was equal to 0.15 when referring to farm value, and equal to 0.7 when referring to the value added in processing and marketing. The income elasticity for food expenditure (value 1 + 2) at the retail level was equal to 0.4, a weighted average of the two previous coefficients. In other words, a 10 percent increase in disposable income per caput was associated with a 4 percent increase in consumers' food expenditure per head. But, at the same time, the farm share was increasing by only 1.5 percent, while processing and marketing added value was increasing by 7 percent. In an appraisal of the demand prospects for agricultural products, it would therefore be essential to make a distinction between the trends of food expenditure measured at retail price level, and the trends of food consumption measured at farm price level.

It is likely that the difference between farm and distribution elasticities would be greater in the United States than elsewhere, though no comparable data appear to be available for other countries. Nevertheless similar considerations are likely to apply to a considerable extent, and would influence any estimates of the effect of rising national incomes on farm receipts and farm incomes.

Effect of Income Changes on Quantities of Food Purchased

The data so far presented (except the time series estimates in Table III-1 for the United States and the Netherlands) all relate to elasticities of expenditure. It is these which are of most significance in over-all economic planning, e.g., in relation to inflation, or the emergence of surplus stocks. For planning agricultural production or food imports, however, the effect of income changes on the quantities purchased, i.e., leaving out shifts to higher qualities or to more highly processed foods, is even more important.

For the reasons indicated above elasticities in regard to quantity are generally lower than elasticities of expenditure. This is apparent from Table III-2, which compares expenditure and quantity elasticities in respect of income; the figures are derived from consumer surveys in the United States and the United Kingdom respectively. The relationship between the

[6] Marguerite C. Burk, *Changes in Food Expenditure 1929 to 1956*, manuscript.

TABLE III—2. COMPARISON OF INCOME ELASTICITIES FOR FOOD EXPENDITURE AND FOR QUANTITIES PURCHASED, UNITED STATES AND UNITED KINGDOM

FOODSTUFF	United States 1948[1]			United Kingdom 1937-39[2]		
	Expenditure	Quantity	Quality differential	Expenditure	Quantity	Quality differential
Bread and cereals	.02	−.21	.23	.36	.26	.10
Sugar and sweets	.20	−.07	.27			
Fats and oils	.13	−.04	.17			
Potatoes and sweet potatoes	.05	−.05	.10			
Fruit	.42	.33	.09	1.20	1.09	.11
Vegetables				.62	.52	.10
Meat	[3].36	[3].23	[3].13	.69	.50	.19
Fish				.84	.56	.28
Eggs	.22	.20	.02			
Dairy products	[4].32	[4].23	[4].09	[5].53	[5].47	[5].06

[1] K.A. Fox, *Factors Affecting Farm Income, Farm Prices and Food Consumption.*— [2] Derived from S. J. Prais and H. S. Houthakker, *The Analysis of Family Budgets with an Application to two British Surveys.*— [3] Meat, poultry and fish.— [4] Excludes butter.— [5] Includes fats.

expenditure and quantity elasticities is similar in the two countries. The differences in the elasticities themselves between the two countries, however, are intensified because the United States survey relates to 1948, a period of prosperity, and covers all urban households, while the British survey was carried out during the period of depression in the nineteen thirties and covers only working-class households.

In general, the survey data drawn on in the preceding analyses do not include sufficient information on the quantities purchased to enable this question to be examined. Some indications on this point emerge, however, if data from food balance sheets showing average per caput supplies of food available for consumption in a number of countries are related to estimates of per caput national income in those countries. These are considered in the next section.

Data from Food Balance Sheets

Food balance sheets are published by FAO for 38 countries and show the average number of grams of each main food available for consumption per head per day, and also the number of calories and the quantity of protein, etc., supplied by the diet as a whole. Similar data in terms of nutrients can readily be derived for groups of foods and provide an easy means of combining more than one food on a quantitative basis. Such national averages for the period 1951-53 have been plotted in the charts which follow against per caput national income for the same period in terms of U.S. 1948 dollars. The national income data have been taken from United Nations publications.

Figure III-7 (a) shows the total quantity of food available for consumption (in terms of calories) in relation to average national income. The scatter of points is rather wide, as would be expected in view of the inevitably somewhat imprecise nature of the estimates and of the numerous other factors which may affect the relationship. Nevertheless the general indications are, as before, that total food supplies for consumption rise rather sharply with income at the lowest income level, and then at a fairly constant rate until the highest income level, when the curve tends to flatten out. The average slope for this purely quantitative measure of food supply (calories), in which no element of quality enters, corresponds to an income elasticity of 0.1.

As pointed out earlier, however, some of the larger calorie supply of countries at the higher income level may reflect differences in average calorie requirements, because the large proportion of children, the relatively low body weight of adults, and the hot climates of many economically underdeveloped countries all tend to reduce calorie requirements. In Figure III-7 (b), therefore, the calorie supply of each country has been expressed as a percentage of its estimated average requirement [7] and again plotted against per caput national income. In this chart the scatter of points is smaller and the slope of the line nearer the horizontal. The curve suggests that even in the low-income countries the average quantity of food available per caput was not far below what was required to supply the calorie needs of the population. This does not mean of course that there was no undernutrition during the period.

[7] FAO, *Second World Food Survey*, 1952.

FIGURE III-7 (a). Estimated Average per Caput Calorie Supply in Selected Countries in Relation to per Caput National Income 1951-53 (Logarithmic Scale)

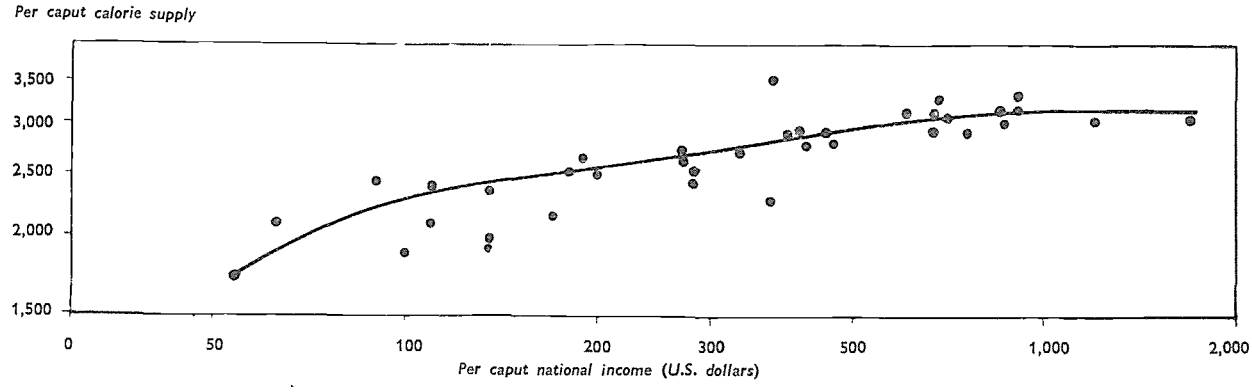
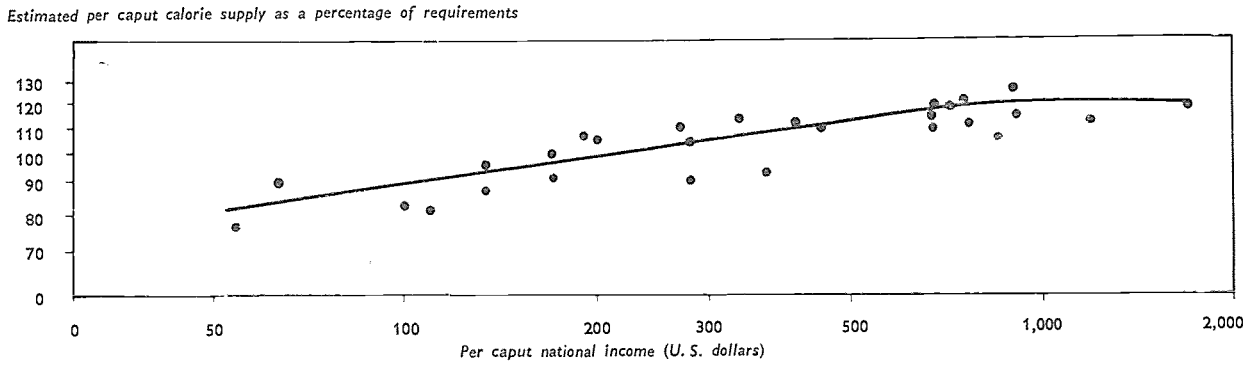


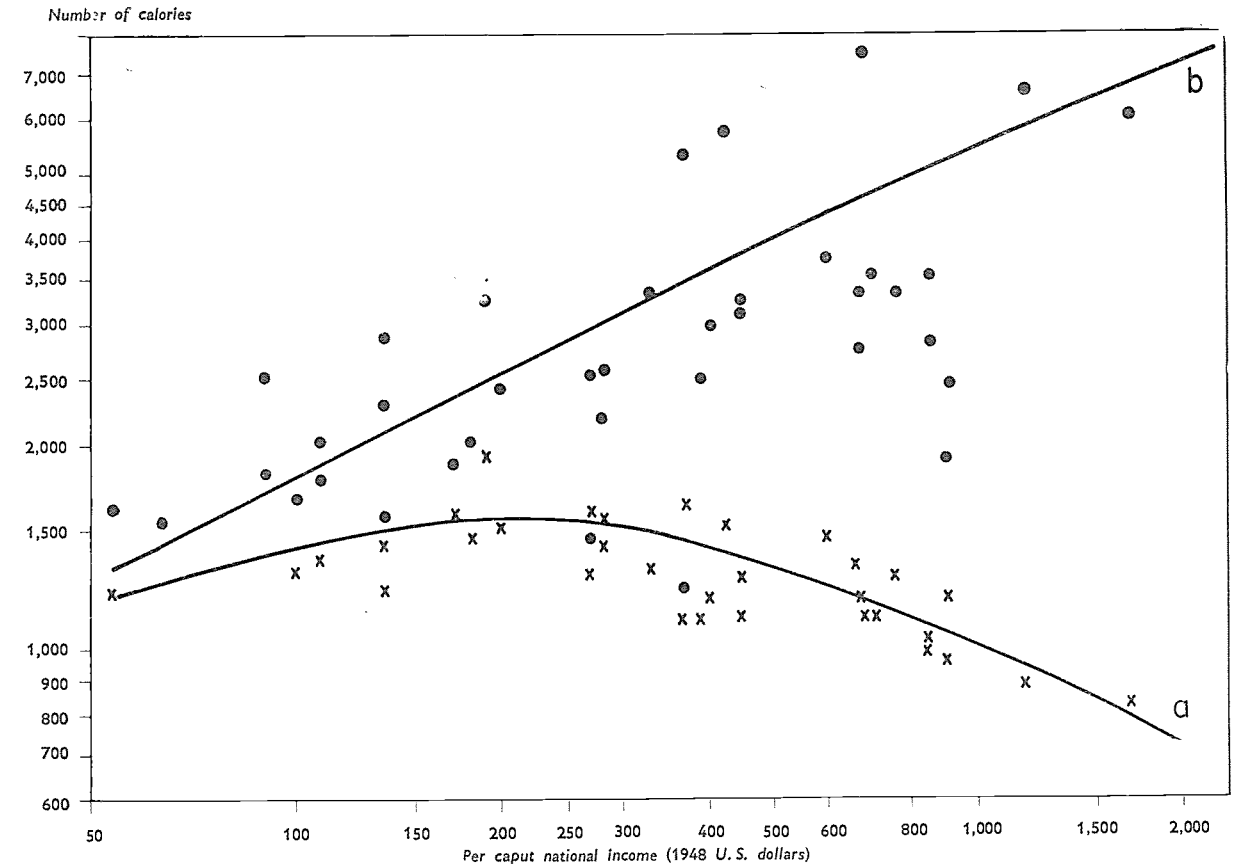
FIGURE III-7 (b). Estimated per Caput Calorie Supply as a Percentage of Estimated Calorie Requirements Plotted in Relation to per Caput National Income 1951-53 (Logarithmic Scale)



In all countries there are inequalities between the diets of different population groups, and, when these are considerable, the average food supply must appreciably exceed the average requirement if the lowest-consuming groups are to be adequately fed.

Staple Foods. In Figure III-8 the average number of calories per head per day derived from cereals and starchy foods, as indicated by food balance sheets, have been plotted in relation to average per caput national income. Curve (a) shows only the quantities used for

FIGURE III-8. Per Caput Consumption of Cereals and Starchy Foods (Calories) in Different Countries in Relation to per Caput National Income (Logarithmic Scale)



Source : FAO

a = Direct consumption for human food
b = Consumption for all purposes

direct human consumption. It brings out clearly the rise in the quantities of these foods consumed with increasing income at the lowest income levels, and the decline at higher income levels as they are gradually replaced by more expensive foods. The curve is in marked contrast to an earlier chart showing retail expenditure on staple foods (Figure III-5) which showed no such decline because of the increasing consumption of more expensive and more highly processed cereals and cereal products at the higher income levels.

Curve (a) is of great significance from the nutritional standpoint, but less so from that of agricultural planning. Direct human consumption is not the only use of these foodstuffs, and as average incomes rise their direct human consumption declines, but larger quantities are used for other purposes such as the preparation of beer and other alcoholic drinks, for industrial purposes (e.g., the manufacture of starch, industrial alcohol etc.), and above all for livestock feeding. Curve (b) therefore shows, also in terms of calories, the total quantities of these foods used for all purposes in relation to national income. In this case it is clear that there is no decline in requirements at the upper income levels, but rather a continuing rise. It is clearly this second curve which must be followed in estimating the total supplies of staple foods which must be produced or otherwise procured.

The scatter of points is rather wide and no attempt has been made to estimate the elasticity. This scatter would be expected, however, because of differences in diet and especially of agricultural practice. For example, feed grain requirements are much lower in countries such as New Zealand and Argentina where livestock are fed primarily on pastures, than

FIGURE III-9 (a). Per Caput Consumption of Animal Protein in Relation to per Caput National Income 1951-53.

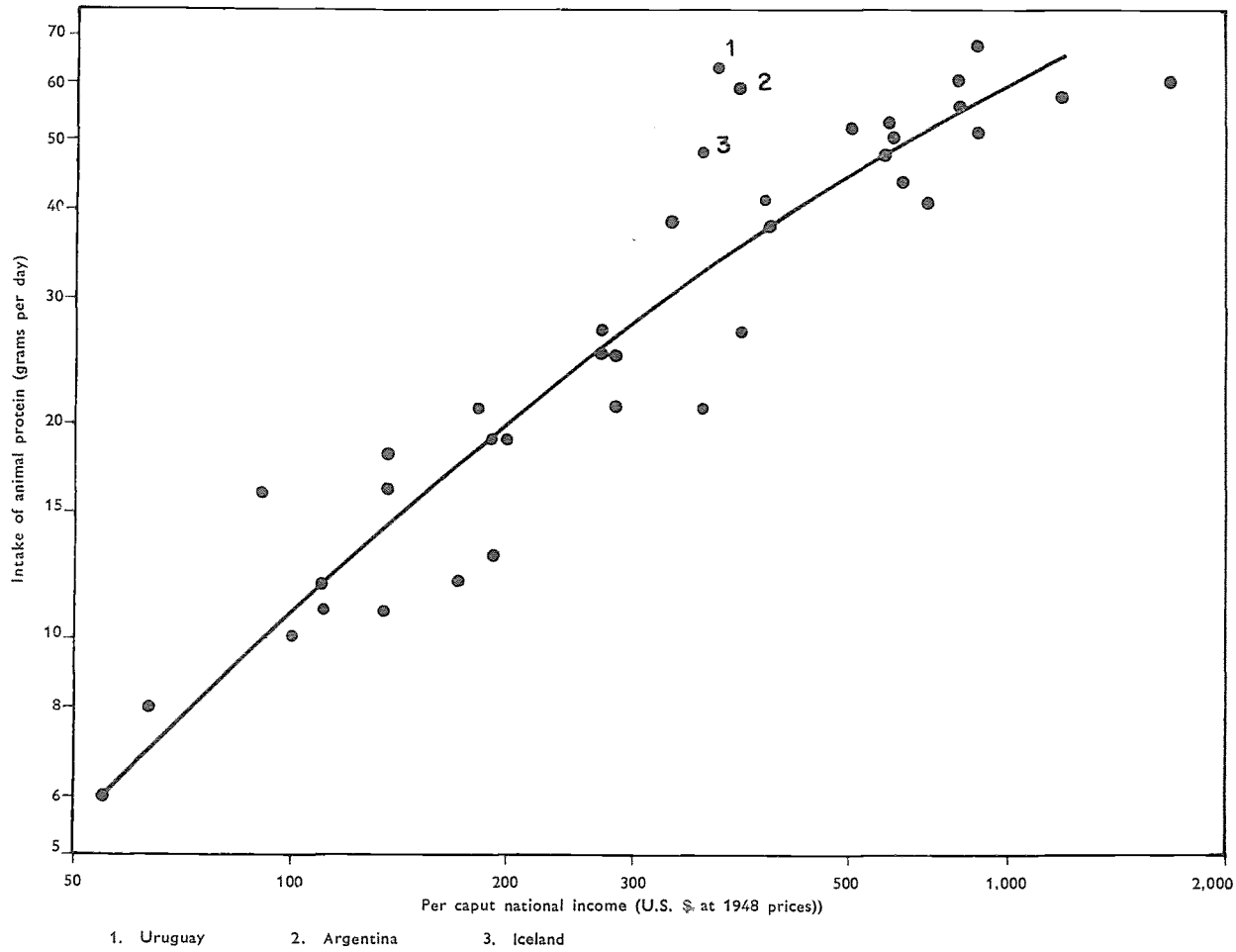
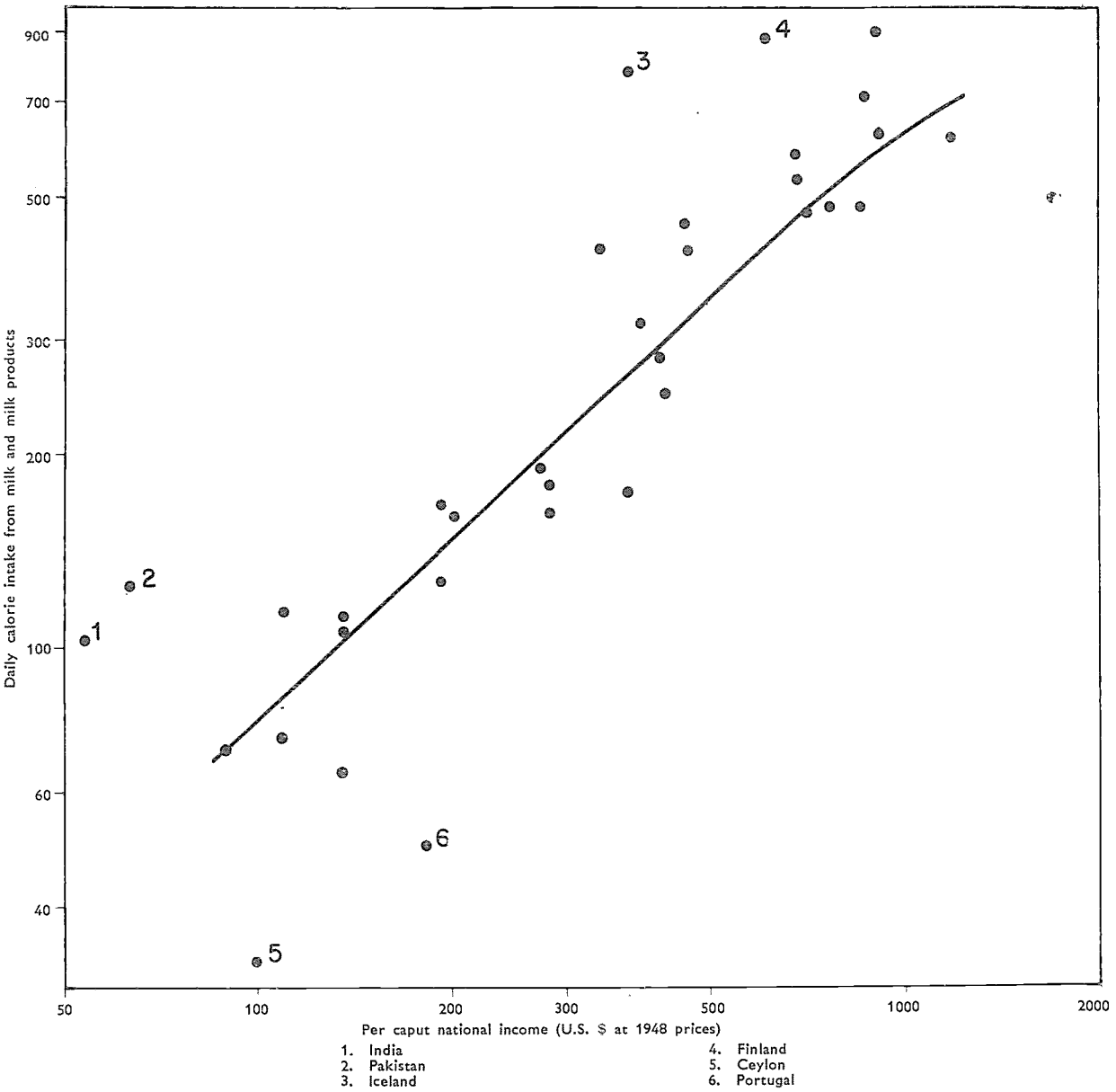


FIGURE III-9 (b). Per Caput Consumption of Milk and Milk Products (incl. Butter) in Relation to per Caput National Income 1951-53

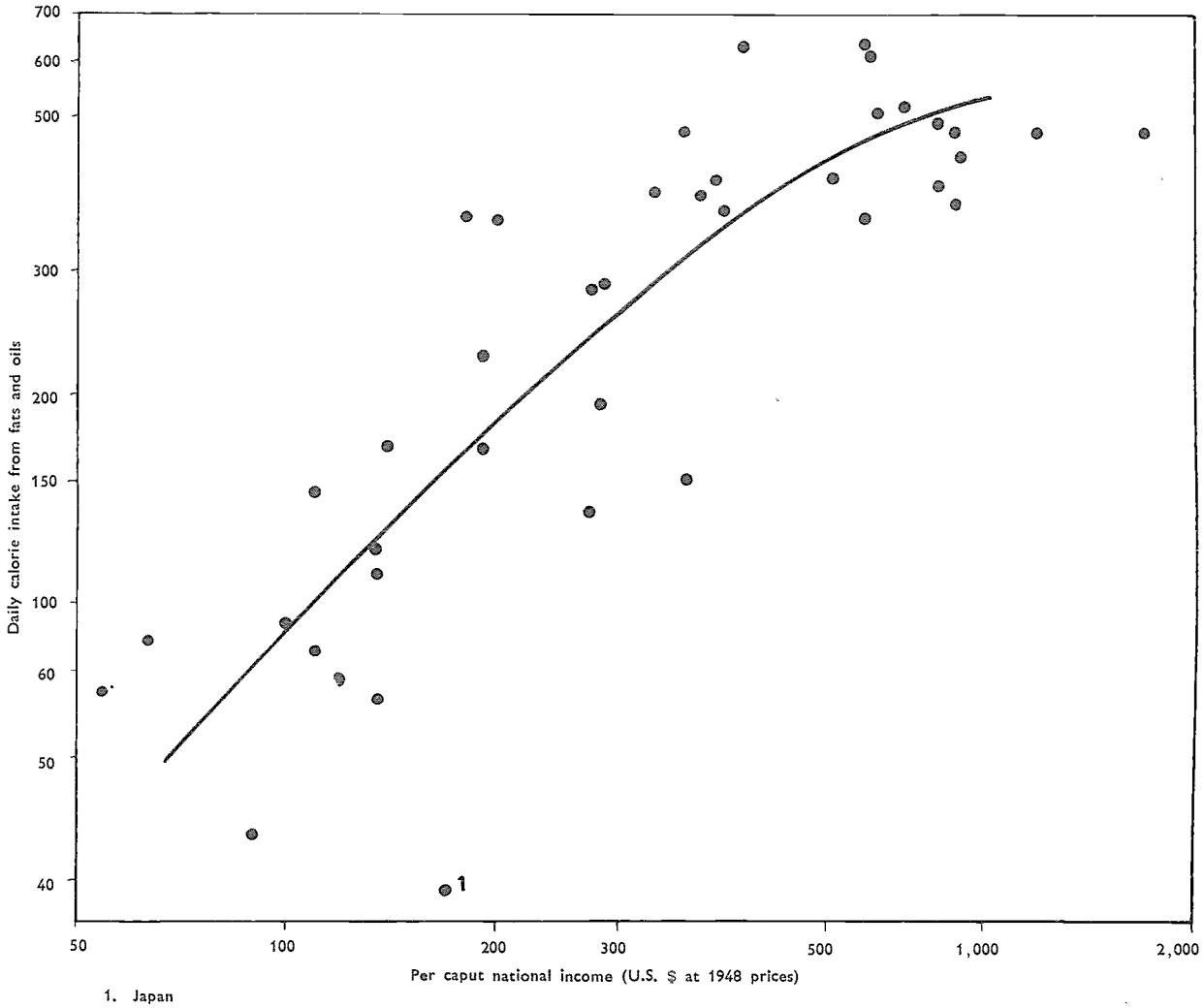


in countries like the United States and Denmark where feed grains are more largely used. Both the availability of pasturage, and the main types of livestock kept (i.e., grain consuming animals such as pigs and poultry, or cattle, sheep and other animals subsisting mainly on grass) go far to explain these differences.

Other Foods. Similar data from food balance sheets for the consumption of the more expensive foods ara set out in Figure III-9. The first chart (Figure III-9 (a) shows the supply of *animal protein* in grams per head per day in relation to per caput national income : in effect this may be taken as a composite measure of the consumption of milk (excluding butter), meat, fish and eggs. The elasticity indicated is fairly high (0.9 falling to 0.7) and the only points significantly off the general trend are those for Uruguay, Argentina and Ireland, where the high values may probably largely be explained by the relatively lower cost of meat and other animal protein foods in these exporting countries for meat and dairy products.

The second chart (Figure III-9 (b)) gives similar data, measured in calories per head per day, for *milk, milk products and butter.* It

FIGURE III-9 (c). Per Caput Consumption of Fats and Oils (including Butter) in Relation to per Caput National Income 1951-53



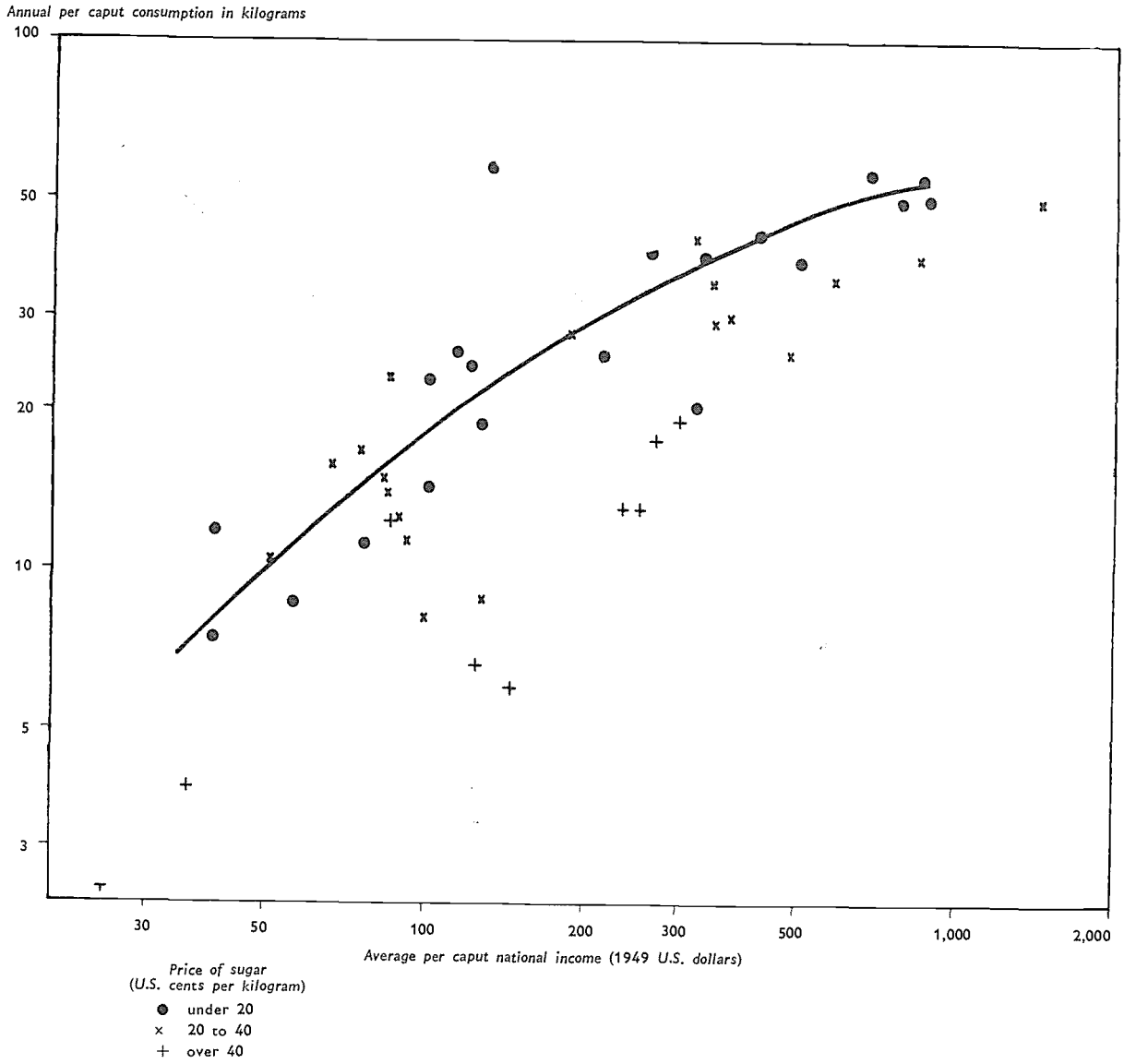
1. Japan

shows an upward trend, indicating an elasticity also of the order of 0.9, but with a fairly wide dispersion of points, which, however, appear to reflect the known dietary customs of the countries concerned. Thus the high values in relation to income for India, Pakistan, Ireland and Finland appear to reflect their considerable substitution of milk for meat, already mentioned, while the low values for Ceylon and Portugal reflect their relatively high consumption of fish.

The third chart (Figure III-9 (c)) for fats and oils, including butter, shows a similar trend with a somewhat less steep slope (elasticity of from 0.8 to 0.9), but flattening considerably toward the upper part of the income range. A similar chart (not reproduced) including calories from sugar with those from oils and fats has an elasticity which is still lower, about 0.8 at the lower part of the income range, and a smaller dispersion of points, suggesting some substitution of consumption between fats and sugar.

The curve for sugar itself (Figure III-10) shows a not very steep gradient, flattening considerably in the upper income range, and with a notably wide dispersion of points in the middle part of the range. Sugar is a conveniently taxable commodity, and for this reason as well as for differences in costs of production, shows rather a wide range of prices at the retail level. In the chart a differentiation has been made between low-cost (under 20 U.S. cents per kilogram), medium-cost (20-40

FIGURE III-10. Per Caput Consumption of Sugar in Different Countries 1949/50 in Relation to (a) Average per Caput National Income and (b) Retail Price (Logarithmic Scale)



U.S. cents per kilogram) and high-cost countries (over 40 U.S. cents per kilogram) and it will be noted that the relative prices of sugar go far to account for the differences in consumption in the mid-income range. [8] Generally the low-cost, high-consumption countries are the cane sugar producing and exporting countries, while the high-cost, low-consuming group includes a large proportion of Mediterranean countries or countries with somewhat similar climates.

[8] Influences of sugar price and income on consumption are studied in *FAO Commodity Series, No. 22*, September 1952, pages 60 through 74.

Comparison of Data from Different Sources

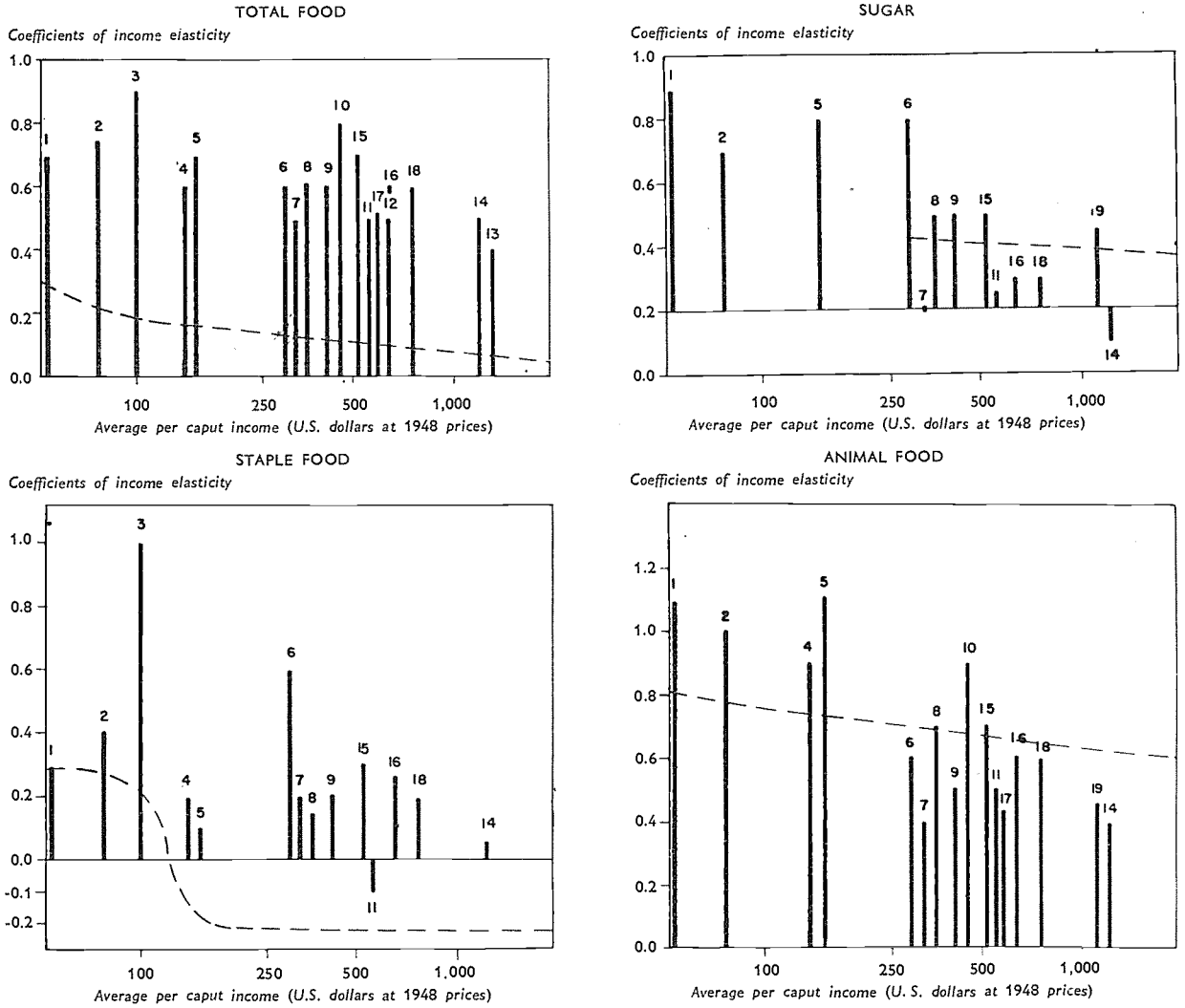
It will be well to recapitulate certain differences which must be borne in mind in comparing the data from consumer surveys quoted earlier, together with the few examples based on time series, with the estimates derived from food balance sheets. The geographical coverage possible under the food balance sheet approach is of course wider. More important, the food balance sheet approach, like most of the time series data, is based on the average consumption and the average income in a country ; the range covered both of consumption and of income is therefore smaller than when the analysis distin-

guishes between income groups within a country. Finally, the food balance sheet data relate to the *quantities* consumed and to total *income*, as do also most estimates under time series. The consumer data as presented above on the other hand, relate mainly to *expenditure* on food in relation to *total living expenditure*, the latter being taken as an indicator of income.

Taking into account these differences, the results obtained by the various approaches are reasonably consistent. That is to say the broad conclusions as to the likely response of food consumption to income changes are the same, even though there are appreciable differences in the values estimated for the actual coefficients of elasticity with respect to income. But this, as already noted, applies also to different estimates within one country, e.g., the United States.

The general picture which emerges from the

FIGURE III-11. Estimated Income Elasticities Coefficients at Different Income Levels : (a) Expenditure Elasticity in Relation to Total Living Expenditure Derived from Consumption Survey (*Vertical Bars*); (b) Quantity Elasticity in Relation to per Caput National Income as Derived from Food Balance Sheets (*Broken Line*) (Semilogarithmic Scale)



Source : Household budgets analysis.

1. India (Faridabad) 1954
2. Ceylon 1952/53
3. Ghana (Kumasi) 1955
4. Japan 1954
5. Portugal (Oporto) 1950/51
6. Portugal (Lisbon) 1948/49
7. Austria 1954/55
8. Ireland 1951/52
9. Finland 1950/51
10. Panama 1952/53
11. Switzerland 1936/37
12. Sweden 1948
13. Canada 1953
14. U.S.A. 1955
15. France (large cities) 1951
16. France (Paris) 1951
17. Sweden 1933
18. United Kingdom 1937-39
19. U.S.A. 1948

discussion in this section has been set out graphically for food as a whole, and for livestock products, basic foodstuffs, and sugar (Figure III-11). The vertical lines show the estimated *expenditure* elasticities at different income levels according to the consumer survey data. For this purpose the average elasticities have been calculated for each country taken as a whole. These estimates may be compared with the continuous line showing the *quantity* elasticities with respect to income which emerge from the food balance sheet data. The general uniformity of the pattern of response is significant, but no less significant are the irregularities from country to country, indicating that other factors too must be taken into account.

These various studies and measures indicate how complex and varied is the consumption picture which lies behind the national averages in any country. They show also how greatly the distribution of any increase in the national income may affect the situation. If the increase goes largely to the wealthy, it will have relatively little effect on total demand for food; if on the other hand it goes largely to the poor, the effect in increasing food demand will be far greater.

PRICE LEVELS AND FOOD CONSUMPTION

The relationship between food prices and food consumption levels can be looked at from two different points of view. The first, with which this section is mainly concerned, is the effect of changes in the price of food on the quantity consumed. The second is the effect which changes in the quantity of food produced (or otherwise available for consumption) are likely to have on prices. Most of the work on supply/price relationships has been done in the United States and has been concerned primarily with this second aspect, principally because of its usefulness in price forecasting. For this reason it has concentrated largely on short-term, year-to-year, or seasonal changes in supplies and their influence on price levels. There is some doubt as to how far the findings of these studies are applicable to an examination of the long-term effect on food consumption levels of shifts in price relationships.

In the United States the general trend of opinion among economists at the present time seems to be that the influence of price levels on food consumption is relatively minor, and that more attention should be paid to the effect of changes in income. This view is in some ways surprising even where incomes are at a high level, as in the United States, since published estimates of the elasticity of consumption in respect to price are commonly as large as, or larger than estimates of the elasticities in respect to income. In other words, a change of 1 percent in price appears to have an effect on consumption comparable to a change of 1 percent in per caput income. Examples are given below in Table III-3 for the United

TABLE III—3. COMPARISON OF TYPICAL ESTIMATES OF PRICE AND INCOME ELASTICITIES AT THE RETAIL LEVEL

PUBLICATION	Period covered	Commodity	Price elasticity	Income elasticity
United States				
1.	1922–41	All food . . .	−0.20	0.24
			−0.29	0.30
2.	1922–41	All food . . .	−0.25	0.25
			−0.34	0.27
			−0.53	0.33
3.	1922–41	All livestock products . .	−0.56	0.47
		All meat. . . .	−0.64	0.56
		Beef.	−0.79	0.73
		Pork.	−0.81	0.72
		Lamb	−0.91	0.65
		Chickens	−1.15	1.01
		Eggs.	−0.43	0.57
United Kingdom				
4.	1920–38	Beef and veal. .	−0.41	0.34
		Bacon and ham.	−0.88	0.55
		Eggs.	−0.43	0.54
		Fresh fish . . .	−0.57	0.92
		Milk.	−0.49	0.50
		Butter.	−0.41	0.37
		Bananas	−0.89	0.95
		Sugar	−0.44	0.09
		Tea	−0.26	0.04
		Potatoes	−0.56	0.21
Sweden				
5.	1921–38	Livestock products	−0.37	0.24
		Beef.	−0.50	0.30

1. M.C. Burk, "Changes in the Demand for Food from 1941 to 1950," *Journal of Farm Economics*, 1951.
2. M.A. Girschich and T. Haavelmo, "Statistical Analysis of the Demand for Food," *Econometrica*, 1947.
3. K.A. Fox, "The Analysis of Demand for Farm Products," *U.S. Department of Agriculture Technical Bulletin* 1081, 1953.
4. R. Stone, *The Measurement of Consumers Expenditure and Behaviour in the United Kingdom 1920-38*, Cambridge 1954.
5. H. Wold and L. Jureen, *Demand Analysis: A Studit in Econometrics*, New York, 1953.

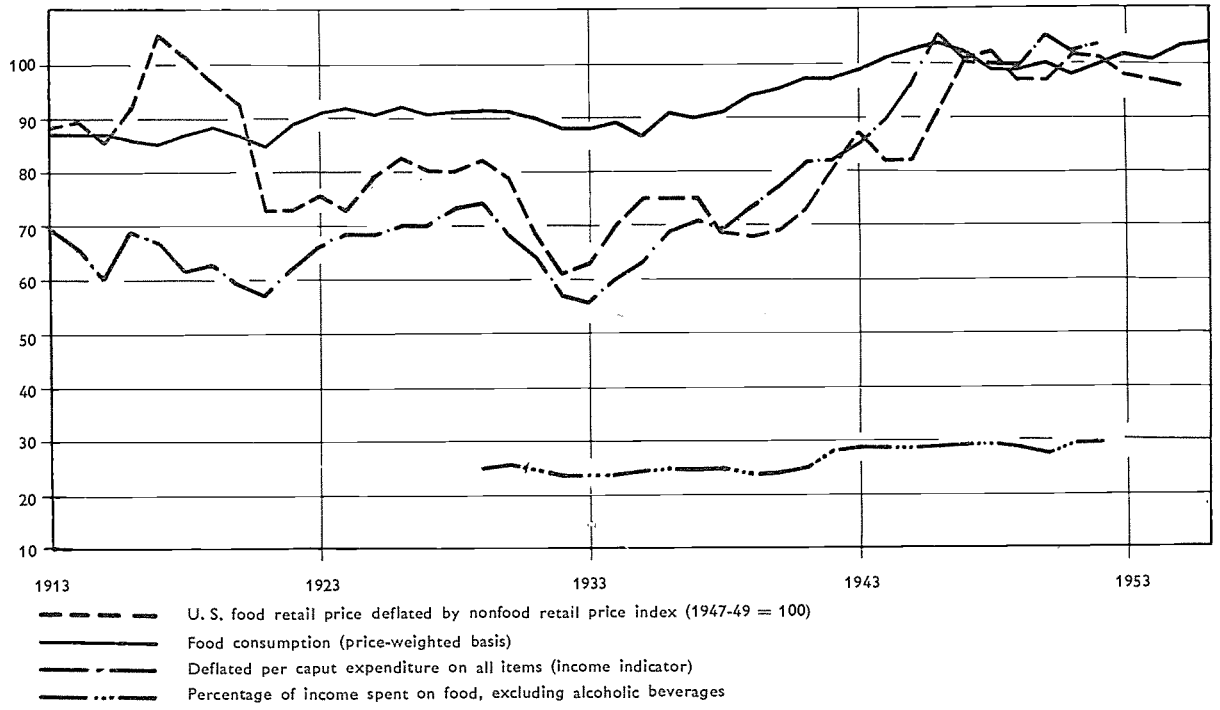
States and for similar relationships which have been found in Sweden and the United Kingdom. Since price changes are commonly larger and more rapid than changes in income, it might indeed be supposed that prices would be a factor comparable in importance with income in its influence on food consumption.

One reason for the current viewpoint that price changes are of limited importance may be that under American conditions, and in the short term, it is the supply which usually determines the price rather than vice versa. The quantity of meat, eggs or fruit produced in a season is usually consumed in the same season and the price shifts to the level which will ensure that result, given the level of demand operating at the time. But this is by no means always true even in the United States, notably under price support arrangements where, for example, for wheat, cotton or tobacco, the supply is adjusted by means of stockpiling operations to ensure that prices do not fall below the support price level. Another reason, discussed later, may be the generally greater significance at United States income levels of elasticities in respect of expenditures than of quantities.

A third reason may be that the influence of price tends to appear rather lower when one considers aggregate consumption, rather than single foods. It is apparent from Table III-3, for example, that the price elasticity of beef or pork is greater than that of meat as a whole. Similarly the price elasticity for meat is greater than that for all livestock products, which in turn is greater than that of all food. Thus to a considerable extent price elasticities reflect substitution ; if one food becomes more expensive there is a transfer to another which is less expensive, and vice versa. An increase in the price of butter relative to margarine leads some consumers to switch to margarine ; if butter becomes relatively less expensive they buy more butter. Except, perhaps, at very low income levels, price changes affect the pattern more than the level of consumption.

In the paragraphs which follow the influence of price changes is considered side by side with the effect of income, as the influences of these two factors always operate simultaneously. The effect of each can be separated by suitable analytical techniques, but this treatment to some extent obscures the issue since, in developed countries at least, the effect of each fac-

FIGURE III-12. Long-term Trend of per Caput Food Consumption in the U.S.A. (Price-weighted Index) in Relation to (a) per Caput Real Income (b) Price of Foodstuffs in Relation to Nonfood Prices and (c) Percentage of Disposable Income Spent on Food (Indices : Average 1947-49 = 100)



Source : U.S.D.A., *Consumption of Food in the U.S.A. 1909-52.*

tor appears to a large extent to offset that of the other, at least in the short run. For example, if incomes rise, the demand for food rises ; in the short term the supply usually cannot be greatly increased, so that prices rise to a level which largely nullifies the effect of the higher income. In effect, the immediate result of a rise in income is likely to be that the consumer pays more for about the same quantity of food. Some of the additional outlay finds its way back to the farm and may stimulate a larger production in the future, so that the longer-term effect may not the be same and may tend to raise the quantities of the food produced and consumed.

Figure III-12, for example, shows for the United States the long-term trend of food consumption as a whole in relation to per caput real income (for which total living expenditure has been used as an indicator) and to retail food prices in relation to non-food prices. A striking feature of the chart is the stability of the volume of food consumption (estimated on a price-weighted basis) which rises rather steadily by some 17 percent over the whole period from 1913 to 1956. Although retail food prices in relation to other prices fluctuated rather widely during the intermediate years, the difference between the relationship at the beginning and end of the period was rather under 10 percent, whereas per caput incomes in real terms rose irregularly by almost exactly 50 percent over the period. The increase of 17 percent in food consumption was thus due mainly to the rise in income, Ignoring the small price change, this would suggest an average income elasticity over this period of some 40 years of rather over 0.3 ; allowing for the small rise in retail prices, the coefficient may be nearer 0.4. Both values, though without special significance, are in line with those estimated earlier by other methods.

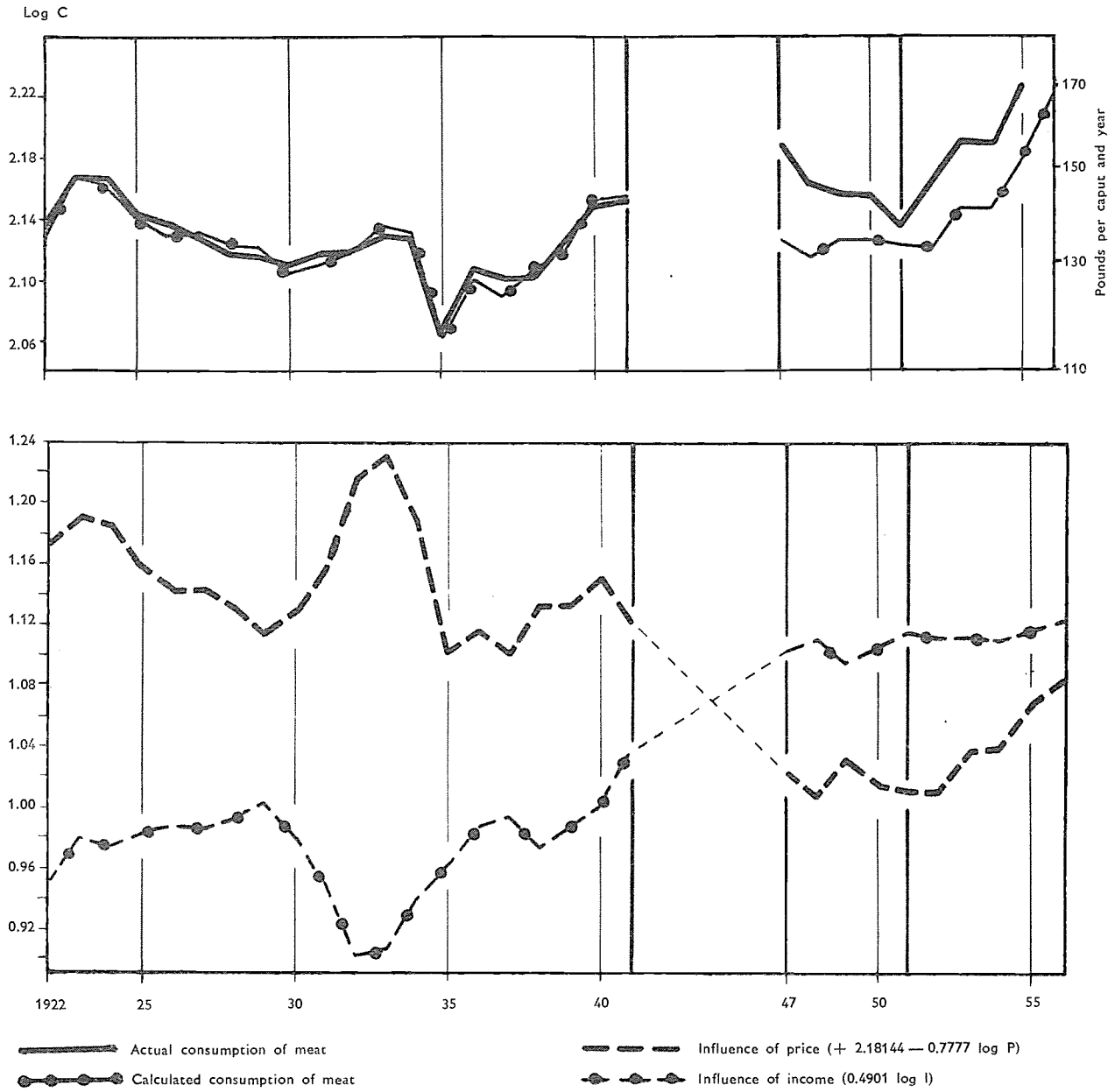
The main point to be made here, however, and it is for this reason that the chart is included, is that it illustrates how price and income elasticities work against each other. Thus when per caput incomes fell heavily during the nineteen thirties, retail prices also fell and the volume of food consumed was relatively little affected. Conversely, when per caput incomes rose during the two world wars the increased demand led to higher food prices, and again the effect on the total quantities of food consumed was limited, though variations in supplies and prices influenced the pattern of the diet. It is possible that the effect on food consumption during the second war would have been less but for the shortages of other goods which, to some extent, channelled spending power toward food. Again, once higher food consumption levels have been reached it may be that habit tends to limit the fall which might otherwise be expected when incomes decline, e.g., as in the nineteen thirties, for as already noted, most people are conservative in their diets. In any case the contrary influences of price and income changes appear to have a powerful stabilizing effect on total food consumption.

Yet another way in which food consumption levels are stabilized is by a limited variation in the proportion of income spent on food. This proportion is shown in the lowest curve in Figure III-12 and appears rather surprisingly to be influenced by the level of price rather than the level of income. For example, from 1929-30 to the trough of the depression in 1932-33, the food share of total personal expenditure in the U.S.A. fell from 25 to 23 percent, in line with the relative fall in food prices, notwithstanding a parallel fall of nearly 25 percent in real income. Similarly, since the sharp rise in retail food prices over the years 1943-46, the share of total personal expenditure devoted to food has risen to around 28-29 percent, in spite of the sharp rise in the level of real incomes. In this case, price movements seem to have introduced some temporary modification into the well-known Engels law that the percentage of income spent on food tends to fall as incomes rise.

Because of possible errors due to the complexities of the calculation, a study of the trend of an over-all index of food consumption should perhaps not be pushed too far. The combined effect of retail price and income is therefore shown in Figure III-13 for a single commodity group — meat. The chart is based on a formula derived by an American economist [9] and the actual data have been extended from 1951 to 1956 on the basis of statistics published by the U.S. Department of Agriculture. The two upper curves in the chart show the observed figures of per caput meat consumption and the estimates calculated from the formula link-

[9] E.J. Working, *The Demand for Meat.* Institute of Meat Packing. The University of Chicago, 1954. Table XXIII, p. 113.

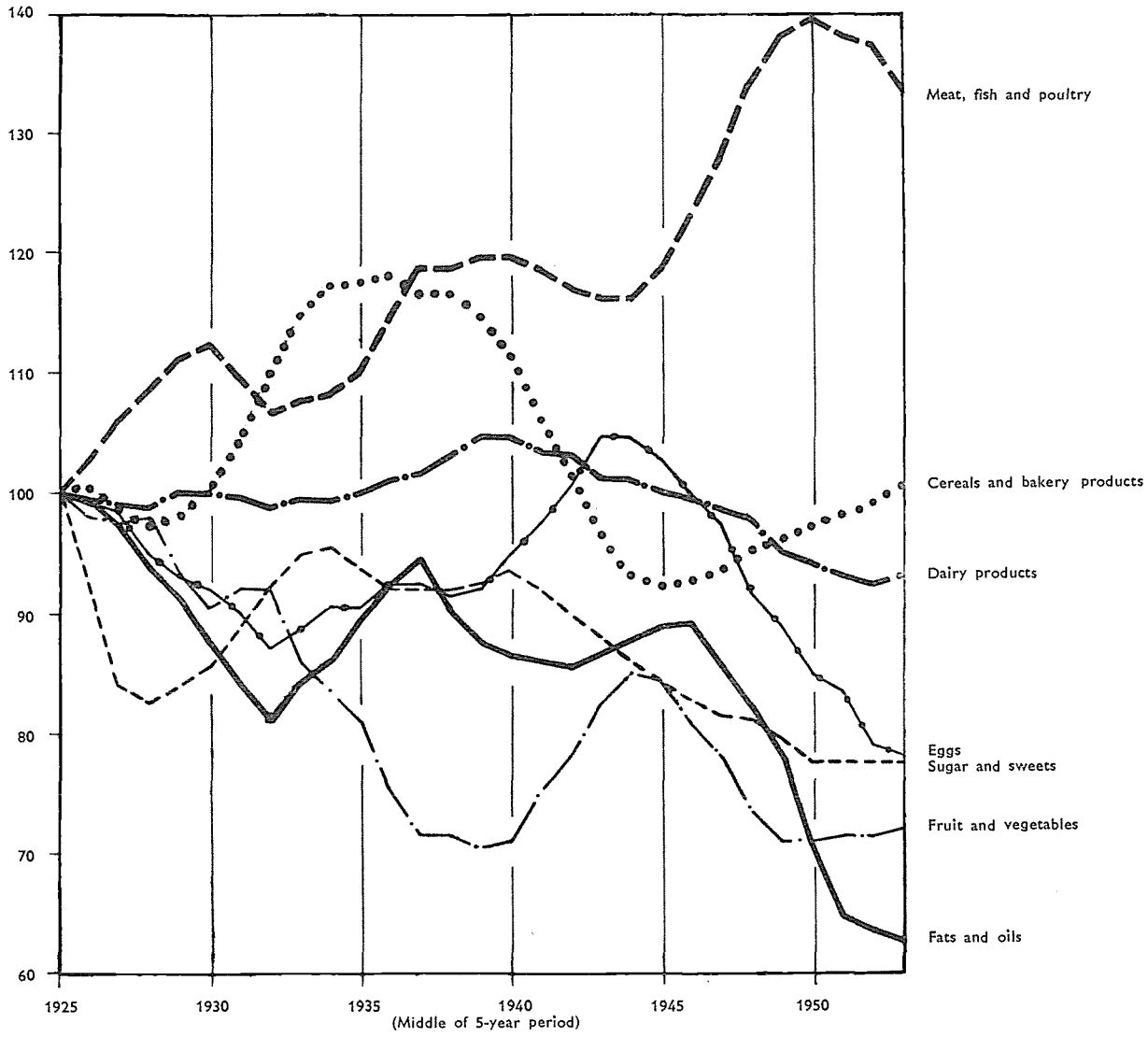
FIGURE III-13. Consumption of Meat in the United States 1922-56 in Relation to Average per Caput Income and to Retail Price Level



Note : The above chart is based on a formula derived by E. Y. Working : log C = + 2.18144 — 0.7777 log P + 0.4901 log I, where C is the per caput consumption of meat in pounds per year and where P and I respectively are deflated indices of the retail price of meat and of average per caput disposable income. The two upper curves show actual and calculated indices of meat consumption. The two lower curves analyze separately the influence of the price and income factors. The formula was calculated for the prewar period (1922-41). The postwar calculations up to 1951 are from Working's paper; subsequent years represent FAO's comparison.

ing consumption with price and income during the interwar period. Between the wars the fit is extremely close, but since World War II rather less so, suggesting that there has been some small shift in the relationships. The two lower curves analyze out separately the influence of price changes and income changes. Again the contrary influence of these two factors is evident, but it may be noted that the amplitudes of the variations in each curve (and hence their influence on the level of consumption) are of the same order of magnitude. A similar analysis has been made for the consumption of fruit and vegetables in the United

FIGURE III-14. Indices of Consumer Prices of Major Food Groups in the U. S. A.
Five-year Moving Averages (1923-27 = 100)



Source : U.S.D.A., *Consumption of Food in the U.S.A.* 1909-52

States with much the same result. These analyses suggest that, in the long run, price is comparable to income in the extent of its influence on food consumption, even in the United States.

The next point to be considered is how far price relationships between different foodstuffs in fact vary in the long run. If over a period of years, ignoring short-term variations due to annual differences in yields and other chance influences, the price relationship of the various foodstuffs remains fairly constant, the influence of price on the pattern of consumption is likely to be relatively minor, and changes in the pattern of consumption are likely to be influenced mainly by the income elasticities previously discussed. If, on the contrary, some foods become relatively cheaper over a long period (e.g., because of improved methods of production or simply a larger production) while others become relatively dearer, the changed price relationship seems likely to complicate the shift in the consumption pattern due to rising or falling incomes.

Again, the best available data relate to the United States. Figure III-14 sets out long-term trends in the retail prices (in real terms) of some of the main groups of foodstuffs. [10] It is evident that during the past 30 years relative

[10] Retail price indices for individual food groups deflated by the retail price index for all foods to show price movements in relation to food prices as a whole.

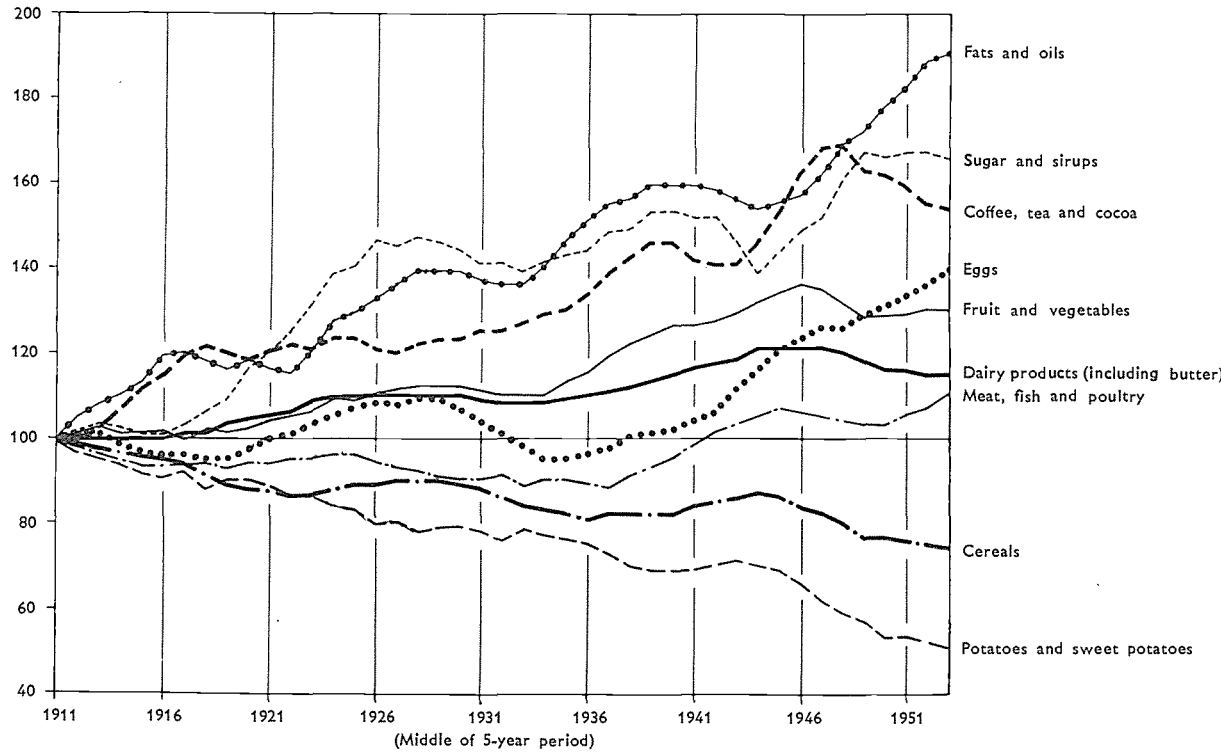
prices of, for example, meat have tended to rise, while relative prices of other foods, for example, eggs, have tended to fall. The magnitude of these changes is quite considerable. Thus, in real terms, retail prices in the group " meat, poultry and fish " have risen by nearly 40 percent. For meat alone the rise is likely to be over 40 percent, since real prices of poultry have tended to decline as a result of improved methods of production and higher conversion efficiencies of feed to poultry meat. On the other hand, retail prices, in real terms, of eggs have declined by some 15 percent, of sugar and sweets by more than 20 percent, and of the groups "fruit and vegetables" and "oils and fats (excluding butter) " by around 30 percent.

Actual changes in per caput consumption levels in the United States are shown in Figure III-15. In this instance, available data go back to 1909-13 and the chart therefore covers the whole of this period, during which, as already noted, per caput real incomes increased by about 50 percent. The steady decline in the per caput consumption of cereals and potatoes evident in Figure III-15 would be expected from the negative income elasticities (in respect of quantities) of these foodstuffs at high income levels and calls for no special comment. Prices of cereal products at the retail level have changed comparatively little since 1923 relative to food prices in general, and thus can have had little influence on the situation.

For meat, poultry and fish, however, the situation is different. Quantity elasticities for this group in respect to income appear to be of the order of 0.5, so that a rise of 50 percent in income might be expected to be associated (other things being equal) with a rise of some 25 to 30 percent in the quantities consumed. In fact, the rise since 1909-13 is of the order of 10 percent, and it is difficult not to relate this with the increase in retail prices of this food group relative to retail prices of foods as a whole.

Similarly, it seems likely that the very sharp increases in the consumption of both sugar and fats, for which income elasticities are lower than for meat, are related to the steady decline in retail prices of sugar and fats relative to the general level of retail food prices. For fats, of course, the main mechanism has been the

FIGURE III-15. Indices of per Caput Consumption of Major Food Groups in the U.S.A. Five-year Moving Averages (1909-1913 = 100)



Source : U.S.D.A., *Consumption of Food in the U.S.A* 1909-52.

gradual substitution of butter by margarine. Similarly the more rapid growth of consumption of eggs than of meat, for which quantity elasticities in respect of income are comparable, appears likely to be linked with the relative decline in the retail price of eggs.

If these long-term price influences operate in the United States where most consumers have a considerable margin of income after satisfying their food requirements, since food throughout the period has accounted for less than 30 percent of total personal expenditure, it seems probable that they may have a still greater effect in countries where a much larger share of consumers' incomes has to be spent on food.

The above considerations relate of course to quantity elasticities. If expenditure elasticities are under consideration, the influence of price is very much less, since the smaller quantities bought if prices rise are offset by the higher prices paid, and vice versa. When, as for meat in countries at a high income level, the price elasticity approximates to 1.0, the effect on expenditure will be negligible. The point is made clear in Table III-4, prepared purely for purposes of illustration, which shows the theoretical effect on the volume of purchases and on total expenditure of a 10 percent change up or down in the price of foods at varying levels of price elasticity.

For foods such as bread, where the quantities bought are relatively independent of price (at least in relatively well-off communities) price changes are reflected closely in changes in expenditure. For foods such as milk and eggs, with a price elasticity (in such communities) of around 0.5, price changes are likely to be reflected by about half the percentage change in expenditures. Finally, as noted above, expenditures on food with an elasticity in the neighborhood of 1.0 will be largely independent of price. It is perhaps the limited influence of price changes on food expenditures which has led to some tendency to discount the effect of price on consumption, in comparison with income. It may also account for the remarkable uniformity in the over-all relationship between incomes and food expenditures, between different classes and different countries, already noted (Figure III-3).

TABLE III — 4. LIKELY EFFECT ON VOLUME OF PURCHASES AND TOTAL RETAIL EXPENDITURE OF 10 PERCENT CHANGE IN PRICES FOR FOODS WITH DIFFERENT PRICE ELASTICITIES [1]

FOODSTUFF	Price elasticity	Volume of Purchases		Total Retail Expenditure	
		With 10 % increase in price	With 10 % decrease in price	With 10 % increase in price	With 10 % decrease in price
		Percentage			
Bread	−0.1	99	101	109	91
Milk, eggs	−0.5	95	105	105	95
All meat, fish, sugar	−0.6	94	106	104	95
Pork, beef, poultry	−1.0	91	111	100	100

[1]The approximation that the elasticities reflect on consumption of a 1 percent change in price (or income) becomes increasingly inaccurate the larger the quantities involved; the values shown are calculated by the correct logarithmic formula.

Retail Prices and Farm Prices

The relationship between prices and consumption can be a two-way effect. A change in the quantity available for consumption influences the price and vice versa. Consumers are, of course, affected only by retail prices, but supply/price relationships percolate back to the farm. At the farm level, indeed, their influence is usually intensified because of the well known inflexibility of distribution margins. Thus, an increased supply leading to a decline of, say, 10 percent in retail prices may often lead to a fall of 15 to 17 percent in farm prices and receipts and even more for highly processed foods, such as bread or canned milk, for which the cost of the

TABLE III—5. UNITED STATES: AVERAGE EFFECT OF A CHANGE OF 1 PERCENT IN RETAIL PRICES ON PRICES AT THE FARM LEVEL

FOODSTUFF	Percent
All food livestock products	1.47
All meat animals	1.57
Hogs	1.75
Beef cattle	1.74
Lambs	1.06
Chickens	1.35
Eggs	1.08
Fluid milk	1.64
Condensed milk	2.13
Milk for cheese	1.76
Butter fat	1.35

Source: K.A. Fox, "Factors Affecting Farm Income, Farm Prices and Food Consumption", *Agricultural Economics Research*, July 1951.

original foodstuff is proportionately smaller. Table III-5, based on United States data, shows the approximate effect on farm prices of a change of 1 percent of prices at the retail level.

International Comparison

Differences in consumption patterns between countries may be partly explained by differences in the price structure. Reference was made earlier to an FAO study analyzing the per caput consumption of sugar in 49 countries.[11] In this case it was found that 81 percent of the variations in consumption levels between countries could be explained by the influence of income, 50 percent by the influence of prices, and 86 percent by combining the influence of both income and price. The price elasticity of sugar was estimated to be — 0.66 (±0.9). In other words, if in two countries at about the same income level, and with other things equal, the retail price of sugar in the first is 10 percent higher than in the second, the per caput consumption of sugar in the first is likely to be 6-7 percent lower than in the second.

The influence of prices on consumption has been examined over a much wider field in an OEEC publication,[12] which compares the consumption of both food and nonfood items in the United States, the United Kingdom, France, Italy and Western Germany. Thus, in comparing, for example, consumption in the United States and Italy it was found that Italians consumed more of the foods which are cheaper in Italy than in the United States, such as pasta, cauliflowers, artichokes, etc., and less of those foods which are more expensive in Italy, such as canned vegetables and poultry. When going from Italy to the United States, there is a substitution according to relative prices from fresh vegetables toward canned vegetables, from wine to spirits, and from meat to poultry. Similar price substitutions were observed when comparing the American with the British, French and German consumption patterns.

Price Relations in Underdeveloped Countries

Nearly all the work already published on price elasticities for foodstuffs relates to industrialized countries at a fairly high income level and this should be borne in mind in considering the above data. It was shown earlier that income elasticities for nearly all foods are much higher in economically underdeveloped countries at a low level of income than in better-off countries, and there is no reason to suppose that price elasticities are of any wider applicability. Consumers whose incomes leave little margin above the mere subsistence level are likely to curtail their purchases more sharply when food prices rise than those who are better off, and vice versa. The influence of price relationships on food consumption at low income levels remains, however, one of the most serious gaps in our knowledge of factors influencing food consumption. Data on this aspect would be of great value both for economic planning and for nutritional studies, particularly in underdeveloped countries. In such countries the high percentage of the population living on farms and growing most of their own food greatly complicates the problem. Any evaluation of the incomes of subsistence farmers must be to some extent arbitrary. Moreover, price changes affect a farmer both as a seller and as a buyer of foodstuffs, and it would seem important to distinguish sharply between the influence of price changes on urban and rural consumption.

Nutritional, Social and Other Factors Influencing Food Consumption

The distinction between the possible reactions of rural and urban consumers to price changes is likely, however, to be influenced by more than the strictly economic factors of income and price, and the problems of urbanization should be considered partly from an economic and partly from a social standpoint. This may serve as a transition to some of the more purely social and nutritional aspects of food consumption problems.

Urbanization

The effect of urbanization on food consumption is becoming an important question in many underdeveloped countries now engaged in more intensive industrialization. Nutritionists are concerned with the effects on health of the sharp change in the diet which may ensue when rural people migrate to towns. Those concerned with agricultural and economic policy have to consider the effect of urbanization on total demand for food and also the greatly increased

[11] *FAO Commodity Series No. 22*, September 1952.
[12] Gilbert and Kravis, *An International Comparison of National Products and the Purchasing Power of Currencies*, OEEC, 1954.

TABLE III—6. CONTRIBUTION OF DIFFERENT FOODS TO AVERAGE CALORIE INTAKES IN INDIA

FOODSTUFF	Agricultural Workers	Industrial Workers
	Percent of calories derived from foodstuff	
Cereals	82.4	72.8
Pulses	7.3	8.7
Fruit and vegetables	2.1	2.5
Meat and fish	0.9	2.1
Milk and milk products	1.6	1.6
Ghee and oil	3.5	7.6
Sugar and sugar products	1.0	2.4

strains on the food marketing system created by the growth of towns in areas where until recently most of the people lived on farms, largely on a subsistence basis.

There is little direct evidence of the influence of urbanization on food consumption. Limited dietary surveys in India undertaken during the period 1935-48 indicated that urban diets were generally somewhat better in quality, in that the contribution of protective foods such as fish and livestock products to the diet was appreciably higher for industrial workers than for agricultural workers (Table III - 6).

More definite evidence pointing in the same direction comes from Japan, where urbanization is proceeding rapidly, and where industrialization has gone much further than in other Asian countries. Japan may thus provide a pointer to likely developments in other countries. Separate data on food consumption levels in urban and rural areas are collected in the national nutrition surveys which have been conducted annually since 1946. Comparative data for two recent years are set out below (Table III-7). It may be noted that the differences between the two areas are of the same type as those associated with changes in income. The consumption of livestock products, fruit and vegetables, oils and fats and sugar was appreciably higher in towns, while the consumption of starchy roots, and to a less extent of cereals, was higher in the country. Within the cereal group, wheat consumption was strikingly higher in towns (perhaps largely a matter of availability) and that of rice and barley higher

TABLE III—7. FOOD CONSUMPTION IN RURAL AND URBAN AREAS OF JAPAN: 1950 AND 1954

	Rural		Urban		Urban as Percentage of Rural	
	1950	1954	1950	1954	1950	1954
Calories	2,126	2,122	2,041	2,010	96	95
Nutrients (grams per day)						
Protein: Animal	15	20	21	24	140	120
Total	67	69	71	69	106	100
Fats	16	19	21	24	131	126
Commodities (grams per day)						
Cereals: Total	481	485	469	460	98	95
Rice	355	358	305	320	86	89
Wheat	48	58	110	94	231	162
Barley	71	65	50	42	70	65
Other	7	4	3	4	43	100
Starchy roots	146	90	89	60	61	67
Pulses	53	66	56	71	106	108
Vegetables	258	227	211	201	82	89
Fruit	32	29	60	49	188	169
Milk	5	10	10	17	200	170
Meat	7	7	14	17	200	243
Eggs	4	9	9	15	225	167
Fish	52	73	79	83	152	114
Oils and fats	2	4	4	6	200	150
Sugar	6	14	10	17	167	121

in the country.[13] The total calorie supply was somewhat larger in country areas, but this was because of the larger consumption of carbohydrates, and the consumption both of fats and of animal protein was higher in towns. The quality of the diet in urban areas thus appears to have been generally higher, and the somewhat lower calorie intake possibly reflects the more sedentary character of town life, involving less expenditure of energy.

Data on income are not collected in the Japanese nutrition survey, and there is thus no evidence as to how far the above differences may be explained on this basis, i.e., whether in families at the same income level most of the above differences in food consumption between town and country would tend to disappear. Unpublished survey data for a recent period, made available to FAO by the Government of India, suggest that this may be the situation there. At any given income level a close relation was found between total food consumption in urban and rural families, though in the latter much of the food was of course produced on the family holding. Consumption at any income level tended to be somewhat higher in the country for cereals, in towns for fats and oils. But for sugar, milk and livestock products as a whole there was virtually no difference in consumption levels between town and country dwellers with comparable incomes. For all these above foods except cereals, very high income elasticities (over 1.0) were apparent in both town and country.

If confirmed in India and in other underdeveloped countries, these findings are of considerable importance from the angle of agricultural planning. They indicate that a rise in farm prices, or other development tending to increase rural prosperity, is likely to reduce the proportion of the food output marketed, and vice versa, though the extent of this response would vary considerably from one product to another. This has long been a point of controversy.

So far as is known, data of this kind are available for no other underdeveloped country. In countries at high income levels, however, much the same result emerges from consumer survey data. Thus in the 1955 consumer survey in the United States, separate consumption figures were published for urban, rural nonfarm and farm families. Over-all expenditure elasticity was lower in the farm families, mainly because of the very low elasticities for some home-produced foods — milk, eggs, fruit and vegetables — for which farm consumption was high. Expenditure on meat, and especially on meals in restaurants and alcoholic beverages, was higher relative to income in nonfarm families. In general, however, the differences were of a rather minor character and are gradually becoming less, while the proportion of self-sufficiency on farms is steadily decreasing.

In the United Kingdom, where differences between farm and nonfarm incomes are smaller than in most countries, consumer surveys indicate no marked differences in food consumption between town and country.

While the evidence is clear that any rise in per caput national incomes as a result of industrialization and economic development is likely to raise the consumption of the more expensive protective foods, it thus is not yet clear whether the associated urbanization, of itself, apart from income changes, greatly influences this development or other changes in food consumption patterns.

Urbanization, moreover, whether or not accompanied in any individual instance by higher incomes, does not always result in nutritional improvement. On the contrary, there are some examples to show that the diets of rural people may sometimes deteriorate when they move to towns, in the absence of measures to safeguard their nutritional levels. For example, surveys carried out among the Bantu in the Union of South Africa showed that their normal rural diet of whole grain cereals and milk is often replaced by one based on refined maize meal, white bread and mineral water and that efforts to spread nutrition education among the urbanized Bantu are necessary to counteract that tendency. Another example is the increasing incidence of beri-beri, a serious deficiency disease, in some countries in South and East Asia as a result of the spread of small rice mills producing highly milled and polished but vitamin-deficient white rice. Many rural people, who normally consumed more nutritious home-pounded rice, shift to the more attractive white rice when they are urbanized. There are also indications that protein malnutrition is more serious among such groups than among rural

[13] A survey of rural diets in Ceylon in 1944-45 indicated, however, that bread and flour provided over one third of the total cereal supply, though the consumption of cereals other than rice in rural areas had been found to be negligible in a similar survey in 1939-40.

However, though hourly earnings of food-marketing workers have increased some 43 percent since 1947-49, the labor cost per unit of product has risen only 26 percent. Thus some savings have been achieved by greater productivity, though less spectacular than those in agriculture itself or in manufacturing industry. Profits of food marketing firms were highest in relation to sales turnover in 1946, when the percentage marketing margin was lowest, and have shown no marked trend in recent years.

A major contributor to the rise in marketing costs has been the provision of additional services: packaging, processing and the preparation and combination of foods in convenient forms such as frozen ready-cooked meals, etc. More food is being packaged in smaller-sized lots, at additional cost, because consumers want to buy it in smaller units and are prepared to ignore the extra charge. Another factor is the elimination of seasonableness in consumption. In the United States housewives now expect to buy the same fresh food all the year round, thus calling for much more refrigeration and the transport of products from more distant production areas. Again, the production of processed foods in the United States has increased by 50 percent since 1940 compared with an increase in total food production of about one third. The provision of restaurant and cafeteria services is yet another factor that adds greatly to cash outlay on food marketing as more persons eat away from home.

There appears to be some danger that some of the more elaborate types of food processing and packaging which have been evolved in the United States and other advanced countries may be taken up and popularized by commercial publicity in the newly developing countries, before they attempt to match the highly efficient basic methods of food marketing which have been built up in the advanced countries over many decades. To do so would make the worst of both worlds: to accept the additional costs, without securing the greater efficiencies and economies which in the more advanced countries go with them.

Such a situation could delay considerably the raising of nutritional standards in underdeveloped countries. In countries at the higher income levels the provision of expensive food processing and services is unlikely to have much effect on the general nutritional status of the people though it may have some other disadvantages. In countries at much lower income levels, on the other hand, the diversion of consumer expenditure to such "trimmings" may leave the poorer consumers unable to buy enough of the foods which nutritionally are more important. In such countries the problem of making a wise choice between the variety of foods, fresh and processed, which are becoming available in cities is a formidable one, especially in the absence of uniform weights and measures and accepted grades and standards. There is thus a real need in such countries not only for improvements in the basic system of food marketing, but also for much increased consumer education, preferably under government auspices, to enable consumers to obtain the maximum benefit from such improvements.

CONCLUSIONS

It may be repeated that the common pattern of diet in most countries is a basis of cereals and starchy foods, supplemented to the extent that the consumer can afford by more expensive and attractive foods, including the so-called protective foods. When incomes first begin to rise above the subsistence level, the more expensive foods are largely additional to the basic diet. At higher income levels the consumption of the staple foods begins to decline and to be replaced by a larger intake of protective and other more expensive foods, which ultimately may make up the larger part of the diet.

These considerations in themselves point to the predominant importance of income in determining both the level and pattern of food consumption. One of the most striking findings of the present enquiry is the remarkable uniformity of the relationship between income and expenditure on foods, over a wide range of countries at different levels of income and economic development, and with widely varying cultures and food habits (Figure III-3). This fact re-emphasizes the essential connection between economic development and nutritional improvement. Until productivity is raised and the general run of people in a country earn higher incomes, any substantial improvement in nutrition is unlikely, though some improvement for the population as a whole, and major improvements for special groups such as expectant and nursing mothers, and children of school and subschool age, may be obtained without income changes by, e.g., nutritional

education and by special welfare schemes. These may be of great importance for the health of the next generation.

The barrier to satisfactory nutritional levels imposed by a low level of incomes and earnings is apparent from Table III-8. This table shows the number of work hours necessary for an industrial worker, at the average wagerate in the country for workers in manufacture, to earn the cost of a day's food at three different dietary levels: the first representative of diets in economically underdeveloped countries, the second representative of diets in countries at an early stage of industrialization, and the third representative of diets in economically advanced countries. In each case the diets were constructed and costed in terms of the foods customarily eaten in the countries concerned, and therefore differed slightly from country to country.

It is apparent that in the poorer countries the more nutritious and expensive diet C would be utterly beyond the means of the average factory worker, unless he were a single man without dependents. Even for the meager diets usually consumed in these countries, the number of hours to be worked is greater than is necessary in economically developed countries for the much superior diets which they enjoy. Wages in manufacturing are taken in the example as a rough indicator of the income level of the working-class population; they are indeed usually higher than average incomes of peasants and farm workers. Moreover urban diets, as was shown earlier, tend to be better than rural diets. For the working-class population of the countries taken as a whole, the picture emerging from Table III-8 may therefore be rather too favorable. While output, earnings and incomes in underdeveloped contries remain at their present level, the diets of large sections of their populations must remain inadequate and unbalanced. It is not of course implied that only diets of type C can provide an adequate nutrition, though it may well indicate the direction in which the dietary pattern would move if consumers in underdeveloped countries had higher incomes.

TABLE III—8. NUMBER OF HOURS' WORK REQUIRED FOR AVERAGE FACTORY WORKERS TO EARN THE COST (AT RETAIL PRICES IN 1953) OF THREE REPRESENTATIVE DIETS FOR ONE PERSON FOR ONE DAY

CALORIE VALUE OF DIET:	Diet A 2,100	Diet B 2,500	Diet C 3,000
GRAMS OF ANIMAL PROTEIN:	10-12	15-20	40-45
Country	*Hours of work*		
India	2.1	2.9	4.5
Japan	1.8	2.3	3.8
Italy	1.1	1.5	3.2
Mexico	0.6	0.8	1.4
Sweden	0.4	0.6	0.9
Denmark	0.3	0.4	0.7
Canada	0.2	0.3	0.5
United States	0.2	0.2	0.4

A further comment may be made on the table. While the cost of a given diet varied considerably from country to country according to the price level, there was a surprising uniformity in the relative costs of the three diets. In all the countries diet B cost about one third more than diet A (range 125 to 142 percent) and diet C rather more than twice the cost of diet A (range 210 to 300 percent).

Another important conclusion, which emerges from the earlier sections of this chapter, relates to the very high elasticities of food expenditure and consumption with respect to income in the lowest income groups. At very low income levels, income elasticities of more than 1.0 for protective foods are frequent. In other words a rise of 10 percent in income in such groups may be expected to lead to an increase of over 10 percent in their present low expenditure on these foods. This means that a very substantial improvement in nutrition and health may be expected in underdeveloped countries with only a modest rise in per caput national income, provided that the increased wealth is fairly evenly spread over the population, and not largely restricted to a relatively small group of wealthy people. Clearly, however, conflicting interests may arise here, even from a national point of view. If the increased income is widely spread a larger proportion may be devoted to current expenditure and a smaller proportion to investment than if it is more narrowly confined to a small part of the population. Hence future economic progress may be retarded. But in estimating the most favorable distribution and balance for their own circumstances, governments should remember that the capacity for work and productivity can be seriously impaired in a poorly fed population.

A second implication of the high elasticities of food expenditure at low income levels is

populations. Thus the danger of increasing malnutrition, especially among the newly urbanized populations, is very real unless adequate steps are taken to spread sound nutrition and home economics education among them. However, more adequate information on the effects of urbanization on diets of rural people is needed, and further surveys, particularly in those areas where urbanization is now taking place rapidly, would be extremely valuable.

Influence of Nutritional Measures

Nutritional measures to improve diets deserve to be considered in greater detail, as they are undoubtedly of great significance, although their effects cannot always be measured easily and reported in quantitative terms. The influences of such nutritional measures and of social attitudes on consumption can be described, in a certain sense, as counterbalancing each other. Consumer education in nutrition and home economics can lead and indeed has led to increased consumption of various foods in specific areas. Some examples are increased consumption of fish in Mexico, of wheat products in Japan and green vegetables in Puerto Rico, and the increase in liquid milk consumption mentioned earlier in this chapter. However, changes in traditional food habits and patterns cannot be brought about either easily or quickly. Indeed, it may be impossible to change some of them, especially those based on religious convictions, such as the prohibition of beef for the Hindu and pork for the Moslem, although the pressures of modern life can sometimes overcome even such barriers. Thus the effectiveness of nutritional measures in influencing food consumption is often conditioned by the retarding force of social attitudes and, in this sense, the two sets of factors can be considered as contradictory.

Apart from educational measures, other nutritional measures of importance in influencing consumption trends are special feeding programs, especially when they are combined with education in nutrition. The most important of these consist of the provision of protective foods to vulnerable groups, such as the feeding of children in schools and the supply of extra food to mothers and infants in maternity and child health centers. Less direct but sometimes very effective means of increasing consumption of specific foods may consist of subsidized sale to the public, e.g., the sale of cheaper bread in Egypt, where it forms the major part of the diet of the poorer classes, and of milk in a number of countries.

It is difficult to assess exactly the long-range effect of the varied schemes in different countries, but there is no doubt that they have been developed to an increasing extent since the war. For instance, it was estimated about four years ago that more than 8 million school children were covered by feeding schemes in only ten countries in which such schemes were introduced on a significant scale since the war. Moreover, it is anticipated that the number of mothers and children receiving daily milk rations through UNICEF-aided programs alone will be as high as 4.5 million during 1956/57 ; this, of course, is only a fraction of the total coverage. Greater recognition of the need to raise the nutritional levels of the vulnerable groups is in evidence everywhere and the cumulative effect of the nutritional programs on future levels and patterns of food consumption is bound to be of considerable significance in the long run.

Marketing of Foodstuffs

Urbanization, together with the growing demand for food with rising incomes, is throwing a rapidly increasing load onto the food-marketing systems in underdeveloped countries, and its importance is not yet always adequately appreciated. The type of development is well illustrated by recent United States statistics. Thus from 1940 to 1955 the total population of the United States increased by 25 percent, but because of migration to towns the nonfarm population increased by no less than 40 percent. Over the same period the volume of food passing through markets is estimated to have increased by 43 percent, a figure obviously more closely linked with the growth of the nonfarm than of the total population.

An even more rapid rate of urbanization is at present under way in many economically underdeveloped countries, but has seldom been matched by a parallel growth in facilities for the marketing of food. As a result, inadequate marketing and transport arrangements still form a serious obstacle to the increased consumption of milk, meat, fish and other perishable foods in large areas of such countries. These foods are often not regularly available, and then only at very high cost or in imperfect condition.

The problem is not only one of the availability of supplies, but also one of quality. Inadequate facilities greatly increase losses from spoilage. Stricter sanitary measures become necessary to ensure the freshness and wholesomeness of the more perishable foods. Because of the steadily increasing distance between the producer and the final marketing, and the impossibility of buying always by personal knowledge or inspection, recognized grades and standards of quality become essential. The location of production in far-away areas, and more elaborate processing and packaging, render both producer and consumer more vulnerable to shrewd and unfair trade practices. These changes call for new means of disseminating market information and for public regulation and inspection to protect producers, traders and consumers from harm and deception. In a number of countries attempts are being made to adapt traditional marketing systems to these new conditions, but the work has only just begun.

The need for facilities to meet the distributive needs of rapidly increasing city populations demanding larger per caput quantities of the protective but perishable foods is, however, promoting a wide interest in the construction of central wholesale markets for fruit, vegetables, meat and fish, slaughterhouses, milk pasteurizing plants and refrigerated stores. Athens, Beirut, Baghdad, Karachi, Hong Kong, Santiago and Caracas are only a few examples of cities which have witnessed a very rapid growth in population and have been and are still under great pressure to remodel and expand their marketing facilities accordingly. The problem of providing an adequate supply of wholesome liquid milk to consumers in large cities is also being tackled energetically in many parts of the world, following the success of the Bombay scheme.

Concern that the vastly increased city populations should have access to their basic foods at acceptable prices has been a mainspring behind much government intervention in marketing. For example, in most Near Eastern countries, where domestic production of grain is subject to sharp changes in response to variable rainfall, government grain offices have been set up to act as stabilization agencies. At harvest time they stand ready to buy a part of the crop from farmers, in competition with private traders, thus supporting the price at its weakest point. Stocks so acquired are released later in the year when prices tend to rise, and additional supplies are obtained by importation as needed. Similar procedures are followed in other countries of Asia and Latin America to ensure that city consumers have access at all times to an adequate supply of basic foods.

The more elaborate services required and the longer distances over which food has to be transported tend inevitably to add to the cost of food marketing and distribution. But offsetting these additional costs, there are also substantial economies, e.g., from reduced spoilage, from the elimination of malpractices, and from the increased efficiencies made possible by a larger scale of operations. It seems important for governments to ensure that full advantage should be taken of these factors tending to reduce the cost of food marketing, and that the provision of better services should not come to be regarded merely as a means of raising prices to consumers. In underdeveloped countries, unnecessarily high retail prices for food may cause hardship and social unrest, and may delay materially the achievement of properly balanced and nutritionally adequate diets for large sections of the population.

Even in the wealthier countries, however, the influence on consumption of the steadily widening costs of marketing and distribution cannot be ignored. The most precise information concerning the relationship between marketing costs and farm and consumer prices comes from the United States. Here complaints that marketing costs are rising, while farmers' prices decline, has led to an intensification of the continuing study of these relationships. Over the period 1945-55 the marketing margin for the farm food products purchased by a typical family household rose steadily almost every year and has increased in total by 83 percent, whereas the farm value of the same products increased by only 4 percent. This represents, in the United States, a return from the highly favorable farm share of the consumer price of 53 percent in 1945 to some 41 percent, which is approximately the average relationship which prevailed during the period 1920-39, and which included many years of acute economic depression when the farmer's share of the consumer's dollar was particularly low.

Of the rise in the cost of marketing the standard farm food products, it is estimated that increases in the costs of distribution, wages, freight rates, packing materials and equipment, fuel, rent, taxes, etc., account for a large part.

that a rapidly expanding demand and market for the more expensive foods, including protective foods, may be expected from a relatively small rise in per caput income in the underdeveloped countries. The most important consequence of this situation may be that it points the way (possibly the only way) to greater prosperity among the rural peoples of the less developed countries whose poverty is extreme, with incomes well below even the low national average. It may lead also to a growing import demand for foodstuffs in economically underdeveloped countries, though such countries usually rely as far as possible on their own agricultural resources in order to conserve foreign exchange for the import of capital goods.

The high income elasticity of many foodstuffs at low income levels is of obvious importance to administrators and planners in underdeveloped countries, where economic development and rising incomes may lead to a sharp increase in the demand for food which, if not satisfied, will set up inflationary strains. It is clearly important to anticipate and make provision for such developments. On the other hand, problems of surpluses and of falling farm incomes which may ensue if supplies outrun the growth of demand may be no less serious. Since a biological process such as food production, subject to the vagaries of weather, cannot be regulated with the precision of factory production, some degree of variation in price levels is difficult to avoid, though it may be considerably limited for all but the most perishable foods by a system of buffer stocks, and, within limits, by some regulation of the level of imports or exports. These considerations, however, fall more properly into the field of price policy than of food consumption.

The long-term influence of prices on food consumption has been less fully examined than that of income. Most of the work on supply/price relationships has been done in developed countries, and has been concerned primarily with short-term relationships as an aid to price forecasting. A particularly serious gap in our knowledge concerns the influence of price changes on food consumption at low income levels in both urban and rural areas. It seems likely that the effects where incomes are low would be greater than in wealthier countries, just as income elasticities are greater, but there is little positive evidence to confirm this impression.

Data are presented, however, which suggest that even in high-income countries food prices affect to a limited extent the proportion of the income spent on food, and to a much greater extent the pattern of the diet. Price changes tend to work against income changes so far as the expenditure on food as a whole is concerned, at least in the short run. But long-term changes in price relations between different foods may offset, or may reinforce, the changes which might be expected from rising incomes. In the United States, for example, there are indications that long-term trends in price levels have tended to raise the consumption of e.g., fats, sugar and eggs, and to depress the consumption of meat and dairy products, especially butter, in comparison with what might have been expected if real incomes had risen without any long-term changes in the comparative prices of the different foods. This too, is a field where more detailed study would be valuable.

In discussing the effect of food prices on consumption, a distinction must be made between the influence of price changes on expenditures on food, and on the quantity of food consumed. Here the situation is very different for different foods. For example, except perhaps among the very poorest groups, price changes have little influence on the total quantities of cereals and starchy foods consumed, but a considerable effect on the expenditure on these items.[14] For such foods as meat the reverse is the case. Price changes do not greatly affect expenditures on meat, but considerably affect the quantities consumed.

From the nutritional standpoint both aspects are important. For commodities with high price elasticities such as meat, the effect is obvious. For foods with low price elasticities such as cereals, a rise in price (reflected in increased expenditures) may materially reduce the money available for protective foods in low-income groups and countries, and in extreme cases may reduce the actual consumption of cereals, and hence the total calorie intake, even below physiological requirements.

If prices influence the pattern and level of food consumption, and if it is confirmed that their effect is greater at low than at high income levels, the improvement of food market-

[14]As noted earlier, price changes may also lead to a switch from a more to a less nutritious cereal, e.g., wheat to maize, and vice versa.

ing, particularly in underdeveloped countries, becomes doubly important. It is known that in many instances marketing margins in such countries are wide, especially for the protective foods which are consumed in rather small quantity, owing partly to the wastages, inefficiencies and malpractices of the marketing system itself, and partly because of over-high mark-ups. A high mark-up is almost inevitable in a business with a small turnover, as is often the case in underdeveloped countries. Marketing improvements which could reduce the cost of food to consumers without lowering the already small returns received by producers might go far, both to improve nutritional levels, and to expand the domestic market for agricultural products.

The rapid change from a subsistence to a market economy, now in progress in many underdeveloped countries and associated with the growth of towns, is a second compelling reason for a rapid overhaul of food marketing in these countries. The marketing system must grow at a rate corresponding not with the growth of the population of a country, but rather with that of its nonfarm population (which may often be two or three times faster) and with an added margin for good measure to cover rising standards of living in both town and country. Hardly anywhere does performance come up to this exacting requirement.

A third reason why rapid improvements in food marketing are badly needed is to increase the sheer physical availability of the protective foods. If fish can be sold in inland areas only after a wasteful process of sun-drying; if in hot climates milk, fruit or vegetables go bad in a day; if meat must be eaten almost immediately after slaughter, then these foods will not be available to many consumers for much of the time, and only at relatively high cost or in imperfect condition. This is bound to limit their consumption.

In countries at higher income levels, where average diets are adequate or more than adequate, the steadily widening costs of distribution, resulting from more elaborate processing and services (not always necessary or even wanted) and from higher earnings in the distributive trades, is unlikely to lead to nutritional problems, except perhaps in the very lowest income groups. The resulting increased retail cost of some foodstuffs may, however, influence considerably the pattern of the diet. Moreover, since the evidence suggests that the proportion of the income spent on food as a whole is fairly constant at any given income level, widening distribution costs seem likely to tend to reduce farm incomes. This last point, however, lies beyond the scope of this chapter.

So far mainly economic considerations have been discussed in this final section, but as stressed earlier many social, religious and other factors enter into the picture. Absence of even the simplest nutritional knowledge is particularly important. It may lead town workers to change from their normal cereals to visually more attractive, but nutritionally deficient products, or to spend much of their small incomes on sweetened beverages and other nutritionally unimportant items, leaving little for the protective foods they lack. In country areas diets and health could often be greatly improved by larger supplies of, e.g., vegetables or eggs, which peasants could produce for their own families with little effort or expense, but do not because of ignorance of their food values. In both town and country, an elementary knowledge of nutrition could go far to overcome the handicap of poverty, and greater emphasis on home economics and popular consumer education could have important effects on health. This is a field still widely neglected.

Again, where average per caput incomes are still too low for a fully balanced diet for everyone, there is much to be said for channelling a larger share of the protective foods to the most vulnerable groups, including children and mothers. The spread of school meals and other welfare schemes for such purposes has been one of the most encouraging developments since World War II, and one of the most striking results of our growing knowledge of nutritional principles. But large sections of the neediest of the world's people are still untouched by these developments, and what remains to be done is much greater than what has been accomplished.

Chapter IV - POSTWAR CHANGES IN SOME INSTITUTIONAL FACTORS AFFECTING AGRICULTURE[1]

The progress of agriculture depends upon many factors, including the growth of technical knowledge, the educational level of the farmers, the market situation and the institutional framework within which the farmer has to carry on his work. These institutional factors are many and varied and they influence his ability to obtain access to the elements of production, to influence the economic environment in which he works and the returns he receives for his labor and investment. In other words, they can greatly affect his ability to carry out an effective job as well as his incentive to work well, learn and improve his farm and farming methods.

This chapter is concerned with the changes which have occurred since the war in some of the more important of these institutional factors, namely land tenure, credit and co-operatives. The period since the end of World War II has been one of significant, sometimes far-reaching, changes in these fields, and most particularly in land tenure. Furthermore, there are many connecting links between these three topics, so that it is convenient to study their development in relation to one another. Unsatisfactory forms or conditions of land tenure can constitute a major impediment to getting credit into the hands of producers ; changes in land tenure frequently disrupt the previously existing credit structure and the type of new tenure conditions created may have an important bearing on the credit-worthiness of farmers ; the reorganization connected with land tenure changes, especially where these involve settlement of new farmers or raising the size of the holding of some farmers, create additional credit needs. Land tenure changes may also create a more favorable climate for co-operative action and may demand some co-operative organization if they are to have the best chance of succeding.

In brief, land reform programs usually need to be accompanied by a strengthening of certain other institutions, of which credit facilities and co-operative organization are in fact only two. Marketing facilities, extension services and the supply of agricultural requisites are likely to be equally necessary, and the development of a good system of co-operatives may aid in respect of these too. Co-operation is obviously closely connected with the subject of credit, as provision of credit is often either the main object or one object of a co-operative system.

Many further points regarding these interrelationships will become evident during the reading of the following pages, which attempt to give a factual but analytical account of the most important developments in land reform, credit and co-operatives in recent years against the background of the situation as it existed before or at the end of the war.

[1] Agriculture is used here in the broad sense which includes forestry and fisheries, as defined in the FAO Constitution.

LAND TENURE

In a review of agricultural progress and experience during the last decade, a special section published two years ago in *The State of Food and Agriculture* dealt with the "Correction of Institutional Obstacles to Agricultural Development". It emphasized that outdated systems of land tenure often prevent the adoption of improved methods since they leave the cultivator no margin for saving or investment. It was also stressed that if he lacks security of tenure the cultivator has little incentive to improve his holding. Rigid laws or customs maintain systems of cropping which exhaust the soil and prevent satisfactory yields. Again, defective institutions often lead to excessive fragmentation and undersized holdings, thus preventing the farmer from using his time to the best advantage or from using more modern methods. Similarly, overlarge holdings may impede progress if the owner lacks the desire, capital or ability to develop his property. Uncertainty of title to the land because of lack of cadastral surveys and registration of rights makes tenure insecure and so restricts the opportunities for long-term credit.

Agrarian reform has played an important part in agricultural policy since World War II, both in economically underdeveloped and in industrialized countries. Such measures have covered redistribution of land, land registration, consolidation of fragmented holdings, improvement in tenancy relations, control of rents and changes in land taxation. They are frequently associated with measures of land reclamation and land improvement. Complementary measures to provide agricultural credit, better education and extension, and marketing services are often necessary for the success of the land reform itself and have often been planned and implemented by governments. In some countries, e.g., Finland, India and Italy, agrarian reform measures are linked with land conservation programs and the need to co-ordinate tenure reform and conservation policy with the planning of land use is gaining more and more recognition.

Institutional problems usually arise from the clash of historical and traditional factors with the needs of modern economic and social development. This is particularly true of tenure problems. From time immemorial land ownership and use have been subject to religious rules and sanctions, and they are still considered as an ancestral inheritance in many countries all over the world. Land is often looked upon as the basic communal asset, and land policies reflect ideas and values which do not conform with modern economic considerations. Land ownership, therefore, is often considered the highest social privilege and the right to use the land an act of grace.

In the postwar years, agrarian reforms have broken down time-honored institutions in many countries and have attempted to adjust conditions of land tenure to the process of economic and social development. In some countries, land reform was brought about by revolutionary action. More often, however, land reform measures have been of a gradual and evolutionary nature, and have been adjusted and directed to meet the needs of agricultural development.

In Western Europe the emphasis has been mostly on consolidation of fragmented holdings. In the economically underdeveloped regions the abolition of landlordism, or the reduction of intermediaries between landowner and cultivator, and the distribution of large, extensively cultivated estates or Crown land have been the main objectives. Tenancy reforms were implemented both in advanced and underdeveloped countries, though in the latter usually as supplementary or temporary measures in preparation for the transfer of ownership to cultivators. Eastern European countries organized collective farming, while co-operative types of organization were frequently introduced in Western Europe to facilitate land consolidation and, in some instances, also for joint land utilization and cultivation. Taxation has been used to counteract the accumulation of land in the hands of a few, to break up large estates and to promote certain forms of ownership, land use and types of organization.

This section is concerned primarily with the legislation for agrarian reform, since these laws give a strong indication of the trends of agrarian policy of the countries concerned.[2] While an attempt is made to analyze the principles of legislation and to reach some conclusions, it is not yet possible to evaluate the effects of the postwar agrarian reform legislation. Inadequate information on the degree of implementation and on human reactions, as well as the brief interval which has elapsed, make it too

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[2] *Progress in Land Reform*, United Nations, New York, 1954.

Progress in Land Reform, Second Report, United Nations, New York, 1957.

early to attempt such evaluation. Further, it is virtually impossible to isolate the effects of agrarian reform measures from the impact of other factors.

Changes in Ownership Pattern

The Elimination of Large Landowners and Intermediaries by Legislation

The transfer of ownership from large to small owners represents in many programs of agrarian reform the decisive step in putting the general policy into effect. Such measures may be far-reaching in their results, since they may affect the social status of the farm population, the organization of agricultural production and the general economic conditions of the country.

The agrarian reform programs implemented in the various countries differ in their approach in the emphasis placed on social or agricultural economic goals and also in impetus, timing, scale and implementation.

In Asian and Eastern European countries reform programs are an expression of the policies of national movements seeking the elimination of outdated forms of ownership. The emphasis in Western Europe is rather on land redistribution as a means to greater efficiency. In Italy for instance, only large estates are affected by land redistribution programs which also take into consideration the efficiency standards of the estates. Agrarian reform programs, and particularly land redistribution, are most frequently carried out in areas with high density of the rural population and a considerable degree of rural underemployment.

Transfers of ownership to cultivators in postwar years were implemented in the *Far East* by Burma, Mainland China, India, Japan, Pakistan, the Philippines and Taiwan; in *Europe* by Finland, Italy, Spain and the Eastern European countries; in the *Near East* by Egypt, Iraq and Turkey; in *Latin America* by Bolivia, Guatemala and Puerto Rico. Everywhere these measures should help to obtain a stronger legal and economic position for the cultivator.

The common feature of recent legislation in the *Far East* is not so much the abolition of large estates as that of those property rights in land which reduce the income and the social status of the farming population. The criterion for expropriation was the form of tenure and not, in general, the size of the holding or the inefficiency of farming. The beneficiaries of the reform were usually the tenant-cultivators who have been in occupation of the holdings for generations, and the change in ownership, therefore, did not necessarily affect the size of the farm unit or the type of farming.

In *Japan* redistribution of land ownership has been carried out under the Owner-Farmer Establishment Special Measures Law of 1946. The object of this reform law was the establishment of owner-farmers by the compulsory transfer of land from nonoperating landowners to tenants. All tenanted land owned by absentees was expropriated and also tenanted land owned by resident landlords in excess of one hectare. The total amount of owner-operated or tenanted land retained by any individual was not allowed to exceed three hectares (12 hectares in Hokkaido).

Land coming under these provisions was subject to government purchase according to the land purchasing program established by a Municipal Council Land Commission. The land was sold through the Commission to tenant farmers already on the land who could be expected to engage in farming as owner-farmers. Very small holders with less than 0.2 hectares were excluded. The new owner received a registered title to the land and every farmer who had purchased land from the Government was expected to cultivate it himself. If the farmer gives up cultivation, the Government has the right of pre-emption. The purchase price to be paid by the tenant was based on the market value of the land in 1946. At the time the reform was carried out, inflation was proceeding rapidly and thus the price received by landowners was much less than the market value. To some extent inflation facilitated transfer of the land to tenant cultivators. The Agricultural Land Law of 1952 has consolidated the land reform legislation.

Under the Japanese Agrarian Reform Legislation, tenanted land has decreased to about 9 percent of the total arable land, and owner cultivation has become the predominant type of tenure. It is significant, however, that the average holding is only 0.9 hectares. The area of land transferred to the cultivators amounts to about 2,400,000 hectares, representing 40 percent of the cultivated area.

In *India* the individual States have enacted laws and regulations for the abolition of zamindari and related tenure types. The zamindari originated in the late eighteenth and early

nineteenth centuries under revenue settlements which conveyed the right of collecting revenue from groups of villagers to tax collectors, the so-called "zamindari". Under early and so-called permanent settlements, the cultivators paid their revenue to the zamindar who retained a portion of it in lieu of collection charges, and to secure a permanent inflow of revenue the amount payable by each zamindar to the State was fixed in cash in perpetuity. These settlements favored the zamindar, for as cultivation expanded and became more intensive he was able to exact higher rents from the peasants while paying the same revenue to the State. In later zamindari settlements periodical revisions were provided for (every 30 or 40 years). Under both forms a larger chain of intermediaries and rent collectors, each claiming a share in the rent, materialized between landlord and cultivator

The object of the recent legislation is to eliminate all intermediaries between State and cultivator, and the establishment of peasant proprietorship under which subletting would be prohibited. The rights of ownership under these intermediary tenures are taken over by the State against compensation. In some States, rights of ownership are then conferred on the tenant against payment of a purchase price; in others, the tenants become tenants of the State, though with the right to acquire ownership.

In several States, limitations are imposed on the landlord's right to resume land for personal cultivation. Maximum holdings have been prescribed to limit the future acquisition of land in Uttar Pradesh, Madhya Bharat, Hyderabad, Jammu and Kashmir. In Delhi all tenants have become owners against payment, in ten annual instalments, of a price equal to from 20 to 40 times the land tax. In West Bengal the State Government acquired all rent receiving rights of the landowners.

In *Pakistan* agrarian reform measures are concentrated mainly in the East, where the largest part of the land was held in permanently or temporarily settled zamindari tenure. According to the legislation of 1950 all rent-receiving interests in land should be acquired by the Government, but the process of taking over these estates was delayed and the completion of the process will take some time. In October 1955 the Chief Minister of East Bengal said that the zamindari system would be completely abolished by 1957 and that the zamindars' land would be distributed to cultivators on an equitable basis. In other parts of the country, e.g., the North-West Frontier Province, the acquisition of all property rights to their land by the tenants has been seriously hampered because in general they were not able to pay the compensation laid down in law.

In the *Philippines* an Act of 1955 authorized the Government to acquire private agricultural lands by purchase, or if necessary by expropriation, for resale to tenants or occupants. Under this law the Government is acquiring large estates to establish family-sized farms. In *Burma* the Government resumed all agricultural land classified as rice-land, but exemption was given to families farming less than 50 acres. In *Mainland China* implementation of the agrarian reform law of 1950, aiming at the elimination of the landlord class and the redistribution of land to poor peasants and farm laborers, was completed by 1953. Altogether about 48 million hectares of land were distributed among 300 million peasants, men and women.

In the Near East land distribution has been carried out in only a few countries and, in contrast to the Far East, involved expropriation only of estates exceeding a certain area. In *Egypt* the Land Reform Law of 1952 provided that no person should own more than 200 fedans (84 hectares) of agricultural land. Exemption is given to companies holding land under improvement, private individuals who own more than 200 fedans of fallow or desert land for purposes of improvement, industrial companies, agricultural and scientific societies and benevolent organizations. Within the five years following the enforcement of the law, landowners are allowed to transfer ownership of agricultural land in excess of 200 fedans to their childen at a maximum rate of 50 fedans per child, but not exceeding 100 fedans in all, to small farmers previously farming the land up to a maximum of five fedans each, and to graduates of agricultural institutes from 10 to 20 fedans of orchards. Compensation is to be paid at the rate of ten times the rental value, which is estimated at seven times the basic land tax. Farmers and farm laborers owning less than five fedans are entitled to receive from 20 to 5 fedans of expropriated land.

Expropriation and redistribution are to be completed by 1957. Land expropriated and not yet redistributed is managed by the Higher Committee for Agrarian Reform, which works through financial committees. Altogether some

566,000 fedans belonging to almost 1,800 landowners will be requisitioned and distributed to 200,000 families comprising 1.2 million persons. In 1953, 18,000 fedans were distributed ; in 1954, 83,000 ; and in 1955, 150,000 fedans. Up to February 1955, 415,000 fedans of land and 4,600 fedans of orchards had been requisitioned.

In *Latin America*, agrarian reform has not made much headway, although the example of the agrarian revolution in Mexico, where a large-scale distribution program was carried out in 1920-30, had a considerable impact on public thought in other Latin-American countries. The majority of Latin-America countries are conscious of the importance of institutional problems for the development of agriculture, but up to now have given the settlement of new areas of land priority over institutional changes in already settled areas.

Under the *Bolivian* decree of 1953 on agrarian reform, however, all latifundia are to be abolished, though efficiently owner-operated estates are not considered as latifundia and will not be subdivided. The law fixes the maximum area of cultivable land to be held in small, medium and large holdings, in accordance with differences in conditions of soil and climate. Land taken from Indian *comunidades* since 1900 is to be restored to them when they establish their title to it under special regulations. Land so acquired is to be held jointly by the community and is inalienable. The land is to be worked co-operatively, but title to holdings is to be granted to farmers for individual use. Members of the communities are to consolidate their holdings with technical assistance from the State in order to work the land rationally. On large estates worked by tenant-laborers, preference will be given to tenants and farm workers who have been in residence for at least two years on the date of promulgation of the decree. To implement this law the Government has set up the National Agrarian Reform Service under the President of the Republic, the National Agrarian Reform Council attached to the Ministry of Rural Affairs, Agrarian Judges, the Rural Agrarian Reform Boards and Rural Inspectors.

In *Eastern Europe* large agrarian reform programs were implemented in the course of the political revolutions immediately after the Second World War. In Albania, Czechoslovakia, Eastern Germany, Hungary, Poland and Yugoslavia, large-scale expropriation programs were carried out. After 1945 the principle that the "land belongs to the tiller" was systematically applied and a very small sum for compensation, if any, was paid to the former owner. The land was distributed to small, medium and landless peasants. In *Czechoslovakia* 1.7 million hectares were distributed to 350,000 small, medium and landless peasants, and 50,000 hectares to farm workers and employees. In *Eastern Germany* a total of 209,000 new farms were created and 318,000 parcels were added or given in freehold to existing small farms. In *Hungary* 3.3 million cadastral holds (1.9 million hectares) were redistributed, of which 2.2 million were given to agricultural workers, some 973,000 to holders of small and very small properties, and the remainder to other groups, as for instance craftsmen under contract and qualified farmers. In *Poland* almost one million families benefited by allotments of 6 million hectares. As the result of the reform, 747,000 new farms were created and 234,000 farms were enlarged. In *Yugoslavia* 2.5 million hectares of land were distributed to 706,000 families. Groups receiving land included 180,000 poor peasants and 71,000 landless cultivators. In other European countries, too, various land redistribution programs have been implemented. While in some countries, such as Finland, land reform legislation has been concerned with the resettlement of displaced populations, in others, e.g., Italy and Spain, measures for land distribution and settlement have been closely connected with improved land use, chiefly through irrigation. In Western Germany expropriation of land belonging to large estates was promulgated immediately after the war ; the land was acquired by tenants who rented it in addition to their own holdings in order to make their farms more economic.

In *Finland* a long-term land reform policy was begun soon after World War I, mainly to promote family farm ownership. Recent land reform legislation (Rapid Settlement Act of 1940 and particularly the Land Acquisition Act of 1945) had been concerned with the resettlement of the population displaced from the territory ceded to Russia. Expropriation of land has been fairly extensively applied. Landowners who were obliged to relinquish land were divided into two distinct categories. The first category consisted of the State, owners of neglected farms, real estate speculators, corporations, churches, municipalities and "amateur" farmers. All the land held by this category was expropriated

without limitation. The property belonging to the second group, comprising all other owners, was expropriated on a sliding scale according to the size of the holding. While on farms of less than 25 hectares the area to be expropriated was small, farms of larger size were expropriated at increasing rates.

In *Italy* land reform was designed to relieve chronic and largely localized rural poverty and unemployment. This was most widespread in regions where the distribution of land ownership is unequal. Pending the discussion of a draft bill for land reform affecting the whole territory of Italy, the Government, in order to speed up action in this field, put forward two bills of a regional character, which were enacted in 1950. The Sila Law (1950) provided for land redistribution and colonization in the Sila district of Calabria. The so-called Extract Law (1950) affects five areas — the Po Delta, the Maremma and Fucino, the Volturno and Sele Valleys, Apulia, Lucania and Sardinia. A special law was also enacted for Sicily. A notable aspect of the Italian measures is that they applied mainly to uncultivated or extensively cultivated land and that the land redistribution was associated with large-scale land development programs. Thus, under the Sila Law, properties over 300 hectares were to be expropriated and settled within six years after the introduction of the law. Under the Extract Law, expropriation depended not on the area, but on the income from the estate, together with the intensity of cultivation. Estates with a taxable income of less than 30,000 prewar lire were not subject to expropriation. Above this limit the percentage of the area to be expropriated varied according to the size of the total income. Intensity of cultivation was graded according to the average taxable income per hectare into intensive, average, and extensive cultivation and the proportion of the land expropriated increased in the less intensively cultivated estates. The compensation paid was equal to the assessed value for the progressive property tax of 1947 and was made in 5 percent Government bonds, redeemable in 25 years. Owners are authorized to pay taxes with Government bonds assigned to them as compensation. By December 1956, 760,000 hectares had been expropriated and purchased, of which 564,000 hectares had been redistributed to about 104,000 families ; this virtually completed the program.

Changes in the Ownership Pattern by Other than Legislative Means

Countries with well-functioning institutions often prefer to make changes in their agrarian structure by such means as land purchase operations and suitable credit or grant arrangements, rather than by special legislation. In the *Scandinavian* countries, for example, where family-farm ownership is well established, although not everywhere prevalent, measures have been taken to help tenants to purchase their holdings. In *Denmark* and *Sweden* tenants have the right of pre-emption on the land cultivated by them. In *Switzerland* young farmers, agricultural workers and tenant cultivators are assisted by the Government under certain conditions to acquire their own farms.

The *United States* has comprehensive programs to facilitate land purchases by grants or credits on favorable terms from public and co-operative institutions. This policy was greatly expanded under the Farm Credit Program of 1933. In the postwar years two major loan programs — (*a*) the program under the Farmers' Home Administration and (*b*) the Farm Loan Purchase Program of the Veterans' Administration — worked very successfully.

Mention may be made here of the so-called *Bhoodan Yagna* (land gift movement) in *India*, started by Acharya Vinoba Bhave, which aims at obtaining gifts of land from landowners, by making an appeal to ethical motives, for distribution to landless peasants. The amount of land distributed up to the end of 1955 amounted to about 225,000 acres allotted to almost 80,000 families ; in addition the movement helps to create a favorable atmosphere for carrying out State programs of land redistribution. Since 1955 the movement has broadened. According to the latest information the Bhoodan movement has so far collected 4.5 million acres.

The Organization of Collective Land Use or State Farms

In the Eastern European countries and Mainland China small and medium size farms have been consolidated mainly by the organization of group and collective farming. In this way it is considered that the advantages of large-scale operations are obtained and land use planning, extension, credit, marketing and storage programs are facilitated. The main disadvantages of the system have been psycho-

logical. Since these programs have been largely based on experience in the U.S.S.R., it will be convenient to give a brief resumé of the development and recent changes in the agricultural structure of that country.

In the *U.S.S.R.* most collective farms (*kolkhozes*) were initially based on the so-called "inferior" type of co-operative, where although agricultural work was carried out collectively, the peasant retained almost complete ownership of his equipment, animals and sometimes land. These were soon developed, however, into co-operatives of more advanced type, where all the possessions of the peasants (apart from vegetable gardens and a few head of livestock for personal needs) were made collective.

The work of the *kolkhozes* is based partly on State plans and partly on those established by the assembly of the members of the collective with the agreement of the Machinery and Tractor Stations. They must deliver, in addition to paying taxes, a fixed quantity of products to the State at prices much lower than those for other forms of sale, and they must also pay in kind for the services of the State's Machinery and Tractor Stations. Having fulfilled these obligations, they can sell part of their production either to the State, to consumer co-operatives, or on the free market. The remainder of their output and also cash receipts are distributed, after subtraction of the needs of the collective organization, to the individual members, according to the work they have done during the year.

Since 1950 small *kolkhozes* have been amalgamated into larger units, so that the total number of units has been reduced from 235,000 in 1940 to 86,000 in 1955. This reduction in numbers is continuing.

Since 1954 the importance of the State farms (*sovkhozes*) has greatly increased, as a result of the opening up of the virgin lands in the east. In 1955 *kolkhozes* accounted for 80 percent of the sown area and *sovkhozes* 16 percent, the rest being under various forms of private exploitation (the family plots of *kolkhoze* members, urban gardens and the small remnant of individual holdings). Although private exploitation is of negligible importance in the over-all structure, it is responsible for as much as 45 percent of the total production of potatoes and vegetables, 46 percent of the cattle (56 percent of the cows), 40 percent of the pigs and 83 percent of the goats.

The *Eastern European* countries have not followed the U.S.S.R. example in its entirety and, in general, have so far established collective farming on only a part of the agricultural area. Collectivization has been slower than in the U.S.S.R., both in the evolution from private to collective farming and in that from "inferior" to more advanced types of co-operative. Even in most of the more advanced co-operatives there is a significant difference from the U.S.S.R. in that, whereas the receipts of the *kolkhozes* are distributed only according to the work accomplished by members, in the Eastern European countries part is distributed according to the property put into the collective by each member.

The degree to which collectivization has been carried out, and the importance of the different forms of co-operative, vary among (and sometimes within) the countries of Eastern Europe. Collectivization was practically complete in Bulgaria in 1956, except in the mountainous regions. In Czechoslovakia and Albania about one third of the agricultural land belongs to co-operatives, but in the other countries the proportion in less than 25 percent. In Poland there were more than 10,000 co-operatives in mid-1956, but after the events of October a large number were dissolved, so that only 2,000 or 3,000 remained at the end of the year. A large number of co-operatives were abolished in Hungary in 1953, but collectivization was stepped up again in 1955 and 1956; following recent political developments the collectives were reduced by half, but many have since been restored on a somewhat different basis. Except in Bulgaria and Czechoslovakia, the present tendency is to encourage the formation of "inferior" co-operatives as a preparatory stage for the peasant who is not yet ready to accept the collectivization of all his possessions.

Collectivization was introduced in Yugoslavia in 1946 and by 1951 there were 6,800 co-operatives. A law of March 1953, however, authorized the peasants to leave the collective farms under certain conditions, and in the same year the number of co-operatives fell to 1,223.

State farms were also organized in Eastern European countries, often on large estates where the workers had been formerly employed on a wage basis, on enemy-occupied land, and on efficiently run large concerns which could serve as a model. Thus in Poland some 6,000 State farms were organized, covering 2 ½ million hectares, but according to a recent official report

they have incurred heavy financial losses. Measures are now being proposed for their reorganization, with the intention of giving greater freedom and some greater say in the management to the peasants employed.

In *Mainland China* [3] increased emphasis was placed on co-operative farming after the agrarian reform law of 1950, and in the following years producers' co-operatives were introduced on an increasing scale. The year 1955 (as it happened an agriculturally excellent year) marked the turning point. Most of the 580,000 producer co-operatives established in 1955 were reported to be in north and northeast China. During 1955 the number of agricultural co-operatives rose to 633,742, of which only 529 were co-operatives of the so-called " advanced " type (collective farms). By the end of May 1956 more than 10 million agricultural co-operatives had been established. These included 91 percent of the 110 million rural households of China of which 62 percent had become members of agricultural co-operatives of the " advanced " type and 38 percent of co-operatives of the " elementary " type.

According to the Indian mission's report, the differences in management and organization between the elementary and advanced types of agricultural co-operatives are relatively small. In both the principle of mutual benefit is emphasized, the right to withdraw is allowed, small private lots for cultivation are given, and compensation is paid for draft animals and farm tools. The main distinction relates to the " dividends on land shares ". The elementary co-operative tends to remain small, while the advanced co-operative tends to become steadily larger. In the former, the fact that a return on land over and above the return for labor exists, has, in the opinion of the Chinese authorities, the effect of limiting the extent to which manpower is utilized on works of benefit to the whole community.

In the Indian mission's opinion the organization of the labor force and the creation of incentives for co-operative work are successful. Its report states :

" While we were not in a position to form an assessment of the internal strains and difficulties which might exist in the average co-operative, from such observations as have been made it appears to us prima facie that essentially workable methods for organizing labour and ensuring teamwork and discipline as well as providing incentives for hard work have been evolved."

The report states that there was a high degree of adaptation to local conditions and local judgment, and there did not seem to be any rigidity in the details of the standard work days or " norms " which had been determined. The scheme of " norms " for various crops, which is the basis of distribution of the total income of a co-operative among its members, provides the chief factor making for hard work, and is a useful way of combining both social and individual incentives. The amount of money and produce allotted for each work-day depends on the annual income of the co-operatives as a whole. The greater the annual income of the co-operatives is, the more each working day is worth. But if a co-operative member wants a bigger income, he must make an effort to earn more work-days. In this way the personal interests of each member are combined with the collective interests of the co-operatives.

The mission states :

" To a visitor from abroad, apart from statistics which may be provided, the visible tests of the effectiveness of co-operatives in China are the crops in the fields and the manner in which the labour force of the village is engaged in work. There is little doubt that on these tests as well as on the information furnished, the Chinese co-operatives are at present working successfully and, organisationally, conditions have been created for rapid progress in agriculture in the coming years."

Organization of Group-farming Societies on a Voluntary Basis

Co-operative settlements are a characteristic feature of *Israel*. There are three distinct types : (1) the communal, or collective, settlement, where the land belonging to the settlement is farmed as one large estate, and where all goods and services are available to members and their families in kind, out of the income of the settlement; (2) the joint co-operative settlement where the land is also farmed as one estate, but where members receive benefits according to a system based on a combination of performance and consumption needs ; (3) the

[3] The information on Mainland China is largely based on the report of an Indian mission which visited China in the second part of 1956 (*Report of the Indian Delegation to China on Agricultural Planning and Techniques, July-August 1956*. Government of India, Ministry of Food and Agriculture, New Delhi).

co-operative smallholders' settlement, where each settler farms his own holding, but where all buying and selling of requisites and produce is carried out on a co-operative basis.

In 1954 there existed in Israel 256 communal or collective settlements, with a rural population of about 78,000 members, and 295 co-operative smallholders' settlements with about 100,000 people. During the postwar years collective settlements (*kibbutzim*) did not increase in numbers corresponding to the general increase in settlement, because the new immigrants preferred individual units with private homes. But the existing *kibbutzim* keep their leading position in the agricultural system of the country, and the spirit of co-operative enterprise remains a significant feature of these settlements.

In northern *Italy* "undivided" and "divided" co-operative farms have been well known since the end of the last century and the movement received new impetus after the first and second world wars. Most of the Italian co-operatives are formed with share capital and on a basis of limited liability. The societies usually build up a large membership of several hundreds who may be share-croppers or owners with insufficient holdings. Local authorities and charitable institutions are usually the owners or lessors of the land; in the case of a lease, it is important that the period be long enough to allow for improvements. In order to build up capital, members are usually paid wages at perhaps two thirds of the full Trade Union rate, but with a supplementary payment at the end of the year, which may bring the rate of pay up to, or above, the standard wage. The finding of suitable technical experts was a major problem in the past, but now a larger number of qualified technicians is available.

The "divided" system is somewhat more recent than the "undivided". Tenants and share-croppers, dissatisfied with the conditions of tenancy, formed co-operatives, through which they took a lease for the land as a whole. The divided co-operative farms maintain individual farming but provide co-operative services in the field of purchasing, marketing and the use of machinery. Divided co-operative farming is at present more widespread than the undivided type.

In 1954 230,000 hectares in Italy were cultivated by co-operatives, 24 percent on an undivided or collective and the rest on a divided, basis. The undivided co-operatives were mostly in the lower Po Valley, around Ravenna and Bologna, and were established by laborers of former large estates. The divided farms were most successful among the small farmers of Lombardy who had been subtenants on large estates.

India is giving a good deal of attention to the organization of co-operative farming societies, which promise to solve, at least in part, the problem of landless peasants, and may help to overcome the handicaps resulting from small and fragmented farms. Different types of farming co-operatives are organized in different parts of the country, according to local needs and interests and to the availability of trained personnel. Co-operative farming in India is still in its initial stage. The Second Five Year Plan reconfirmed its value for the resettlement of landless laborers and made provision for the specialized training of 250 to 300 junior officers for the promotion of co-operative farming.

In *Pakistan* a number of co-operative farming societies have been formed, particularly in the northern part of the country close to Lahore, where refugees are settled and organized in co-operative farming societies on government-leased land. In the Punjab, 200 co-operative farming societies have been established on an area of approximately 200,000 acres. Each village family was allotted 12.5 acres of land.

Co-operative farming societies of the divided and undivided type are also found in some other countries, but nowhere have they reached great importance. It may be mentioned, however, that certain forms of joint land use, such as community pasture and community forests, are practiced in many countries.

Individualization of Customary Tenures

The economic, technical and commercial progress which is gradually penetrating African agriculture, still bound by custom and tradition, and the increasing pressure of the people on the land, have made it necessary to reconsider the complex problems of customary tenure systems. The report of the East Africa Royal Commission of 1953-1955 [4] thoroughly examined their inter-relation with problems of economic and social progress. The Commission stated that:

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[4] London, Her Majesty's Stationery Office, Cmd. 9475, pp. 349, 351.

" A lack of confidence in the secure holding of land is an important circumstance to be taken into account in East Africa when devising a land tenure policy and the method of its application. Existing fears are derived from the failure of customary tenure to meet satisfactorily circumstances of land shortage and of demands on land for certain forms of economic use...

" Where individual rights of land ownership exist these should be confirmed by a process of adjudication and registration. But where interests in land do not amount to full ownership we visualize that the facility which will be accorded to the purchase and sale of land interests by their registration will help to bring into being full ownership interests. "

The report emphasizes also the importance of local customs and conditions, and calls for a thorough study of the economic, sociological and legal problems involved in the development of individualization of traditional tenure systems.

The change from traditional communal systems of land tenure to a more individualized system is drastic. The communal system is based upon the traditional concept of sharing the produce according to need, while individualized tenure emphasizes private initiative for self-advancement ; and ways must be found to lessen the disintegrating effects of the change. In order to avoid indebtedness and loss of land through unwise transactions, the report recommended some government control by authorities, e.g., restrictions on the mortgaging of the land and on the recovery of a debt through the sale of the land, and appropriate measures to limit the accumulation of large land holdings : leases of land should be subject to approval by the authorities.

In *Southern Rhodesia*, the Native Land Husbandry Act of 1951 gave a strong impulse to the individualization of customary tenure by making provisions for registration of land rights in the name of individual owners. The Act is considered a decisive step toward a change from communal land holding to individual tenure.

Changes in Owner-Tenant Relationship

A principal concern of agrarian reform is the establishment of secure tenure for the cultivator, and thereby the incentive to develop agricultural production to the maximum of his knowledge, skill and resources. In principle, security does not necessitate owner-cultivatorship ; but if the cultivator is not the owner, he should have the greatest security of occupancy compatible with the need for elasticity in the agrarian system.

Changes in owner-tenant relationship are frequently carried out as a preparatory step for changes in the ownership pattern, but they may also aim at the establishment of a well-balanced system modelled on the lines of the English or Belgian systems. Experience has proved that it is frequently difficult to implement legislative changes in owner-tenant relationships according to the legislation, since time-honored customs and tradition are hard to overcome. Often, the tenant-cultivators are afraid of giving dissatisfaction to the landlord, on whom they are dependent in times of difficulty, and have little confidence in the support of the authorities.

Minimum Periods of Tenancy and Restricting Grounds for Eviction

Legislative action to give security to the tenant-cultivator tends to establish minimum periods of tenancy and to limit the reasons for eviction, such as nonpayment of rent and other violations of the lease agreement, poor husbandry and resumption of the tenanted land or part of the land by the owner. In the case of the termination of the lease, tenancy legislation may provide for compensation to the tenant for improvements, and also for disturbance, if the termination of the lease was not provoked by the tenant.

In some *Far Eastern* countries strengthening the legal position of the tenant-cultivator is of decisive importance, since tenancy and leasehold still govern the work and life of most cultivators. Legislation to give greater security to tenants, however, often contains provisions enabling the landlord to take up tenant land to a prescribed extent for his cultivation ; such provisions may greatly weaken the position of the tenant in spite of the security legislation, and frequently lead to tension and insecurity.

In *India* comprehensive State legislation concerned with tenancy rights has been enacted in recent years and is now being implemented. Implementation has been facilitated in Uttar Pradesh and Delhi where, since the abolition of the intermediaries, all tenants and subtenants have been brought into direct relation

with the State. Minimum lease periods have been established in many States and a trend is apparent to give the tenant long-term, and even permanent and inheritable rights of occupation, as in the Punjab Act of 1953. In other States, minimum periods of five years have been increased to ten, and limitations placed on grounds for eviction. There are differences from State to State, but generally eviction is permitted only when : (1) the landlord resumes a legally restricted area of land for his personal cultivation ; (2) there is nonpayment of rent ; (3) the tenant misuses the land. Several States recognize the rights of tenants to make improvements and to claim compensation for them if evicted. But in India as in other less developed countries, a main obstacle to effective enforcement of such legislation is the general illiteracy of tenants, their weak economic position, and their lack of organization, while in some areas the so-called " rights of resumption " have counteracted to a considerable extent efforts to give greater security to the tenants.

Some other countries in the Far East, e.g., the Philippines, Taiwan, Thailand, Viet Nam and Pakistan, have introduced some legislation similar to that in India. Pakistan, Thailand and Viet-Nam have introduced laws which place the rights and obligations of tenants on a more equitable basis, but again the enforcement of the legislation remains the crucial problem. In Japan tenancy security is of less importance, since the area of tenant land has been reduced to about 9 percent of the total arable area.

In the *Near East*, where tenancy is widely prevalent, agreements are still largely regulated by custom, and the tenants on the whole enjoy little security. An exception is Egypt, where the Land Reform Law of 1952 provides that agricultural land may be let only to a person who undertakes to farm it in person ; and that leases of land shall not be concluded for less than three years. In the absence of a written contract the rent shall be deemed to be based on crop-sharing for a period of three years, during which the owner's share shall be half, after the deduction of all expenses. A later revision permits the tenant to sublet his land for the cultivation of certain specified crops. No person cultivating the land himself, however, may be evicted whether he be the original tenant or a subtenant.

In the *Sudan*, tenants in the Gezira Scheme and in the various Nile Pump Control areas enjoy full security. Tenants are nominated and holdings allotted by the Joint Board Authorities and detailed regulations govern the disposal of the cotton crop, the joint cotton account and the tenants' collective and individual accounts.

In many *Latin-American* countries the extreme inequality in the distribution of land ownership affects the relationship between landlord and tenant and adds to the tenant's insecurity. Some countries, as, for instance, Costa Rica, Colombia, Cuba, Nicaragua and Peru, have issued legislation to prevent exorbitant rents, but the weak bargaining power of the tenants is a great obstacle to its enforcement. Thus the Governments of Costa Rica and Nicaragua, in their replies to a United Nations questionnaire, reported that the legislation was not implemented.

In *Western Europe*, where tenant cultivators are in a stronger bargaining position, tenancy security legislation has been successful, and in many countries tenant-cultivators enjoy a high degree of security. Regulations requiring written lease agreements (the usefulness of which is doubtful in countries with a high rate of illiteracy) give valuable protection. In Denmark, Finland and Ireland the policy has been to transfer tenancy into owner-occupancy and in the meantime to improve the security of the tenant-cultivator where necessary. In the United Kingdom, where three fifths of the total number of farms (England and Wales) are tenanted, the Agricultural Holdings Act of 1948 contains the basic features of English tenancy legislation. The landlord must give the tenant at least 12 months' notice to quit, and in general the right to object. If he does so within the time limit, the landlord can appeal to the Minister of Agriculture. The most important factors which the Minister must consider are the interests of efficient farming. Other grounds for consideration are the possible hardships caused by either party, or other claims for the land, such as its use for agricultural research or for the provision of small holdings. The Act contains comprehensive provisions for ensuring that a tenant receives adequate compensation, on the termination of a tenancy, for any improvement carried out by him. He is also entitled to compensation for disturbance varying from one to two years' rent, unless he leaves as a result of bad husbandry. Where landlord and tenant are unable to agree on the amount of compensation, the Act provides for arbitra-

tion. The comprehensive right to compensation, established by the Act, makes any change in the tenancy of the farm extremely costly to the landlord and provides a high degree of security to the tenant, who is more effectively protected than tenant-farmers in any other country. In recent years Switzerland and Spain have also introduced legislation in favor of the tenant-cultivator.

In *Eastern Europe* tenancy is now of little importance, but in most countries the law provides for State intervention in tenancy disputes at the request of one of the parties involved.

Rent Control

Security of tenure cannot be acquired without measures to control the rents of agricultural land, but here too the enforcement of legislation in many countries is very difficult, because of the weak bargaining power of the cultivators. Insofar as rent control is successfully enforced, it improves security of tenure, increases the cultivator's share of the produce, and raises his social status. But this goal can be achieved only if complementary action is taken to provide agricultural credit ; otherwise the moneylender may take more than the tenant gains from rent control.

The problems of rent control are apparently very different in more advanced and in underdeveloped countries. In some of the advanced European countries the present problem is how to reconcile security for the tenant with the efficiency of the farming system. In the countries of Asia, the Near East and Latin America, on the other hand, the problem is how to make protection of the tenant work. Where pressure on the land and unfavorable economic conditions work against the tenant, much depends on the efficiency of the enforcement machinery. The experience of some Asian countries suggests that the creation of special administrative machinery for this purpose is a condition of successful enforcement.

In some *Western European* countries, e.g., Belgium and Switzerland, the legal rent is tied to the level of a certain year. In Western Germany official approval of the terms of the lease is required and carries with it administrative control of rents. In the Netherlands legislation is designed to maintain rents at an economic level, at the same time ensuring an adequate standard of living for the tenant. Rents are determined on a regional scale, according to the type of farm, nature of the soil, and location, the rents of individual farms fluctuating around the regional level. In the United Kingdom the Agricultural Holdings Act of 1948, while not providing for rent ceilings, gives rights of arbitration under which either landlord or tenant may request an adjustment of rent, though not more often than every three years.

In *Far Eastern* countries, effective control of rent is still a considerable problem. In Japan the new Land Law (1952) maintains the principle of rent control laid down in previous legislation with some modifications. The rent for each parcel of farmland is to be fixed according to the productivity of the soil, to be determined by a soil survey. Until this survey is completed, the rent prior to the new legislation is considered the legal rent, though if the rent exceeds 25 percent of the value of the rice produced or 15 percent of the value of other principal crops, the tenant farmer is entitled to request a reduction.

In *India* control of farm rents has been enacted in most of the States, though the way it is determined varies in different States according to the class of tenants, the nature of the land and the type of crops produced. In Assam, Bombay, Madras, Hyderabad, Mysore and Orissa the upper limits of rents formerly fixed have been reduced. The upper limits are generally set at between one third and one fifth of the produce or of its value, except for Bombay and Rajasthan, where it has been set at one sixth of the produce. A number of States have also made provision to eliminate onerous rental conditions to enable the tenants to pay rent in cash instead of kind, stipulating also that tenants' improvements shall not result in unearned income for landlords.

Taiwan and the Philippines have also enacted legislation to control the level of rents, and the Philippines have attempted to establish a system of rent controls by detailed accounting of the mutual contributions of landlord and tenant. Taiwan has established 37.5 percent of the crop as a general rent ceiling for all leaseholds on private land.

In the *Near East* only *Egypt* and *Israel* have any legislative ceiling on rents. In Egypt the agrarian law of 1952 stipulates that the rent on agricultural land may not exceed seven times the amount of the basic tax assessment upon such land, or one half the crop after de-

duction of all expenses. In Israel the rent of the large area of land belonging to the Jewish National Fund is fixed by arbitration and is subject to periodic review.

In *Latin America,* although in many countries rents are very high, little progress in control of rents has been achieved. In Guatemala by a decree of 1954, the new Government limited rents of agricultural land to 5 percent of its value; this regulation also applies to share-croppers. In Peru, a similar Act of 1947 stipulates that rents shall not exceed 6 percent of the value of rural holdings. But in these, as in other countries of the region, the poverty of tenants and inadequate administrative machinery are obstacles to effective enforcement. Thus, in Nicaragua, where most of the cultivable land in the Republic is located in the Pacific zone, population pressure has resulted in rentals which are sometimes as much as eight times the amount allowed by law. In the Dominican Republic no lease is approved unless the rent or payment is reasonably favorable to the lessee (Executive Decree of 1949).

Establishing the Tenant's Right to Acquire Land

In many countries, as noted earlier, tenancy is considered a temporary stage on the ladder to owner-cultivatorship and, as mentioned in another context, the legislation provides the tenant with opportunities of ownership. In Denmark, Norway and Sweden recent legislation has given the tenant the first option to buy his holding if it is sold. In Iceland it is an established policy that publicly owned farms must be sold to the tenant if he applies for purchase.

In the United States, under the Bankhead-Jones Farm Tenant Act of 1937, credit was made available to tenant farmers who could not obtain it elsewhere. The Indian reform legislation, as stated above, has given opportunities for ownership to tenants by the abolition of intermediaries, the acquisition of rent-receiving rights of landowners other than intermediaries and the conferring of rights of purchase on tenants. Tenants, however, through lack of information, have frequently been reluctant to use their rights to acquire ownership. It is uncertain if this reluctance is due to the low level of rent payments, to shortage of credit, or to the price of land and the terms of purchase. In the State of Bombay, however, on the basis of a new amendment in 1955, all tenants have the right to purchase the land held by them within the limits established by the law, but the tenant is not only given an unqualified right to purchase the land held by him, but, in terms of the amendment, he will be deemed to have purchased the land by a certain date or he will lose it.

Layout and Size of Farm Units

Problems of economic size and farm layout have demanded increasing attention from governments in the postwar years in many countries. The increasing mechanization of agriculture has necessitated large-scale reorganization of farm units to facilitate agricultural progress and thus to improve the social well-being of the farming population.

The term "economic holding" is used in different senses in various parts of the world. In economically advanced countries the criterion is generally agricultural efficiency. The economic farm is the farm of optimum size for the type of farming — the size which will permit the best use of all agricultural resources, capital and labor as well as land. This optimum size can be defined only within broad limits in relation to the type of farming practiced and is subject to continuous changes, e.g., as the economy develops or as closer settlement necessitates a more intensive use of land. In the less advanced countries farms are called "uneconomically small" when they are not large enough to provide a minimum standard of living for the cultivator and his family. Here the criterion is not agricultural efficiency, but human need.

Governments have recognized the importance of farm-size problems and their bearing on productivity and higher standards of living. This is true not only for countries engaged in land redistribution, such as India and Egypt, but also for countries in Europe with satisfactory tenure systems, such as the Netherlands.

Farm reorganization in *Western Europe* since the war has been largely aimed at establishing economic farm units, with high agricultural efficiency. Successful land consolidation operations have been carried out in the Netherlands, Switzerland, France, Western Germany and Spain. In Denmark, where legislation on land consolidation dates back to 1769, a law of 1951 authorized the Government to purchase and redistribute land to bring the areas of small farms up to 8 hectares.

The general line of agrarian policy is best exemplified in the Netherlands and in Sweden. In both countries it was recognized that rearrangement of ownership is not sufficient but that it must be integrated into a large-scale regional development program.

In the Netherlands studies have been made to establish the most desirable sizes for various types of farming. Farms of 12, 18 and 24 hectares are being established in the new polders and should ensure farmers a net annual income of from 200 to 400 guilders per hectare ($ 52 to $ 105). Considerable attention is also paid to the reallocation of fragmented land; previously such parcels could be exchanged only by voluntary agreement among the owners, but the new Reallocation Act of 1954 introduces compulsion. Land consolidation in the Netherlands includes a strong element of reconstruction; for instance, the enlarging of submarginal farms whose former owners have obtained farms on newly reclaimed land. The same principle has been followed in reconstructing the farms affected by the flood of 1953 (75,000 hectares). The law establishes a cautious procedure to guard the interests of the parties directly involved, but also protects the public interest by making details of the reallocation plan available to the public.

All consolidation projects, with the exception of the reclamation of the Zuyder Zee, where the reclaimed land remains the property of the State, are subsidized by the Government to the extent that the costs exceed the increase in value of the land. Consequently such projects require the approval of, and are carried out under, the supervision of the Land Consolidation Services of the Government. Subsidies granted to meet investment costs amount to about 75 percent.

Land consolidation in the Netherlands has developed in the last few years from a simple regrouping of agricultural land into a general agricultural development program. The budgetary needs amount to 200 million guilders, i.e., 50 percent of the present budget of the Ministry of Agriculture, Fisheries and Food. The changes involved are so considerable that much extension work has to be undertaken both before and after the consolidation to prevent a relapse into the old conditions. The Netherlands Government aims to remove, by means of agrarian reconstruction, the large differences between the more — and less — developed agricultural provinces in the country, and to raise the productivity of the less-advanced areas. The present program involves 157,000 hectares, of which some 30,000 to 40,000 hectares are to be redistributed annually.

In Sweden agricultural policy aims at a systematic remodelling of farm sizes to promote a more efficient agriculture as a necessary supplement to the agricultural supports which have helped uneconomic holdings to survive. Both the combination and consolidation of holdings is promoted by means of government financial assistance, the right of preemption by the Crown and expropriation. From 1945 to 1952 a total of about 2,000 redistributions were made, affecting almost 10,000 lots, and the area changing hands amounted to 24,000 hectares of cultivated land and 244,000 hectares of other land. By this policy, numbers of farms are reduced every year by about 3,000 and this land added to formerly undersized units. As a safeguard the Land Distribution Act (1948) prevents the disposal of land belonging to a farming property unless this transaction would be likely to result in increased returns or would be otherwise beneficial.

In *Eastern Europe* fragmentation is important particularly in the areas of peasant cultivation. Along with the recent redistribution of land, efforts are being made to consolidate holdings. In Czechoslovakia consolidation is promoted by giving the first option to buy land to the cultivator who needs certain land for the consolidation of his property (Law of 1947). The subdivision of farms is prohibited if it results in uneconomic units. In Yugoslavia, a decree of 1948 requires official permission for the transfer of land, but even so the progress of subdivision continues. The measures of the postwar decade have increased the number of small and medium-sized farms, both in the private and co-operative sectors, and a great number of uneconomic and fragmented holdings still exist. Voluntary land consolidation is encouraged by tax exemption.

The great land redistribution programs carried out in the *Far East* have, in general, not affected the internal structure of the farm unit. The need for the reorganization of the farm unit remains great and is generally recognized.

In several Indian States, legislation prohibits the unlimited subdivision of holdings and restricts their transfer through inheritance below a minimum size. The actual problem of uneconomic holdings has vast proportions and was not affected by the legislation abolishing in-

termediaries which did not affect the pattern of land distribution. So far as is known, only two States, Hyderabad and Himadal Pradesh, have introduced ceilings on existing holdings, varying with the qualities of the soil and efficiency of cultivation. Surplus land thus obtained is available for redistribution to landless peasants, or to those with extremely small holdings. Consolidation based on special legislation is carried out in the State of Bombay, in East Punjab, Uttar Pradesh and Delhi, usually after an application by the landholders. Provisions in some States, as for instance in Bombay, fix a minimum size of holding in consolidation schemes, and prohibit division and fragmentation below that minimum. The consolidation scheme is binding on all the cultivators in the village, if a prescribed majority of those concerned agrees to it. In some States the Government may initiate consolidation schemes and compel landholders to abide by them. Consolidation of holdings is often carried out through co-operative societies, particularly in the Punjab.

In Japan the consolidation of fragmented holdings has been an urgent problem for many years. No direct measures were carried out before 1950, but energetic steps are now being taken under the Land Improvement Law of 1949. As a first step, the target for the period of 1950-57 was set at 1,715,000 hectares, approximately 30 percent of the total area of farmland. From 1950 to 1952 an area of 671,000 hectares, comprising about 820,000 farms, was in process of consolidation. During the following two-year period, around 660,000 hectares were consolidated by village agricultural commissions, agricultural co-operatives and land improvement extension services — affecting some 936,000 farmers. No legal restrictions have been imposed upon the inheritance process to counteract the fragmentation of farms. But one of the heirs may be supplied with government credits to buy out other heirs in order to avoid the partition of the estate.

Considerable consolidation operations have also been carried out in Pakistan during the postwar years. Burma and Taiwan have established minimum areas below which subdivision requires the approval of competent authorities. In the *Near East* progress in this field has been reported only from Jordan and Egypt, where the Agrarian Reform Law of 1952 guards against the continued subdivision and fragmentation of land which has been redistributed.

Tenure Changes Associated with Settlement Projects

In this section the close relationship between settlement and tenure changes has been frequently mentioned. Settlement schemes give governments the opportunity to improve tenure arrangements; they may even have an impact on tenure conditions in old settled areas. In the Philippines, for instance, peasants from densely populated Central Luzon are being resettled in Mindanao and the evacuated farms used to enlarge undersized holdings. The Republic of Indonesia has a comprehensive program of resettling peasant families of densely populated Java on the dry areas of Sumatra. A realistic approach to the risks of freehold tenure has led many governments to establish, in settlement areas, a type of tenure which combines freehold and leasehold features. The settler receives a permanent and inheritable tenure but is restricted with respect to sale, subdivision and mortgaging of the land.

In Ceylon, the settlement in the Gal Oya area was of this kind. The Government considered it risky to give the new owner an unrestricted title and wished to prevent the subdivision of the farm into uneconomic units. According to the Land Development Ordinance of 1935, which is the basis of the present settlement operations, land is given to the settler on a "permit", subject to the following conditions: (1) the land shall be brought under cultivation within a specified period; (2) it cannot be sold, leased, or mortgaged; (3) it can be left to only one nominated successor; (4) the settler has to pay an annual amount of rent of 2 to 4 percent of the unimproved value of the land. The contravention of any of these conditions may result in the cancellation of the permit and the resumption of possession by the Government. If the recipient fulfils the conditions of cultivation and brings his allotment into productive use, the land is granted to him. But even land held under such grants continues to be subject to the conditions mentioned.

Settlement carried out after the subdivision of large estates necessarily brings about fundamental changes in the institutional pattern. While landlord ownership disappears, or at least is substantially reduced, family-sized farm units, and in some cases producer co-operatives with joint land use, are established. Family farms, of course, can be either owner-cultivated or

tenanted and frequently the newly established holdings are leaseholds ; these developments can be observed both in Europe and Asia.

Thus in Italy land reform in some areas, (e.g., the Maremma) resulted in the establishment of owner farms. In India joint farming societies have in some cases been established on land acquired from larger estates. Landless workers and cultivators of undersized holdings provide the membership of these societies. During the period 1947-52 over 2,000,000 acres were reclaimed, most of which belonged to private individuals. Where new settlements have been established (mostly on public land), co-operative forms of tenure were preferred, as for instance in the Nainital Tarai of Uttar Pradesh, where 100,000 acres have been converted into prosperous co-operative colonies and flourishing State farms. In Madras co-operative land colonization societies have been set up in the reclaimed government wastelands. In many States the Governments are settling waste and idle lands with landless agricultural workers and owners of uneconomic holdings, on an individual basis.

Iraq has carried out group settlement on irrigated land under the Miri Sirf Land Law of 1951 and settled cultivators on holdings of sizes varying from 12 to 120 acres in the pump-irrigated areas. The land is given to the settlers free of rent and other charges for the first ten years. After that time successful farmers will be granted title to their land without charge, but for a further period of ten years they will not be permitted to alienate their land in any way, or to mortgage it except to the State Agricultural Bank. The Law of 1951 also allows land distribution to single individuals in units of 3,000 acres of State land which can be irrigated only by high-lift pumps. The new units are not to be leased, nor their usufructuary rights transferred to another person, and the settlers have to abide by certain agricultural regulations. If settlers do not comply with the conditions of the contract, the land can be taken away after three warnings have been given.

In the settlement of public lands, governments are, of course, more free to execute tenure arrangements in accordance with their general agricultural policy, since they are not under pressure from existing tenant cultivators as is frequently the case with the subdivision of large estates. In *Latin-American* countries, e.g., Colombia, Brazil and Chile, the settlement on public land, however, often involves the normalization of the relationship between State and squatters, who have frequently contributed substantially to the development of the land.

In *Australia*, *New Zealand* and *Canada* — countries of recent settlement — permanent leases are offered to settlers in some areas and freeholds in others. In general, Crown land is offered for selection on terms and conditions which will ensure that the land is brought into production within a reasonable time. In New Zealand it is usual to provide in the leases (which initially contain no right of purchase) that within a certain period of years the leaseholder will effect certain minimum improvements; for example, lay down a minimum area in grass and fence it. After the improvements are completed, the lessee is given the right to surrender his existing lease and obtain, in exchange, a fee simple title for cash or on deferred payments, or a 33-year renewable lease with right of purchase.

In *Western Europe*, with its tradition of owner cultivation, settlers do not always become owners of reclaimed public land. In the Netherlands, for instance, the State retains ownership of newly reclaimed land in the Zuyder Zee and the settler becomes a leaseholder.

Important problems arise in the settlement of migrants and the resettlement of indigenous populations, when the institutional concepts of the new settlers conflict with customary tenures. In many areas, as in *East Africa* and *Sumatra*, land development and settlement leads to a process of gradual individualization of customary tenures which were dealt with earlier. This process will ultimately result in the establishment of individual land holdings with protective restrictions against the economic risks involved in the disposal and mortgaging of real estate. On the other hand, the settlement of migrants in tribal areas demands specific arrangements with the tribal authorities in order to establish tenure arrangements for the settlers. In Sumatra, for instance, the Government pays the tribal chiefs compensation for trees in order to place the resettlers from Java on the land ; direct land transactions would violate customary tenure. Arrangements of this kind, however, are temporary only and have to be converted into more definite forms when the indigenous population is integrated into the development of the area and the cultural dividing line between new settler and

the indigenous people gradually disappears. Until this goal is reached, governments generally prefer effective control of the use of the land and of all land transactions, particularly with respect to the tribal land, as is the case in the major part of the African territories under British control.

Tenure Changes Affecting Forest Land

Owing to the peculiar characteristics of this form of land use, measures affecting forest land are generally independent of those affecting agricultural land. No attempt is made here to give a complete review of these recent changes and the following paragraphs are limited to a description of the principal trends in recent years. These may be summarized in four broad categories. The first concerns the nature of ownership. The second, of great importance to large areas of forest, covers rights of usage that are more or less legally vested in persons or communities other than the legal or theoretical owner of the land. The third is the improvement of forest exploitation which may be sought through the promotion of a sound relationship between the owner and the exploiter. Finally, small forest holdings may be combined to produce units which can be managed in accordance with the principles of rational utilization.

Rights of Ownership

Changes in ownership have been affected by a tendency in some countries to State appropriation of private forest holdings in the interests of general public welfare. This has been noticeable in India, for example, and in a general way in countries under a Communist regime.

In others there has been transfer of certain forest areas to communities, responsible under more or less strict government supervision for their management (Burma, Indonesia, Lebanon) or the creation of such communal forests by planting (Cyprus, India, etc.). Into this category come also the "school forests" of numerous countries.

Another tendency has been that of ensuring a greater degree of State administrative control over unclassed forest lands by declaring them forest reserves and thus bringing them under direct management by the relevant public service.Examples of this are found in Australia, India and the British and French dependent territories.

A continuous tendency to restrict rights of ownership of private owners is to be found in almost all countries where private forest ownership is important and forest economy well developed (United Kingdom. Scandinavian countries, Japan, etc.).

Rights of Usage

Although still in initial stages, some attempts ave been made to control or habolish rights which are often a serious menace to the continued existence of the forest. The elimination of goat-browsing, along the pattern successfully adopted in Cyprus, has been introduced in Yugoslavia and Lebanon, and pasture management has been attempted in certain forest areas of India. Measures have been taken in Trinidad and the Philippines, for example, to resettle or to restrict the activities of squatters, while the control of shifting cultivation has been given careful study in the Belgian Congo, the Sudan and India.

Owner-Exploiter Relationship

Tenancy, as understood for agricultural areas, is not practiced on forest land and is replaced by the granting of timber concessions or the sale of coupes. Two contrasting trends have evolved in this connection. On the one hand there has been a tendency to eliminate the granting of concessions, especially long-term concessions (as in Sarawak), and their substitution by exploitation under contract (as in Burma, Thailand). A semigovernmental corporation is sometimes especially created for this purpose, as in the case of the Colonial Development Corporation (British Guiana, Nigeria, territories in Central and East Africa, and New Guinea).

On the other hand, where a government may be insufficiently staffed, or financially handicapped in developing its forest resources, the licensee may be given extensive responsibility, authorized to manage personally the forest lands in the licence and assured of a long-term tenancy of temporarily alienated State timber lands. This entails the possibility of his carrying out long-term, State-approved or imposed

planning. Examples of such developments are the Forest Management Licence System of British Columbia, co-operative management in the United States and the *unidades* of Mexico.

In concluding, it should be stressed that agrarian reforms and measures affecting the structure of agricultural property have repercussions upon the over-all land-use pattern and may sometimes adversely affect the desirable balance between forestry and other forms of land utilization. The splitting up of large domains containing a forest estate may result in the disappearance of the latter. It may also inhibit the establishment of shelter-belts, whereas the collective management of agricultural land can favor such a desirable trend. Security of tenure will, of course, favor the establishment of windbreaks and woodlots. Colonization plans and projects for the resettlement of displaced populations often affect forest areas and it is in regard to these, especially, that the safeguarding of the forest cover is essential in the interests of both its physical role and the economic possibilities it offers.

Problems of Tenure in Fisheries

Marine Fisheries

These account for about 75 percent of reported world fish supplies and are characterized by the absence of any form of ownership over the areas fished or the fish stocks themselves. Tenure in the ordinary sense of the word can be applied only to certain coastal areas under territorial jurisdiction, where exclusive rights to exploit certain water, especially by means of fixed gears, fences, etc, may be granted to individuals, groups, societies, etc., or to sedentary fisheries, mainly shell-fisheries, which can be demarcated and operated under lease or licence. Such tenure as exists is mainly vested in governments or public authorities of some kind and in many parts of the word is reflected in a complex system of regulations, licences, dues, etc., in the interests of revenue or of conservation of the stocks.

The greater part of the fish supplies, however are taken in oceanic areas where no exclusive rights of ownership or tenure have been established. The costs of fishery production, and with them the sources and level of investment and the institutional structure of the industry are substantially influenced by this fact. Excessive exploitation of fishing grounds may be reduced by restraints on competition, or may lead to higher costs and, indirectly, to the need for greater investment. The problem has obvious international aspects which are reflected in ancient disputes over fishing rights and, more recently, in the formulation of international management programs based on better scientific knowledge of the fish stocks. In the application of such programs, serious economic problems arise concerning not only the costs involved in restraint, but also relative changes between different types of fishing, between different fishing communities and between different fishing countries. These problems are increasingly becoming the subject of international debate.

Inland Fisheries

In inland fisheries the situation is very different, in that in many cases the possibility of exercising tenure over an area of inland water permits efficiencies of management comparable almost with animal husbandry. It so happens that the inland fisheries of Europe and North America, where fisheries generally are most highly developed technically, are of relatively minor economic importance. However, there are many examples in both these regions of control and management which illustrate the opportunities for controlled production where exclusive rights of tenure prevail. It would serve little purpose to discuss here tenure in these countries with reference to major institutional changes, and it will be sufficient, perhaps, to observe that in other regions, especially Asia and the Far East where inland fisheries assume their greatest importance from an economic and nutritional standpoint, the introduction of certain management techniques could bring about a substantial increase of fish production, but is at present impeded by problems of tenure and other legal and social obstacles.

In this region the ownership and tenancy of inland fisheries generally form an integral part of the pattern of land tenure, mainly where they concern ponds, tanks, small streams, etc., and also areas of seasonal inundation which permit the rearing of fish, e.g., wet rice paddies. As in agriculture, complex systems of tenure reflected in fragmentation of holdings and absentee landlords restrict investment and restrain development.

In other inland fisheries, e.g., large lakes and main river systems, fishing rights are based on various forms of lease and licence. Sometimes, especially in the case of subsistence fishing, there is no legal form of tenure, which usually follows unwritten traditional customs of usage. Here, ownership is often vested in governments or other public authorities ; this is especially true of artificial lakes, reservoirs, etc., connected with irrigation projects which lend themselves more easily to rational systems of tenure in the interests of development, e.g., the reservoirs of Mettur and Mopad in Southern India.

Perhaps the principal observation to be made in regard to systems of tenure in inland fisheries is that the process of management by which these widespread resources can be most efficiently utilized entails extensive regulation and direction of fishing. In many cases this will depend on appropriate changes in land tenure generally. In others, where ownership is already vested in governments, more rapid progress will be possible provided that inland fisheries are regarded as an integral part of rural economy and society. The tendency has been for inland fishermen to receive little consideration in over-all plans for land and water use, which mainly concern usages for agriculture, power, navigation and industry.

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One of the more significant features of the postwar period is the importance which is generally placed on the institutional factors for agricultural and general progress. In many countries government action is demanded to revise defective and outdated institutions which are recognized as serious obstacles to development. In land tenure, the demand for agrarian reform can well be defined as a demand for better institutions to facilitate the process of economic development. But the tenure system, however important, is only one of the many factors and conditions which control the development of a country. Even considerable reforms in the system of land holding may have only a limited effect, unless they are co-ordinated with measures in related fields and with a complementary program for general economic development. But if the process of development is initiated without sufficient consideration for land tenure conditions, adverse conditions of tenure not only check the favorable trend to economic progress, but may even nullify the achievements already reached.

AGRICULTURAL CREDIT

Agricultural credit has expanded substantially in the postwar period. In the more developed parts of the world,[5] agriculture is increasingly becoming a capital intensive industry ; the decline in the rural population requires the substitution of machines for manpower, and modern farm technology implies the replacement of simple buildings by new and complicated stuctures for storing and processing farm products. Technical progress also accounts for increased needs for working capital for such things as improved seeds, more chemical fertilizers and prepared feedingstuffs. Rural electrification and the growing popularity of mechanical household help, as well as the general desire for improved living conditions, also give rise to additional demands for capital in the more developed regions. [6]

In the underdeveloped regions the gradual shift from a subsistence to a market economy in agriculture, and the spread of improved farm practices alike raise the capital requirements of farmers. In addition, though to a much lesser degree in these regions, improved standards of living mean increased capital needs. Political changes in formerly dependent areas, the reorganization of agrarian structures and the economic planning of agriculture have also greatly expanded the demand for investment capital in agriculture.

The majority of farmers in both developed and underdeveloped countries have not been able to meet these enlarged requirements out of their own financial resources. Greater capital needs have, therefore, required more credit. While reliance on such noninstitutional sources as relatives, merchants, dealers and professional moneylenders has continued, governments have paid much more attention since the war to creating or expanding institutional facilities for agricultural credit, increasing their

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[5] The connotation of " developed " or " underdeveloped " refers to the general level of economic development and not necessarily to the degree to which agricultural credit has been developed. The developed regions are taken to be North America, Oceania and Western Europe.

[6] The value of all non-real-estate physical assets in U.S. agriculture increased betwen 1946 and 1956 from $ 27,100 million to $ 47,200 million. In the same period non-real-estate debt rose from $ 3,200 million to $ 9,800 million (U.S.D.A. : *The Balance Sheet of Agriculture 1955 and 1956*, Agriculture Information Bulletins Nos. 146 and 163).

loanable funds and improving the terms on which they can grant loans. This expansion of facilities has extended in varying degrees to all the various types of institution which serve as sources of agricultural credit.

Sources of Agricultural Credit

Noninstitutional Credit

Noninstitutional credit, i. e., credit extended by individuals such as relatives, merchants, dealers and private moneylenders, plays an important — and, in most underdeveloped countries, an overwhelming — role in agricultural credit, including that of fisheries. Very little exact information, however, is available on the extent of such credit and the terms on which it is granted. In spite of the recognized need for better information, progress has been made in this respect only in two countries : the United States and India.

Even in a country like the United States, noninstitutional credit is of very great importance. The total farm debt in the United States (excluding loans of the Commodity Credit Corporation) outstanding on 1 January 1956, amounted to $ 16,900 million, of which $ 7,100 million or as much as 41 percent was in the form of loans from sources other than public and private financial institutions. Of this so-called noninstitutional credit, $ 3,586 million or about half represented mortgage credit[7] which, in the United States, is mostly extended by individuals looking for safe investments, or by farmers who, in selling all or part of their land, grant mortgage credit to the buyers.[8] The other half, non-real-estate loans, consists mainly of short or medium-term credit from dealers in automobiles, trucks, agricultural machinery and equipment, seeds, fertilizers, pesticides or other production requisites. Some production requisites are also increasingly provided on credit terms by food processors such as canneries, packing houses or sugar mills.

In underdeveloped countries, on the other hand, professional moneylenders are generally the main sources of noninstitutional credit (and often of all agricultural credit). According to the All-India Credit Survey, [9] 93 percent of total rural borrowings came from private persons, of whom almost 45 percent were professional moneylenders and 25 percent large cultivators who also extend credit. While the latters' methods in such matters as security, renewals, rates of interest and other terms do not differ materially from those of the professional moneylenders, their lending activity is described as "not always mere investment ; it often has an ulterior motive ".

As this chapter deals with institutional factors affecting agriculture, the following analysis is restricted to formal agricultural credit institutions. Any study dealing with agricultural credit as such, however, would have to place considerable emphasis on noninstitutional credit. The quantitative information given in the text and Annex tables is therefore not to be taken as an indication of total agricultural credit utilized or available.

Institutional Credit

Co-operatives. Credit co-operatives have been operating, particularly in Europe and North America, since the last century and they have spread to some underdeveloped countries, though not always with complete success. Co-operatives, including their functions with respect to agricultural credit, are dealt with later in a separate section of this chapter.

Village Banks. Village banks are a kind of forerunner of genuine credit co-operatives. They exist in Indonesia, though reduced in numbers as compared with the prewar period, and have been organized recently in Burma and in the Philippines. A village bank, as its name implies, serves a single village community and is usually run by the village people themselves. In principle, the capital, too, should come from

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[7] U.S.D.A., *The Balance Sheet of Agriculture* 1956, op. cit., and *Agricultural Finance Review*, Vol. 19, Feb. 1957 (Table 1 for Mortgage Credit).

[8] University of California, Berkeley, U.S.A. : *Proceedings of the International Conference on Agricultural and Cooperative Credit* 1953. p. 992.

[9] The field enquiries of the All-India Rural Credit Survey covered more than 127,000 families in 600 villages selected in 75 districts all over the country. Investigations were also held in several other rural areas and in urban marketing centers and seats of administration. The data thus collected, together with the views of many officials and private persons connected with rural financing and allied economic activities, were carefully analyzed by the Committee of Direction and a set of reports prepared for publication by the Reserve Bank of India. The results of the Survey have been published in three volumes (I. *The Survey Report.* II. *The General Report.* III. *The Technical Report*) in Bombay, 1954-1956.

within the village, but so far this has usually proved to be impracticable. In the Philippines, village banks are for the time being organized and partly financed by the Rehabilitation Finance Corporation ; in Indonesia, too, most of their capital stems from the government. Village banks, having small resources, concentrate of necessity on short-term lending, though in the Philippines they extend mainly medium-term loans.

Commercial Banks. Commercial banks play a significant role in financing agriculture in North America and Oceania. The large scale of much of the agricultural production in these regions makes loans to farmers more attractive to commercial banks, especially since the war, owing to the improved economic position of agriculture. Moreover, banking in North America is less centralized than, for example, in Western Europe. In the United States almost half of the total amount of institutional credit to agriculture at the end of 1955 came from private banks. In Australia and New Zealand commercial banks also contribute substantially to agricultural credit, although branches of urban banks rather than independent rural bankers are the main lenders. Thus, in Australia, about two thirds of total agricultural credit outstanding in 1955 was with commercial banks.

In Western Europe, although the banking systems are long-established and efficient, farmers in general only occasionally obtain credit directly from commercial banks, except in Switzerland and the United Kingdom.[10] Among the reasons usually advanced is the concentration of commercial banking facilities in big towns, their severe standards for securities and the fact that individual loan requests are generally small. Special banks have been organized to serve agriculture, particularly mortgage banks for lending on the security of farm real estate, but in most cases they have had to be helped through public funds or through tax or other privileges. This has been the case particularly in the postwar period when the private capital market was seriously disrupted in many countries and the floating of bonds by private agricultural or mortgage banks became difficult. Some governments used part of the counterpart funds established from European Recovery Program advances to assist in the financing of such institutions.

Elsewhere the role of commercial banks in providing agricultural credit remains relatively insignificant. Not only is private commercial banking often still rather backward and almost entirely limited to a few big cities, but even where the general banking situation is more highly developed, agricultural needs tend to be neglected. Thus in India " agricultural production gets less than four rupees out of every hundred advanced by commercial banks. The data of the Rural Credit Survey indicate that the credit obtained from commercial banks by the cultivator was less than 1 percent of his total borrowings and even so was confined to a few districts ".[11] Whatever credit is forthcoming from commercial banks to agriculture is mostly to owners of plantations and big farms and is therefore confined to countries or localities where such large-scale farming is important. Everywhere, however, commercial banks frequently contribute indirectly to the financing of agriculture through loans to merchants, produce-brokers or contractors, often against notes given to them by farmers for purchases of machinery or implements or for advances against crops or cattle.

Governmental Credit

As co-operative credit societies and commercial banks have not in general greatly extended their activities into areas other than those where they were working efficiently before the war, the growing postwar demand for agricultural credit from institutional sources has often had to be met by governments, either directly or through assistance to specialized institutions.

Direct governmental credit to farmers is usually restricted to emergency situations, such as general crop failures or livestock epidemics, or to the financing of special groups, such as young farmers, mountain peasants, war veterans, refugees, or new settlers in the wake of territorial changes or land redistribution. Some of these groups have only emerged since the war, or their numbers have increased during this pe-

[10] In Switzerland the share of commercial banks is estimated by the Department of Agriculture at about 50 percent. In the United Kingdom in 1955 commercial banks are said to have provided about 25 percent of mortgage and some 50 percent of other long-term capital (cf. S.G. Hooper : *The Finance of Farming in Great Britain*, London 1955).

[11] All India Rural Credit Survey, Vol. II, *The General Report*, p. 181, Bombay 1954.

riod ; thus direct government credit has expanded quite substantially. As a normal feature of agricultural credit, direct government lending is of importance in some countries in the Far East where " Taccavi Loans " are a statutory privilege of farmers in Burma, India and Pakistan. In recent years there has been a considerable increase in the amounts thus made available to agriculture by governments, in addition to direct loans and grants for assistance in the " Grow-More-Food Campaigns " in India and Pakistan.

Credit extended by central or local governments is of greater relative importance in fishery than in agriculture. Not only is government credit used, as in agriculture, to cope with emergency situations, but in many countries (e. g., Canada, U.S.A., about ten European countries, India, British colonies, etc.) loans are made regularly to fishermen as a normal part of the activities of governmental fishery administration. In many European countries and in Canada, Japan, and recently also in U.S.A., a good deal has been done to improve the credit situation of fishermen. A number of laws and regulations have been enacted authorizing financial assistance for the acquisition or improvement of fishing boats and gear, mainly by loans, but occasionally by outright grants, guarantees or subsidized rates of interest. Sometimes assistance is also given to finance processing plants or other shore installations. In countries with a highly capitalized fishing industry, these measures appear to have had the desired effect. In underdeveloped countries, also, there are examples of successful public financing, as for instance in Bombay and Hong Kong, though in these cases associated with many ancillary benefits for improved equipment, marketing and welfare. Where the economic and educational level of fishermen is low there is greater need for the integration of technical and financial assistance.

In forestry, too, where direct government credit plays a more prominent role, neither small forest owners nor private credit institutions can afford substantial investments from which little benefit can be reaped for ten or, more generally, thirty to fifty years. During the last ten years many governments have therefore organized financial help to private forest owners on a large scale. It may take the form of grants or of loans at a very low rate of interest and, in the case of afforestation, reimbursement may be postponed until the time of the first exploitation. The value of the grant is often represented, partly at least, by the supply of seeds and seedlings. Indirect subsidy is also frequently granted in the form of tax exemption for the lands afforested.

Usually, however, governmental assistance in financing agricultural production is indirect, either through special public or semi public institutions or by channelling government funds through co-operative or other farmers' organizations.

Specialized or Semispecialized Governmental Institutions. The variety of specialized or semispecialized institutions for agricultural credit which have been set up by governments, or with government assistance, is so great that no attempt can be made here to give a comprehensive picture. They are found mostly in economically underdeveloped countries, but in some more developed countries with a well-established system of agricultural credit, changes due to the war, the needs of vulnerable groups, or administrative exigencies have sometimes led to the setting up of new institutions. In the United States, for example, the Farm Home Administration Act of 1946 and the Farm Credit Act of 1953 introduced important changes and improvements in the structure of government-sponsored agricultural credit. In Germany, partition required the establishment after the war of two new central banks for the financing of agricultural credit.

In the underdeveloped regions three main types of governmental or semigovernmental agricultural institutions have developed in the postwar era : specialized agricultural banks, mortgage banks and development or finance corporations.

Specialized Agricultural Banks. All financial needs of agricultural producers are usually met by specialized agricultural banks, although in some countries their lending activities are limited to specific types of credit. In most cases the government provides at least part of the capital or underwrites bonds or debentures floated on the capital market. Often these institutions combine their banking function with other activities such as the sale of machinery, implements or other production requisites, technical advice and guidance, and sometimes also supervision of the utilization of credit granted. The interest rates and other terms of loans extended by these institutions usually compare rather favorably with those asked by commercial banks and, of course, by private

moneylenders. Most such banks have not yet operated over a sufficiently long period to enable a final appraisal to be made of their efficiency. While they have certainly made an important contribution, they have not solved the credit problem of agriculture in most countries.

Thirteen such specialized or partly specialized agricultural banks are at present operating in eleven Latin-American countries ; half of them were organized in the postwar period. Part of the capital of two of them was raised through export taxes — in Haiti through an export tax on coffee, and in Guatemala through a similar tax on a number of agricultural export commodities. Agricultural banks work either directly with farmers or through some kind of co-operative, as in Mexico where the two operating agricultural banks, one for landowners and one for *ejidatarios* (those cultivating plots which are technically owned by the Government), have organized their own string of local credit societies.[12]

In the Far East, the State Agricultural Bank of Burma has functioned since 1953. It works through district banks which, in turn, give medium and long-term credit directly to farmers and short-term credit indirectly through village banks. In India the Imperial Bank has been nationalized and amalgamated with some State-associated banks to form the new State Bank of India for the financing of co-operatives for short-term loans to individual farmers and plantation estates. Specialized banks are also being set up in Pakistan and Thailand.

In the Near East, new agricultural banks have been organized in Afghanistan, in Iran (for new settlers on redistributed Crown land), in Libya, in Lebanon, and in the Sudan. Egypt, Iran and Jordan have increased the resources of their existing agricultural banks, and those of Syria and Turkey, in addition to significantly increasing their operational funds, have been active in advancing loans in kind, particularly tractors and other farm machinery. Some agricultural banks in the Near East concentrate on medium and long-term loans, leaving short-term lending to co-operatives, though the latter themselves have to a certain extent to fall back on the resources of the agricultural banks.

Agricultural banks usually provide mainly the short-term credit which farmers need for operating expenses until they sell their crops or livestock, and also medium-term credit for the acquisition of implements, machinery, breeding stocks or draft animals. Not all grant long-term loans for the purchase of land or for the construction of major buildings or land improvement.

Special fishery banks are operating in Brazil, Denmark, Norway and Spain. Examples are known (Venezuela, Turkey, Japan and Iceland) where agricultural and also development or national banks and development corporations are authorized to grant credit direct to fishermen, though the credit actually granted from these sources is relatively small.

Special Mortgage Banks. Mortgage banks to facilitate the purchase of land, land improvement, or the construction of buildings are a well-established feature of the agricultural credit systems of most economically developed countries. [13] Similar banks (sometimes for agriculture, but more often for all types of real-estate secured credit) also exist in Ceylon and in a number of Latin-American countries, though some of the latter are private banks.

Special Finance or Development Corporations. The role of the mortgage banks in financing agriculture has, however, been overshadowed during the period under consideration by the appearance of multipurpose development institutions which, among their many functions, also deal with long-term mortgage credit. The rather rapid spread of these corporations in the postwar era in underdeveloped countries is part of their more general trend toward some form of government planning of economic expansion. The emphasis of such expansion, and hence of the activities of development corporations, usually lies in the field of public utilities, mining and industry, but they have also assumed a share of responsibility for agricultural expansion.

In Latin America there seems to be a preference for over-all development institutions, sometimes with special agricultural departments. In the Far East, on the other hand, the pattern that has evolved since the war has been to establish separate corporations for agriculture, as in Burma, Pakistan and the Philippines. As indicated in the names of these institutions,

[12] For fuller information see *The Organization and Supply of Institutional Credit in Latin American Countries* FAO, Rome, 1956.

[13] Life insurance companies also represent an important source of long-term agricultural credit in North America and in some Western European countries.

agricultural credit is only a part of their activities, which cover the much broader functions of financing, planning and executing development programs and projects, establishing pilot projects and organizing research and extension work. Only a few grant credit directly to agricultural producers (e.g., in Guatemala, Pakistan, Philippines), while others assist in financing more specialized agricultural credit institutions. The capital of the development corporations is in most cases fully, in others partly subscribed by governments. Some government or semigovernment credit institutions or development corporations regularly increase their capital from public sources, as for instance the *Banca Nacional de Fomento* of Honduras. In several Latin-American countries, particularly Chile and Mexico, such development corporations play an important role in the development of forest industries in close connection with the opening of almost virgin forests or with new plantations.

Special fishery development corporations in the Union of South Africa and in the Republic of Ireland provide boats and gear on credit, but make no ordinary loans to fishermen. Two bodies which are concerned with financing the fishing industry in the United Kingdom, the White Fish Authority and the Herring Industry Board, have the character of over-all fishery development corporations, being responsible for the white fish industry and the herring industry respectively. The loan boards in the Canadian provinces of Nova Scotia, New Brunswick, and Prince Edward Island are also corporate bodies, set up for the sole purpose of financing the fishing industry.

Central Banks and General Purpose Government Banks. These banks for a long time have also financed or refinanced agriculture credit. The few changes in this field in the more recent period consist mainly in the establishment of special departments for agriculture[14] or of new general-purpose government banks such as the State Bank of India mentioned earlier. New government central banks, all-purpose banks, or special public credit institutions have been created in many of the states whose political independence dates from the postwar period.[15] All of these new institutions grant or assist in granting agricultural credit.

The Supply of Loanable Funds

To what extent have these changes in agricultural credit institutions contributed towards increasing loanable funds? Since comprehensive prewar data are not available, an answer covering a long period is impossible. From 1951, however, FAO has collected this type of information through a biennial Agricultural Credit Questionnaire. Data collected in this way for about 50 countries and some 15 non-self-governing territories are to be found in Annex Table 16. Very little is known about agricultural credit extended by noninstitutional sources. The figures quoted, therefore, cover institutional credit only, and in a number of instances even this information is incomplete.

It appears from the data collected that the funds available to agriculture are growing slowly, though hardly at a rate comparable with the expansion in other economic fields. Moreover, in order to judge their real growth it would be necessary to allow for price changes, by deflating the figures by some index of the prices of the items farmers mostly buy on credit. It is well known that, except in a few countries, loanable funds available to agriculture are considered by governments as well as farmers to be quite inadequate.

Although the recent expansion of credit institutions has been mainly in the economically less developed countries, supplies of credit, in relation either to the agricultural area or to the agricultural population, are, as would be expected, much lower in these than in economically developed countries. Figure IV-1 gives a general indication of the relative supply of institutional credit in different countries as at the end of 1955.

Interest Rates and Usual Terms of Loans

The high cost of agricultural loans very often prevents farmers and fishermen from making use of available credit. Private moneylenders

[14] An interesting example is the Rural Liaison Service formed by the Commonwealth Bank of Australia in 1956 to provide commercial banks with technical and economic information needed for their lending activities to farmers.

[15] In the Far East, for example, ten out of fourteen central banks at present in operation are either completely new or have been entirely reorganized since the war. The establishment of two more is under consideration.

are known to ask interest rates ranging from 25 to as much as 400 percent per annum,[16] and it is clear that at such cost farmers and fishermen cannot afford to borrow for productive purposes, except in cases of extreme emergency. A few countries like Indonesia, Israel, Panama and parts of India and Pakistan have tried setting a legal ceiling for interest rates on agricultural loans. Others, like the Philippines, have more general laws on usury. But experience has shown that such legislation is almost impossible to enforce. Again, when a merchant or processor supplies equipment and requisites to farmers or fishermen on credit, the latter are often obliged to sell their produce to the merchant at unfavorable prices.

The only efficient remedy for these problems is the provision of easily accessible credit institutions which are in a position to lend farmers the necessary capital at reasonable cost and terms. The charges asked by such institutions will normally be somewhat higher than those asked for credit to industry or commerce, on account of the higher risk and the necessarily larger administrative machinery. In many instances, however, governments have endeavored to lower the level of interest below that which would obtain on purely commercial grounds, either by providing all or part of the loanable funds free or at nominal cost, or by directly subsidizing the lending institutions, or by guaranteeing loans made by co-operatives or banks to farmers or fishermen.

As to the other terms of loans, no great changes have occurred. The greater part of institutional lending in underdeveloped countries is still on short-term. There is a distinct dearth of medium-term and long-term credit possibilities, some of the reasons for which are discussed below.

Supervised Agricultural Credit

The system known as supervised agricultural credit was first successfully introduced in the United States by the Farm Security Administration, during the depression of the early thirties, to rehabilitate small farmers who were not reached by the extension services and were unable to secure credit through the usual commercial or governmental channels. Since 1943 efforts have been made to adapt the system to meet the needs of underdeveloped countries, particularly in Latin America, and the idea of combining financial assistance to farmers with extension work in the form of supervised credit has made considerable progress.

Supervised credit systems take into account the special needs and living conditions of the farm family, as well as combining the granting of credit with extension work. Unlike ordinary banking credit, success depends on the following three main factors :

(1) careful planning of farm management and home improvement ;

(2) participation of the farmer's family in drawing up and carrying out the plans ; and

(3) proper guidance by supervisors.

Instead of being a mere borrower, the farmmer is brought under a broad educational program which aims to improve his methods of farming, his home management and the living conditions of his family, and credit is an instrument to assist in this basic educational work.

Supervised credit is based on the principle that in most underdeveloped rural areas, credit alone, or education alone, cannot do the job which needs to be done. It is not be regarded as merely a financing system. The rates of interest are not expected to cover the cost of the loans, as these costs include the sums invested in the educational and advisory services. In fact, the extension of credit may be chiefly an inducement offered to conform to an all-round program of social improvement or a specific production policy. It would be misleading to overemphasise the credit aspect of these activities.

The first Latin-American country to start a program of supervised agricultural credit was Paraguay in 1943 ; Brazil and Venezuela followed in 1948, and later Peru and Honduras. In Brazil the first program developed in the State of Minas Gerais, and the satisfactory results of this project have encouraged other states to set up similar programs with a view to helping the small farmers to improve their incomes and living conditions. New projects have been established in the northeastern region of the country, covering eight states, and in

[16] ECAFE/FAO : *Agricultural Credit Problems of Small Farmers in the ECAFE Region.* Bangkok, September 1956 : Table A.

FIGURE IV — 1. Average Loans Outstanding per Hectare of Agricultural Land at End of 1955
(Arable Land Equivalent)

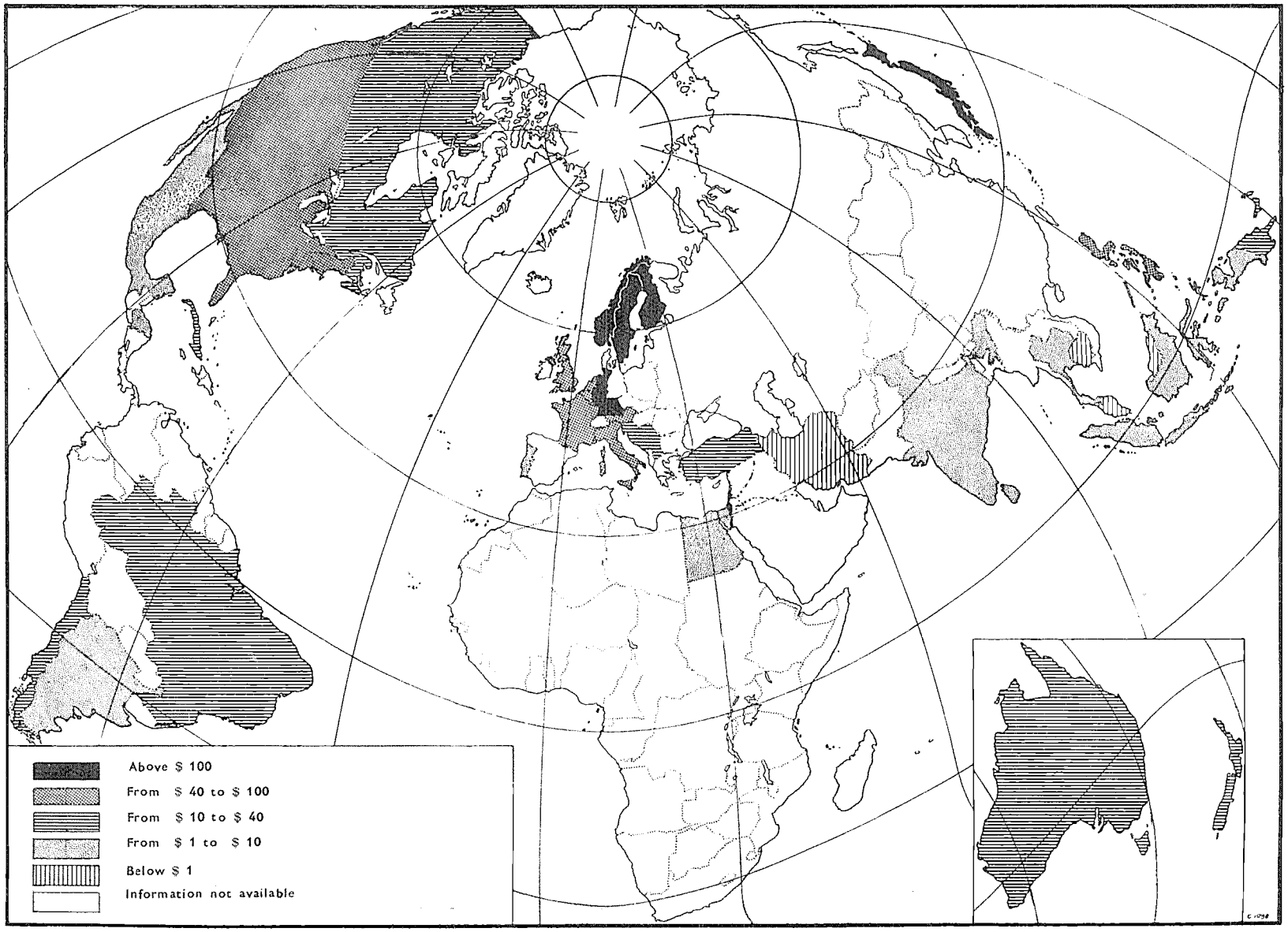
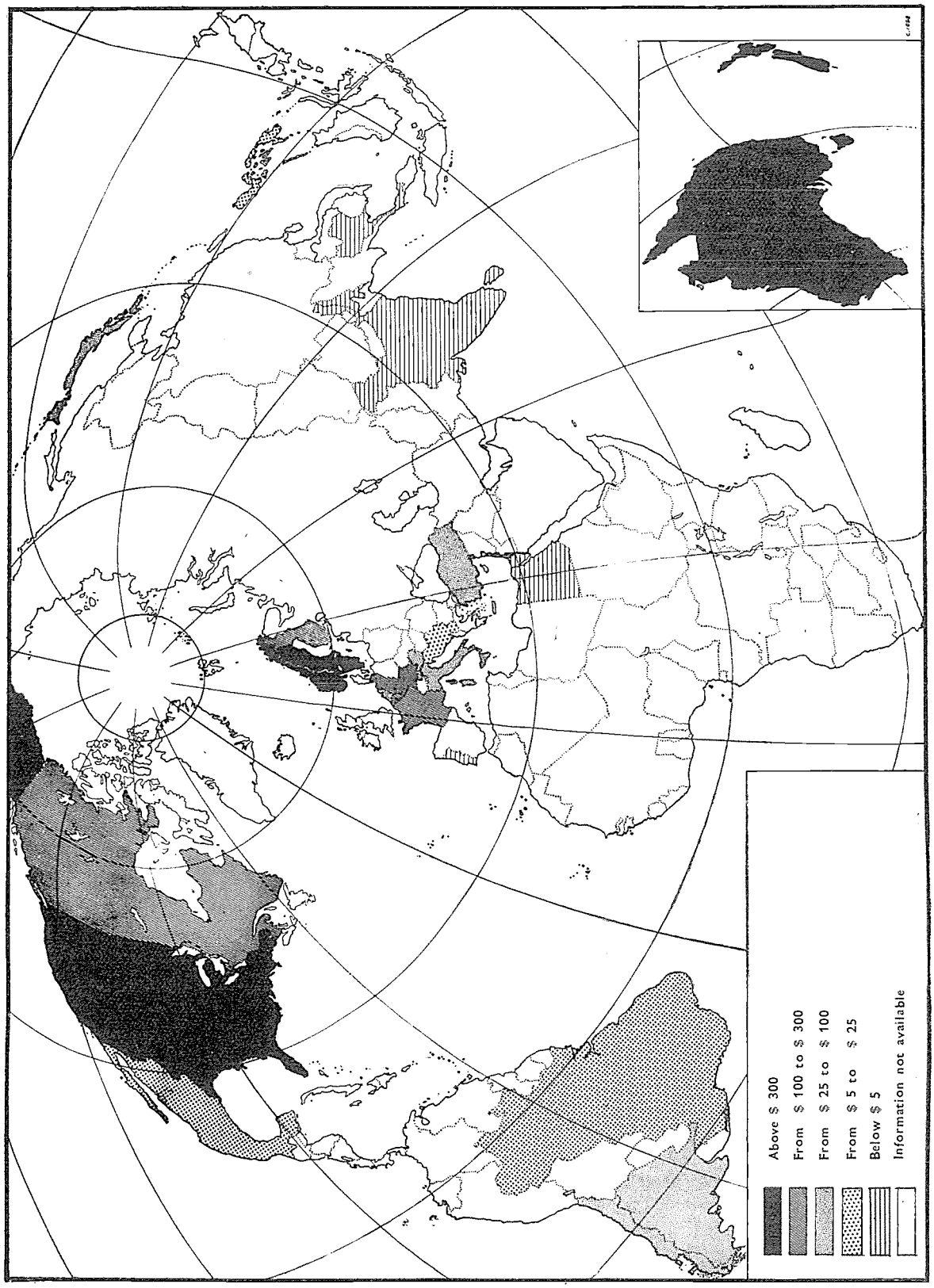


FIGURE IV—2. Average Loans Outstanding per Head of Agricultural Population at End of 1955



three states of the south. Outside Latin America, Iran has also established a supervised credit program following the distribution of Crown land to the cultivators. In the field of forestry, government grants and loans to private forest owners are usually conditional on their keeping to certain prescribed silvicultural practices or forms of utilization, over which the government exercises some kind of control.

Obstacles to the Expansion of Agricultural Credit

In economically underdeveloped countries, where the situation is worst, the main reason for the shortage of agricultural credit is simply the lack of capital. Few people have large enough incomes to be able to save, and those who can usually prefer to invest in fields other than agriculture.[17] Thus governments are the major sources of investment funds, and in view of the many demands on them these are usually woefully inadequate to cover even the most pressing needs. International and bilateral financial assistance has provided some relief in the postwar period through loans and also through outright grants, though in general it does not make a major direct contribution to the financing of agriculture. Deficit financing has become another source of investment funds in some countries.

The small scale of individual enterprises and uncertain returns also makes agriculture an unattractive and difficult field for private investment in most countries. It is primarily for these reasons that special agricultural investment and credit institutions are so often necessary. Although, as already indicated, much progress has been made since the war in providing new facilities, they are still inadequate, especially in underdeveloped countries, where many farmers still have no access to credit institutions. Lack of trained personnel to staff such institutions is one factor limiting progress in this direction.

The difficulty of providing loans is increased by the prevailing system of land tenure in some countries. Since land is the security most often required for bank credit, particularly for long-term credit, the widespread prevalence of tenancy makes access to credit, even if it is available, rather difficult. Lack of proper land titles or uncertainty of boundaries also often makes it difficult to provide the required security for loans, as do systems or customs governing succession or the non-transferability of property.

There are also other gaps in the legal basis for credit transactions, or too great a legal protection of either the borrower or the lender, which are obstacles to developing agricultural credit. Cumbersome and costly legal procedures, difficulty in recovering amounts due, bias in jurisdiction, etc., all make people and institutions reluctant to put their money at the disposal of farmers. Over and above these particular difficulties is the more general economic and cultural backwardness. The illiteracy of farmers and fishermen often makes it difficult for them even to apply for loans, while the lack of communications, storage and transport facilities[18] limits the usefulness of existing credit institutions to their immediate neighborhood and leaves vast areas without any credit facilities whatsoever. On the other hand, complicated and often unnecessary paper work, and delays in handling applications or disbursing approved credits, make farmers turn rather often to private moneylenders. They may also do so because the moneylender is prepared to give credit for social expenses like weddings, funerals, etc., which are considered of great importance in some underdeveloped countries. Institutions are not allowed to lend for these purposes, and this affords the moneylender an opportunity to maintain his position.

Credit and Land Policy

As credit agencies have to operate in a market economy, they have to have a reasonable assurance that, in case of default, they can sell the assets, mainly land, owned by the defaulter. The new land policies in countries where land reform programs are under way

[17] But it should be borne in mind that investment in agriculture need not always be monetary investment. Small construction work, land improvements, or even the making of simple implements can be done by manual labor with very little money input. Such works performed by farmers and their families or as community projects are, of course, also investment in the economic sense of the term.

[18] Under the Indian Agricultural Produce (Development and Warehousing) Corporation Act of 1956, licensed warehouses are being set up throughout the rural areas to facilitate credit.

often imply restrictions on transfer of land and regulation of the real estate market. Therefore the new trend is to integrate credit and land policy by some device such as the establishment of co-operatives. Legal provisions enabling a member of a co-operative in land settlement areas to create a first charge on his land in favor of the co-operative to which he is indebted, give a reasonable security to the co-operative.

In areas where, prior to land reform, landlords were an important source of credit (in kind or cash), redistribution of land may lead to shrinkage of private credit, especially where the new owners were formerly share-tenants or share-croppers. Here, too, co-operatives may best fill the gap in credit facilities resulting from the land reform. Again, legislative measures in many countries to protect tenants from eviction or over-high rents cannot be effective, in the absence of an adequate independent source of credit which can meet the tenants' needs in the event of the landlords threatening to stop credit.

The granting of credit against the security of land, however, must always imply some threat to the security of tenure of the cultivator. There is therefore a tendency in some countries, including India and Egypt, to shift from land as a basis of security to crop-lien. This system of crop-loans benefits all credit-worthy cultivators, whether owners or tenants. For example, tenants whose landlords do not provide them with credit can get credit secured on crops and payable on maturity of the crop.

The Role of Governments

This cursory survey of some of the main obstacles to the expansion of agricultural credit points already to the important role of governments. Over-all economic development in all parts of the world has already to some extent increased the funds available to agricultural producers and made the latter progressively more credit-worthy. Anything governments do to further economic development thus tends to improve the background conditions necessary for more adequate agricultural credit. Nevertheless, for reasons set out earlier, governments are likely to be called upon to provide, for some time to come, all or part of the necessary capital funds. In this respect, the postwar period has yielded a good deal of experience on the most suitable methods, particularly in the early stages, and until agricultural credit institutions have proved to be suitable outlets for private investors.

In many cases, governments will have to go further and themselves organize public agricultural credit institutions, if only to set an example for private commercial or co-operative financing institutions. Given the present situation on the international private capital market, which is unlikely to change fundamentally in the near future, only governments or public institutions will be able to use foreign funds for financing agricultural institutions. Again, when agricultural credit is used as a means of implementing the agricultural policies of governments, this can best be done if the government has a certain control over the granting of agricultural credit.

An Integrated Approach

While the immediate needs and problems of agricultural credit are becoming fairly well understood, and steps are being taken within the limits of available resources, much remains to be done in most countries, including many developed countries. The requirements will vary from country to country, according to the special economic and social conditions. However, the main principles of an integrated approach to the problem of agricultural credit can be stated in general terms.

First, the system should dispose of sufficient funds to satisfy the essential needs of all agricultural producers, as well as trained personnel and a network of agencies to make these funds accessible to the multitude of big and small farmers, and to ensure that the best use is made of them. As pointed out earlier, this usually means that the credit system must be associated with the government. It does not follow that agricultural credit should always be run as a public service, but that government encouragement should be given to the establishment of adequate facilities, and that where necessary public institutions should supplement existing private sources. In addition to providing additional facilities, the existence of public institutions can do much to improve the conditions under which all credit is granted to farmers.

Second, the agricultural credit system should cover the short, medium and long-term requirements of farmers, foresters and fishermen, and

should be supplemented by arrangements to aid the marketing, storing and processing of their products. More and more, however, it has become apparent that the personal credit and standing of the individual farmer is the best security. This can be assessed and utilized only when loans are issued through locally organized co-operative societies or other local organizations. The personal standing of debtors in their community and in their co-operative organizations has proved to be of great usefulness for the recovery of loans. Co-operative methods carry with them the additional advantages of making it unnecessary to insist on land as the main form of security for loans, with the threat to the security of tenure of the cultivator that this may imply, and also of making institutional credit available to tenants, including share-croppers.

Third, the main object of agricultural credit should be the provision of sufficient capital for efficient production, though it may often be necessary to help farmers with credit to cover their living and incidental expenses until the harvest, especially in underdeveloped countries. If credit is used primarily to raise agricultural productivity, it follows that its terms (interest rates, length of repayment period, security requested, etc.) should not be such as to impede the most productive use of the credit available. This again will usually entail some government contribution to reduce charges until such time as agriculture becomes sufficiently prosperous to obtain credit on ordinary commercial terms.

Such an integrated approach — as it has been called in the All India Rural Credit survey — should also be connected with all the other public and private institutions and activities which are concerned with the welfare of the rural population, such as extension work, co-operatives, crop and livestock insurance, etc.

A sound agricultural credit system must be able to provide for a multitude of individual farmers, whose credit needs often vary widely as regards size of loans, purpose, and tolerable charges and repayment schedules, and also to resolve a number of related problems which have to be dealt with simultaneously, if agricultural credit is to be an integrated part of an over-all national agricultural policy. All this makes it almost impossible for agricultural credit institutions to deal effectively with each individual applicant. The need for some kind of borrowers' association at the local level seems, in many instances, to be an almost essential prerequisite of a well-functioning credit system. As such a system is connected with so many other farm activities, the best solution may often be to make use of existing co-operatives, strengthening them where necessary, or to create such facilities where they are still lacking.

PROGRESS IN THE ESTABLISHMENT OF FARMERS' CO-OPERATIVES

The co-operative movement, in its long history of development in many countries, has shown great adaptability in a wide variety of circumstances, as well as strong powers of resilience and resourcefulness in the face of the exceptional adversities of two world wars. During the period 1919 to 1939 co-operative societies not only recovered from the effects of World War I, but achieved a steady trend of growth in many parts of the world. World War II brought new strains, some adverse and some providing new opportunities for rapid growth. In this section the purpose is to look at the picture of co-operative development since World War II, examining briefly some of the outstanding changes and problems which agricultural co-operatives have experienced.

General Factors

In the twelve years since World War II ended, co-operatives with a farmer membership have shown vigorous life in practically all countries of Africa, Asia, Europe and North America, and to some extent also in Latin America and the Near East. Several general factors account for this growth. One is a steadily widening appreciation of the vital role which co-operatives can play in facilitating agricultural progress, especially in countries where farms are so small as to make co-ordination their only hope of modernization. Awareness of this fact is now more evident in government circles, especially in countries which have become independent since the war.

Another factor is that the co-operative movements in many countries are now so strong that they can support a program of international technical assistance. It is quite remarkable to what extent co-operative activity at the international level has increased. For example, membership in the International Co-ope-

rative Alliance which in 1946 extended to 15 countries, with 22 affiliated organizations, had mounted by 1951 to 22 and 38 respectively, and by 1957 to 39 and 77, virtually a three-fold increase in ten years.

Co-operatives in Underdeveloped Regions

Numerous co-operatives exist in the economically underdeveloped regions of Africa, Asia and Latin America, though comparatively few can do so entirely out of their own resources. Nearly all, and they number thousands, with a membership running into millions, owe their existence to government initiative and tutelage. This is largely accounted for by the lack of literacy among the members and their inability to partake fully in the management of their co-operatives. They must rely on the help of specially trained staff. Even when this is provided, usually by a government, there is still the active opposition of any interests which stand to lose in competition with successful co-operatives.

The degree of supervision that is necessary to strengthen co-operatives in underdeveloped countries is a problem. If money is provided by the government to pay supervisory staff and to finance the business of co-operatives, there is a tendency to an increased surveillance, often leading to extensive interference and even to direct management by government staff. There is then a danger that members may become apathetic or resentful of what seems excessive outside control.

Governments of countries in Africa, Asia, the Near East and Latin America, which have sponsored co-operatives, have mostly believed that after a few years it would no longer be necessary to do more than administer the special co-operative legislation which is usually the first step in official sponsorship. It may be asked now, after ten or more years of postwar progress, how many co-operatives born of official parentage have in fact achieved adult independent status. The answer may be disappointing. A large proportion of these co-operatives have not yet proved their self-sufficient capacity and in some countries the degree of government partnership has been considerably extended. Burma, Ceylon, India and Thailand are notable examples from Asia; Egypt and Nigeria from Africa; Argentina, Bolivia, Guatemala and Mexico from Latin America. It seems likely that for a long time yet a distinction will remain between the vigorous and self-sufficient co-operatives of Europe and North America and the officially sponsored societies of Africa, Asia and Latin America. The difference is perhaps not so vital as doctrinaire criticism would make it appear ; the important thing is that knowledge of co-operation is reaching more and more farmers, and if in time they want to do without government help, there is a good chance they will be allowed to do so. The real danger probably lies less in their financial dependance than in the almost inevitable tendency to look upon such co-operatives as official mechanisms rather than as institutions controlled and sustained by the members themselves.

Co-operative Legislation

An interesting feature in the postwar picture is the growing number of countries which have enacted, or decided on, co-operative legislation. This is less true in Europe than in other parts of the world. Denmark still has no special co-operative legislation, while in the United Kingdom, the country which first evolved a successful co-operative, the law which provides the legal basis for co-operatives remains the Industrial and Provident Societies Act of 1852, though since several times amended. These two countries, however, must be regarded as the exceptions which prove the rule.

In North America and in the Indian subcontinent specific co-operative legislation was achieved by the pioneers of co-operation. Prior to World War II a few countries had adapted the Indian co-operative laws to their own purposes, and one or two Latin-American countries had taken as a model the United States laws on co-operatives. After 1945 came a wide surge of interest extending to many countries. Italy passed a new law in 1947, replacing the restricting legislation of the Fascist regime, and there followed a number of other laws applicable to co-operatives of various types. In Canada co-operative legislation has been mostly a matter for the provincial legislatures, Saskatchewan in particular taking the lead. For the British overseas territories a model law, based on Indian and Ceylon legislation, was prepared and published in 1948. It has been followed in many countries of the British Commonwealth and it has influenced, to some extent, legislation in other countries. In Yugoslavia, the law establishing agricultural co-operatives, made in

1946, was subsequently modified in a manner especially interesting to students of co-operative collective farming. The revival of the co-operative movements in Western Germany and Japan after World War II illustrated the fundamental importance of legislation affording co-operatives a recognized status in commerce and industry. In the Belgian Congo, a new decree on native co-operative societies was published in 1956.

All the Latin-American republics now have legal provisions regulating co-operative societies. Twelve of these countries had enacted co-operative legislation of some sort prior to 1945. From that year on, however, every Latin-American country has legislated anew, either by consolidating previous laws of an *ad hoc* character, or by specialized enactments. While this represents an impressive volume of legislation, it is perhaps necessary to add that Latin-American co-operative laws tend to provide an abundance of regulations in addition to the fundamental principles normally laid down in a basic law. Notable exceptions, however, are Argentina, Guatemala, Haiti and Honduras.

Mention needs to be made of the special example set by two countries : Burma and Italy. The first co-operative law passed in Burma dates back to 1904, and this remained in force until 1956 when a new act was passed, incorporating the latest ideas considered applicable to Burmese requirements. The up-to-date nature of this legislation is noteworthy, while entrenched in the constitution of Burma are provisions giving preference to co-operatives in the economic policies of the Government. In Italy the new Constitution of 1947 recognized the social function of co-operatives as a form of security, and the absence of private speculation in their objectives, and made provision for measures to encourage their development.

Agricultural Co-operatives

The main types of agricultural co-operatives and the problems which have arisen since World War II may now be briefly reviewed and some indication given of how far their solution is being satisfactorily achieved. The various types of co-operative are dealt with in the following order : savings and credit, production, marketing, purchase and supply services, fishing, forestry and, lastly, a miscellaneous category including the multipurpose society.

Savings and Credit Co-operatives

Elsewhere in this chapter, in the section on agricultural credit, the main obstacles to the expansion of credit institutions have been reviewed. These all apply with special pertinence to co-operatives in underdeveloped countries where many farmers are illiterate, have meager resources and little experience of the democratic methods of control and of the mutuality which are essential elements in the operation of successful co-operative credit societies.

Postwar co-operative development in the majority of countries in Africa, Asia and Latin America contrasts with that in the economically more developed parts of the world. The latter is a tale of steady advancement to the point where co-operatives play a major role in the financing of agricultural credit; the former is not so much a story of decline as of insufficient growth, despite the fact that very many credit co-operatives have been reported since the war from Burma, Ceylon, India, Indonesia, Malaya, Pakistan and Thailand, as well as from Cyprus, Egypt and Nigeria. The All-India Rural Credit Survey, completed in 1955, disclosed that after fifty years of official encouragement, co-operatives were supplying no more than three percent of the total funds advanced annually to farmers.

Believing that co-operatives can and should play a much larger part in agricultural finance, the Government of India aims, in its Second Five Year Plan (1956-61), at a rapid expansion of the funds available and actually loaned through co-operatives. In other words India has decided upon a very active policy of what is termed " state partnership of co-operatives ". Such a policy calls for a nice judgement in its implementation, if the risk is to be avoided of overstraining the capacity of a co-operative movement to use credit effectively. In India, as in many other economically underdeveloped countries, the progress of credit co-operatives has been hindered by the very small scale on which most farmers operate, their primitive methods, their illiteracy and the poor communications which make organized marketing difficult to arrange.

In Germany, where a system of credit through co-operatives was pioneered over a century ago, most societies languished or died during the Nazi regime. But the idea did not die, and since World War II German farmers have resuscitated their co-operative credit banks to the

point where they are able to meet all but a small part of the short and medium-term loans required in rural areas. At the end of 1955 the number of Raiffeisen Agricultural Societies in Germany was 23,067 with 3½ millions members. In most other European countries farmers now have access to credit through their co-operatives, notably in France, Luxembourg, the Netherlands and Switzerland. The numerous small farmers being resettled under Italy's postwar land reform program are getting co-operative credit facilities supplies through the reform agency. It is intended that these co-operatives will become self-governing in a few years, when enough experience has been gained by the farmers. In countries where farms are relatively large, as in the United Kingdom and Australia, the balance of advantage in joining a credit co-operative may be less apparent, because a large landlord or large farmer can approach a commercial bank individually for a loan, unlike small farmers who must aggregate their credit needs and assume mutual liability if they are to obtain loans at reasonable rates of interest.

In North America the growth of credit unions has been very vigorous, increasing at the rate of 1,500 a year since 1945. Full use of these institutions has been made by the Farm Credit Administration of the United States Government, especially during the last decade. In Canada, today, there are over 3,000 credit co-operatives, two thirds in rural communities, and they now lend annually over $ 80 million for agricultural purposes.

The United States farmers have shown in their own Co-operative Banks how, by steadily accumulating assets and maintaining a credit-worthy record, gradually to eliminate dependence on government finance. On June 30 1956, there were in the United States 1,081 farmer-owned national Farm Loan Associations, 498 active Production Credit Associations and 13 Banks for Co-operatives. All had sufficient financial status to be able to get ample nongovernment credit facilities on competitive terms. The Production Credit Associations had, when they started more than twenty years ago, $ 90 million of government capital. Since the war this capital has been steadily amortized by the farmers, until by the middle of 1956 they had complete ownership of 99 percent of the total.

In the Near East the Agricultural Credit Bank of Egypt is being gradually transformed into a co-operative central bank, serving the considerable number of credit co-operatives already established in that country. In Cyprus the credit society is the foundation of a co-operative movement which, since the war, has grown so healthily that it now serves all sections of rural life. Turkey, the Sudan and Jordan have also some growth of credit co-operation to report, but other Near East countries have scarcely started.

Production Co-operatives

Production co-operatives are mentioned in another section of this chapter, in the context of land tenure developments, and will therefore be dealt with very briefly here. After World War II, when there was urgent need to expand agricultural production, the possibilities of co-operative collective farming attracted lively enquiry, more often in countries with a multiplicity of small farms. These enquiries were usually directed to Israel, Mexico, the U.S.S.R., or Yugoslavia. More recently, study groups have visited Mainland China to see whether the co-operative developments there can give useful guidance.

Outside the countries already mentioned, a number of co-operative farming societies have been founded during the last decade and have survived with a mixed degree of success in Italy, Canada (Saskatchewan) the United Kingdom, Cyprus and India. In Pakistan and India there exist a good many so-called better farming co-operatives, which aim at promoting improved methods but which do not involve joint farming.

Marketing Co-operatives

In marketing, including processing, the co-operative picture has some brilliant colors. Remarkable progress during the last decade in membership and turnover has been attained by the farmers in Europe, where France, Denmark and the Netherlands are outstanding, and in North America. Marketing co-operatives in France have handled during the last decade 80 percent of the total cereals marketed, milk (41 percent), wine (23 percent), oilseeds (20 percent) and sugar beet (20 percent). Almost the entire production of Danish butter, cattle, bacon, eggs and poultry for export is marketed co-operatively. In the Netherlands, also, co-operative marketing organizations have more than recovered their prewar strength, handling substantial proportions of the total output of

horticultural produce (90 percent), eggs (40 percent), butter (60 percent), cheese (40 percent), seed potatoes (40 percent). In the U.S.A. 24 percent of all farm produce is now handled by co-operatives, as compared with 19 percent in 1946. In Canada the proportion is about the same ; in several postwar years it was over 30 percent.

In Ghana and Nigeria since 1946 there has been a substantial increase in the amount of cocoa and other agricultural products brought to the market by co-operatives. This development compares in its significance with the postwar growth of cotton co-operatives in Uganda and of co-operative coffee marketing in Tanganyika, because the members in all these instances are African farmers having little or no previous experience of co-operation.

The most striking feature of the co-operative statistical summary 1945-54, issued in respect of the British dependent territories, is the growth in the volume of marketing operations.

In 1945 the total turnover of marketing co-operatives was less than $ 2 million ; in 1954 the goods handled were worth nearly $ 40 million, a very remarkable advance, even after allowing for the rise in unit values during the same period.

The progress made in agricultural co-operative marketing in Africa after World War II has not been paralleled in Asia, with the outstanding exception of Japan where co-operatives have made a remarkable recovery in many directions, including marketing. The fact that co-operative marketing has not, generally speaking, made widespread progress in the underdeveloped countries is probably connected with the slow improvement of credit facilities. It has not yet been realized widely enough that credit is a vital factor linking all branches of a co-operative movement and is of particular importance in marketing societies. Agricultural co-operatives without a sound credit system are in no better plight than irrigated crops dependent on an imperfect system of water channels. Too easy credit can ruin a co-operative, just as excessive water will drown a crop, but too little credit is as stunting as too little water.

The postwar picture of co-operative marketing would not be complete without mentioning regulated marketing by statutory boards. The prototypes were evolved in Queensland, Australia, where a score of marketing boards have existed for many years. There the producers themselves determine whether a board shall be established and what shall be its operating policy. These boards use co-operatives as their agents. Since World War II co-operatives have come to play a part in a good many marketing boards outside Queensland, e. g., in Canada (Okanagan apples), France (cereals), Iceland (all the main farm products), etc.

Another noteworthy feature of marketing co-operatives is their system of auctions. In the Netherlands almost the entire fruit and vegetable crop is sold through co-operative auctions, or " veilingen ", organized and managed by the growers. A " veiling ", however, has a special method of working which, although not of complex character, has not yet been successfully initiated in other countries. Co-operative auction markets are also to be found in the United States. New York State alone has eight co-operative livestock auction marts which are farmer-owned and operated ; seven of these belong to a co-operative chain, the Empire Livestock Marketing Cooperative, Inc. Each of the tobacco-producing areas of the U.S.A. has in it one or more co-operatives and eleven operate tobacco auction warehouses with good results. In Tanganyika the Kilimanjaro Native Co-operative Union operates an auction room where large quantities of coffee are successfully marketed.

Before leaving the production and marketing sector, something should be said about international trading between co-operatives. Its theoretical benefits are more readily appreciated than the reality, because, although a few countries have attained a regular interco-operative commerce, the progress made in recent years has disappointed some of the hopes which were entertained before the wartime economic controls were relaxed. For example, the International Agricultural Co-operative (INTERCOOP C. A.), a trading organization with 14 member co-operatives in 10 countries, reported in 1955 that although its volume of business had increased slightly, it could not be spoken of as " a satisfying course of things ".

Purchase and Supply Co-operatives

A great variety of co-operatives provide purchase and supply services and some also have other activities, e.g., the Federation of Icelandic Co-operative Societies makes large sales of farm requisites, etc, to its members and also markets their whole agricultural output, except dairy products. In Germany large-scale

farm supply co-operatives have grown up since the war, some of which began as credit societies. American farmers have long used co-operatives in purchasing machinery and equipment, seeds, fertilizers, pesticides, feed, petroleum products, containers, building materials and miscellaneous items. An estimated total of 7,235 co-operatives handled farm supplies in the U.S.A. in 1953-54 ; out of this total 3,372 were purchasing associations, 3,768 marketing co-operatives and 95 servicing associations. These figures are almost 50 percent above the totals before World War II.

In Canada, out of the total purchasing and supply business done by co-operatives in 1954, the sale of farm supplies and retailing of consumer goods accounted for 24.2 percent. This proportion had increased steadily throughout the previous twenty years.

In the United Kingdom purchase and supply co-operatives have predominated in the agricultural branch of the movement, but their situation up to World War II was not especially prosperous. During the war, however, and since then their volume of business has steadily improved until it has now more than doubled the 1945 figures. In these last ten years, approximately half the turnover has come from the sale of requisites and half from the sale of members' produce. The former includes such things as feedingstuffs, fertilizers, seeds, pesticides and equipment, but does not include much agricultural machinery, because the manufacturers are unwilling to grant licences on any substantial scale to agricultural co-operative societies in the United Kingdom.

In the French, Belgian and British African territories, as also in Egypt and the Sudan, the supply of agricultural requisites through co-operatives has advanced in recent years, though usually the societies are of a multipurpose type. In India the Second Five-Year Plan, calls for the " setting up of co-operative stores in every national extension block center, smaller stores for each group of twenty villages, to supply cultivators with improved seed, fertilizers and other agricultural requisites on favorable credit terms ". If this vast plan succeeds it will dispel the doubts felt in some minds as to whether it is practicable for the State to utilize co-operatives, both existing and to be created, as instruments of a policy of increased food production.

Japan's postwar co-operative strength is such that it claims attention in almost every category, but here in particular it must be singled out, because in Japan purchasing co-operatives are functionally distinct and linked together in a powerful national federation which, since its establishment in 1948, has recorded remarkably rapid progress. In 1949 its affiliates handled fertilizers, machinery, etc., to a total value of over 6 million yen. Six years later this figure had increased more than tenfold.

Other countries having purchase and supply co-operatives are too numerous to mention in the space of this review, because purchase and supply are two functions for which the farmer very commonly finds it advantageous to co-operate. Purchase and supply are frequently combined with credit facilities, and co-operatives organized primarily for credit purposes, on a money basis, often find themselves providing loans in kind, i.e., members may apply to the society for a money loan, knowing that what they will, in fact, get is a quantity of fertilizer, seeds, pesticides, etc., for which payment will be made later. Similarly, purchase and supply co-operatives seldom insist on payment until harvest time and are thus also credit co-operatives. This form of credit has quite far-reaching importance and its significance should be recognized in agricultural development planning.

Fishery Co-operatives

Many small-scale operators, a highly perishable commodity and remoteness from markets characterize fishing in many countries and create a need for organization and facilities beyond the reach of individual fishermen and traders. In many countries, including Japan, the U.S.A., Canada, South Africa and most of the fishing countries of Europe, private investment or government loans have provided the bulk of the required developments. In some, notably in Canada and Norway, co-operatives have also played an important part.

In Canada, among fishing communities in Quebec, the Maritime Provinces and on the Pacific Coast which were dependent on distant markets and previously reduced to poverty by recurrent economic difficulties, there has recently been an expansion and consolidation of the co-operative movement which has led to larger and more stable earnings by fishermen. In Norway where fisheries are of great economic and political importance, the government

has actively promoted the welfare of fishermen, and nearly the whole of the annual catch of some 2 million tons is now sold through fishermen's sales organizations. Fishermen's organizations are also strongly established in Sweden where they are associated with a strict system of price regulation. In Japan more than 4,000 co-operatives with more than 1 million members are reported to have been organized since the introduction of the fishermen's co-operative law in 1949; they are concerned mainly with the acquisition of leases and fishing rights.

In the more advanced countries, co-operatives are intended primarily to raise the living standards of fishermen nearer to those in other industries. In the Far East, where many co-operatives have been set up, the efficiency and living standards of fishermen are not conspicuously worse than those of other primary producers, and the main objectives have been to produce more food and to lessen the dependence of producers upon "middlemen".

In recent years some 800 co-operative societies have been formed in India, mainly credit societies, though some also supply fishing requisites or market members' catches. In Burma, 770 societies had been formed by 1954, of which 255 were affiliated to the Central Fish Marketing Co-operative in Rangoon which sells all members' catches at wholesale and also supplies loans in cash and kind. Similarly, in Ceylon, co-operatives, mainly to provide credit, have existed for some years, and in 1954 about 55 were affiliated to a Central Co-operative which purchased and marketed members' catches and helped to finance its constituent societies. There is also a fairly long history of co-operation in Indonesia, where the Central Federation of Indonesian Fishery Co-operatives, founded in 1947, by 1953 included 36 primary societies with about 100,000 members.

Not enough is known to appraise the results of co-operative activities in the Far East, though it is clear fishermen have not responded spontaneously to the idea of co-operation and, in general, have been powerless by themselves to remove institutional obstacles. The exceptional cases of successful co-operatives, as in Hong Kong, Bombay and Midyadhari Spill (Calcutta) have all received active leadership and financial assistance from the goverment. There are many reasons for government intervention, including the need to develop fisheries more rapidly and the impossibility of fishermen accumulating adequate savings to finance improvements. Although Far-Eastern co-operatives have not in general an impressive volume of production and trade, the success so far achieved has been considerable in view of the acute shortage of finance, trained leadership and experience of trading operations.

Forestry Co-operatives

In most countries of Western and Northern Europe, in the United States and in Japan, the largest part of the forest is privately owned in small holdings. Individual management of these small forest areas is scarcely an economic proposition. Marketing of quite small quantities of timber is difficult. In addition, the limited technical knowledge of the owners, and the absence of capital for protection and improvement of the stands, often mean that the plots are neglected and their yield is low. The best remedy in such cases has, in postwar experience, been found to be the establishment of forestry associations or co-operatives.

There are many types of such associations. Some of them date back several centuries, while modern types have developed since 1900 and have made great headway during the last ten years. The most efficient type is undoubtedly the one in which the owners merge their land, as well as their timber and means of production, to form one large forest area from several small plots. This was at one time a fairly common practice, especially in the central and mountainous regions of Europe where most of the associations at present in operation were established many years ago. A number of factors, some fiscal, some legal, hinder the formation of new ones, with the result that this collective type of forestry association has assumed a static position in the picture of postwar co-operative trends.

The most widespread type of co-operative is an association of owners of small forest plots, for whom it performs a variety of services, such as the establishment of working plans, road-building, assistance with silvicultural operations and fellings, the marketing of timber and even arranging for it to be sawn for sale as lumber. Co-operatives of this kind, strongly encouraged by the governments, have made spectacular progress during recent years in Norway, Sweden and Finland. In Japan such institutions are by no means new. The first ones were established many years ago, but

constant development and modernization is still taking place.

Certain types of forest owners' associations are also now making progress in Latin America and, even though large holdings are the general rule there, the associations can be of great assistance in the opening and efficient working of the large forests.

In addition to owners' co-operatives, there are also associations of forest workers which are of interest even in countries where the forest is owned entirely by the State. There are very interesting examples in Canada, particularly in Quebec Province. In the U.S.S.R. nearly twenty years ago extensive organization of forest and wood workers was reported in operation. A most promising example is in India where, in the States of Bombay and Madras, forest workers' co-operatives have been used as a channel through which to improve the standard of living of the indigenous communities inhabiting the forest regions. Action of this kind needs considerable support from the government, but for communities living in similar conditions it could well become one of the most important features of "community development" projects.[19]

Miscellaneous and Multipurpose Types of Co-operatives

By leaving the multipurpose type of co-operative to the last, it is convenient to return to the subject of the postwar picture as a whole, for in fact almost every co-operative in existence is multipurpose, inasmuch as the purely single-purpose type is rare. Thrift and credit loan societies, housing co-operatives, consumers' school co-operatives, better living societies, transport co-operatives, craft workers' societies and a good many other miscellaneous types in the postwar picture may all appear to have a single purpose, but in truth many of these serve ancillary purposes, e.g., the housing society is often really another form of credit co-operative, the taxi co-operative not only provides transport, but also undertakes bulk purchasing of fuel, oil and spares, and so on.

A typical craft workers' co-operative is really a multipurpose type, in that today, as exemplified principally in India (Madras and Andra States) and Japan, it usually has at least four distinct objects, namely: (*i*) bulk purchasing and preliminary processing of raw materials; (*ii*) bulk purchase of tools and other working equipment; (*iii*) obtaining and making known among members new techniques and designs; (*iv*) marketing, including advertising, of finished products. Sweden and Nigeria are two other countries which have successful craft worker societies in the postwar era, though not in numbers anywhere approaching India and Japan.

All told, however, this miscellaneous category, although surprising in its multiplicity of variety (Ceylon has reported 77 different types), in the aggregate does not comprise a substantial portion of the co-operative movement in any country, with the outstanding exception of consumer co-operatives. These do occasionally preponderate, notably in the United Kingdom and Sweden, but their progress will not be discussed here because consumers'societies are mostly urban in character, having only an indirect connection with farmers. In Denmark, however a fair proportion of farmers do belong to consumer societies; indeed, these days a Danish farmer may belong to more than one consumer co-operative, and he may take his custom to the most convenient at the time, or to the one offering what he thinks is the best service. This multiple membership obliges each society to keep a keen eye on its day-to-day efficiency and is therefore a healthy thing.

The term multipurpose co-operative, although probably applicable very widely as already indicated, is commonly used to identify a special type of co-operative, viz., the society which may have as many aims and objects as the whole community in which it exists. It may have the whole community as its members and its objects can, in theory, be multiplied until all its members are served. Of course, there is a practical limitation as to how many different types of operation can be carried on effectively by one management, and postwar experience has taught that there is a danger of confusion and losses if the activities of a co-operative become so numerous and so diversified that it is impossible to see what are the true financial implications for each object separately.

In India after 1947 the question arose whether it was not time to depart from a policy which regarded single-purpose credit co-operatives as the essential basic type, and to adopt

[19] For further information on forestry co-operatives see Volume 10, No. 2 (1956), of *Unasylva* published quarterly by FAO.

a policy of organizing in each village or community one multipurpose society. For a few years the pros and cons were widely debated throughout India and even beyond. In India however, it was soon the opinion of the majority that if a co-operative is to succced in rural areas, it cannot confine itself to one purpose. Today the arguments as to the merits of multipurpose co-operatives may not yet be fully resolved, but they are now being put to practical test and Indian official policy looks forward to the day when every village will have its own co-operative. Five or ten years hence there will be another chapter to write in the story of the village multipurpose co-operative; it may be a very stirring chapter, full of significance both for India and other countries.

In this necessarily rather brief look at the situation of agricultural co-operatives in the world generally, not much has been said about their difficulties, because the weight of the evidence of steady progress is proof that most of the operational problems are being overcome. As to the signs for the future, the probability is that in Europe and North America the farmers' co-operatives will continue to grow and at the same time will be continually consolidating and reorganizing their internal structure. In other parts of the world, the future of co-operatives will depend very largely on government policies.

ANNEX TABLES

ANNEX TABLE 1A. ESTIMATED WORLD[1] PRODUCTION OF MAJOR COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	95.0	111.3	130.2	118.6	123.4	121.5
Barley	28.5	36 0	43.9	44.8	46.4	52.6
Oats	37.5	42 5	41.4	42.2	45.7	44.3
Maize	94.1	119.7	128.4	122 8	129.6	135.2
Rice (milled equivalent)	70.2	74.8	86.4	82.2	88.0	91.6
Sugar (centrifugal)	20.0	26.6	30.8	31.6	32.0	33.3
Citrus fruit	11.1	14.9	17.0	17.5	17.8	17.7
Apples	11.0	12.6	13.0	13.8	12.8	13.7
Bananas	8.1	10 5	10.9	11.5	11.7	11.4
Vegetable oils and oilseeds (oil equivalent)	9.2	11.6	12.7	13.2	13.3	14.5
Animal fats	2.97	4.10	4.52	4.65	5.05	5.25
Coffee	2.41	2 26	2 51	2.52	2.81	2.65
Cocoa	0.74	0.76	0.74	0.81	0.85	0.92
Tea	0.47	0.56	0 60	0.66	0.67	0.67
Wine	18.0	17.6	20.7	21.2	21.3	20.6
Tobacco	1.96	2.46	2.63	2.83	2.91	2.86
Cotton (lint)	5.31	5.76	6.65	6.49	6.76	6.26
Jute	1.95	2.03	1.49	1.63	2.36	2.28
Wool (greasy basis)	1.51	1.58	1.74	1.78	1.82	1.87
Rubber (natural)	0.96	1.74	1.75	1.83	1.94	1.87
Milk (total)	193.6	205.6	225.6	229.3	232.4	235.7
Meat[2]	26.9	30.8	34.4	35 8	37.3	38.4
Eggs	5 81	7.50	8.27	8.69	8.84	9.04
Index of all farm products	85	100	111	111	114	117

[1]Excluding U.S.S.R., Eastern Europe and China.
[2]Beef and veal, mutton and lamb and pigmeat.

ANNEX TABLE 1B. WORLD TRADE[1] IN SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
	Million metric tons					
Wheat and wheat flour	15.98	25.23	25.11	22.23	23.43	27.53
Barley	2.70	3.57	5.69	5.46	4.78	6.68
Oats	0.87	1.33	1.94	1.48	0.96	1.28
Maize	9.88	4.80	5.32	4.93	5.24	5.83
Rice (milled equivalent)	8.37	4.14	4.33	4.47	4.45	5.31
Sugar	9.29	10.64	12.90	12.32	12.28	12.75
Citrus fruit[2]	1.72	1.80	2.46	2.50	2.64	2.48
Apples	0.69	0.51	0.65	0.61	0.87	0.94
Bananas	2.43	2.31	2.81	3.00	2.98	3.04
Vegetable oils and oilseeds (oil equivalent)	4.67	3.67	3.86	4.33	4.38	4.44
Coffee	1.64	1.89	2.02	1.81	2.03	2.25
Cocoa	0.64	0.64	0.70	0.68	0.65	0.72
Tea	0.42	0.42	0.46	0.51	0.48	0.53
Wine	1.82	1.61	1.96	2.37	2.70	2.58
Tobacco	0.48	0.48	0.55	0.56	0.60	0.60
Cotton (lint)	2.76	2.14	2.28	2.52	2.27	2.52
Jute	0.73	0.77	0.97	0.84	0.91	1.03
Wool (clean basis)	0.63	0.67	0.75	0.64	0.72	0.77
Rubber (natural)	1.15	1.95	1.89	1.98	2.16	2.01
Meat (fresh, chilled and frozen)[3]	1.16	0.89	0.91	0.88	1.01	1.18
Eggs (in the shell)	0.33	0.25	0.33	0.37	0.39	0.39

[1]Including the trade of the U.S.S.R., Eastern Europe and China with the rest of the world, but excluding trade within this group of countries.
[2]Oranges and lemons only.
[3]Beef and veal, mutton and lamb and pigmeat.

ANNEX TABLE 2A. WESTERN EUROPE : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	31.07	30.32	35.14	35.69	37.79	31.80
Rye	7.49	6.65	6.80	7.65	6.70	7.14
Barley	9.08	10.93	13.86	13.72	14.74	19.16
Oats	16.44	14.84	15.66	14.58	14.78	16.28
Maize	9.73	7.14	9.45	8.55	9.76	10.15
Sugar (centrifugal)	4.02	5.20	7.14	6.66	6.98	6.61
Potatoes	69.87	76.28	77.85	81.05	73.26	83.17
Citrus fruit	1.99	2.10	2.36	2.63	2.52	2.22
Apples	7.42	8.72	9.24	9.49	8.70	10.15
Olive oil	0.81	0.86	1.11	0.86	0.69	0.84
Animal fats	1.05	0.89	1.08	1.19	1.26	1.33
Wine	14.13	13.09	15.84	15.32	16.09	15.08
Tobacco	0.19	0.25	0.28	0.29	0.33	0.30
Milk (total)	77.02	77.15	88.64	91.08	90.33	91.23
Meat[1]	8.72	7.77	9.47	10.28	10.58	10.76
Eggs	1.94	2.09	2.45	2.65	2.71	2.79
Index of all farm products	93	100	115	115	116	118
FOREST PRODUCTS[2]						
Sawn softwood (million standards)	10.24	9.21	9.65	10.66	11.12	10.97
Sawn hardwood (million cubic meters)	9.07	9.69	8.96	10.17	10.75	10.59
Plywood (million cubic meters)	1.09	1.28	1.61	2.06	2.16	2.14
Fibreboard (hard and insulating)	0.17	0.72	0.84	1.05	1.19	1.22
Wood pulp (chemical)	6.67	5.90	6.45	7.64	8.29	8.45
Wood pulp (mechanical)	3.95	3.55	3.94	4.39	4.67	4.80
Newsprint	2.80	2.39	2.82	2.97	3.20	3.40
Other paper and board	8.29	8.64	10.39	11.80	12.80	13.30

[1]Beef and veal, pigmeat, mutton and lamb.
[2]Includes Eastern Europe. Figures refer to calendar year and prewar figures to 1938.

ANNEX TABLE 2B. WESTERN EUROPE : EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
			Million metric tons			
GROSS EXPORTS						
Wheat and wheat flour	1.44	0.75	1.02	2.27	3.33	2.07
Sugar	0.80	1.28	1.51	1.57	1.71	1.49
Citrus fruit	1.18	0.91	1.42	1.26	1.39	0.90
Apples	0.19	0 31	0.49	0.41	0.66	0.69
Wine	0 50	0 47	0.66	0.77	0.62	0.94
Bacon, ham and salted pork	0.27	0.15	0.27	0.27	0.29	0.28
Eggs (in the shell)	0.20	0.17	0.22	0.26	0 27	0.27
Wool (clean basis)	0.15	0.08	0.08	0.07	0 08	0.08
			Million cubic meters			
Coniferous logs[1]	2.39	1.64	0.76	0.90	0.90	0.69
Broadleaved logs[1]	0 50	0 45	0.50	0.67	0.94	0.66
Pulpwood[1]	3.03	3.31	2.70	4.12	5.74	4.94
Pitprops[1]	3.16	2.82	2.51	2.42	2.97	2.91
Sawn softwood[1]	13.86	10.58	13.55	14.50	15.26	13.60
			Million metric tons			
Wood pulp[1]	4.55	3 58	4.00	4.38	4.70	4.95
Newsprint[1]	0.92	0.81	0.99	1.00	1.12	1.25
Other paper and board[1]	1.20	1.45	1.70	2.20	2.40	2.36
			Million metric tons			
GROSS IMPORTS						
Wheat and wheat flour	11.90	14.59	12.85	12.86	13.17	15.59
Barley	2.41	2.53	3.75	3.94	3.57	4.94
Maize	8.46	4.03	4.24	4.26	4.48	5.01
Rice (milled equivalent)	1.27	0.38	0.35	0.41	0.58	0.55
Sugar	3.43	4.20	5.18	3.75	3.95	4.20
Vegetable oils and oilseeds (oil equivalent)	3.00	2.54	2.71	3.01	2.99	3.11
Oranges	1.28	1.32	1.90	1.92	2.05	1.90
Coffee	0.69	0.48	0.59	0.61	0.66	0.75
Cocoa	0.36	0.33	0.39	0.40	0.38	0.38
Tea	0.26	0.23	0.25	0.28	0.26	0.29
Wine	1.68	1.39	1.59	2.00	2.34	2.20
Tobacco	0.37	0.34	0.38	0.39	0.41	0.40
Cotton (lint)	1.75	1.40	1.43	1.57	1.42	1.53
Rubber (natural)	0.36	0.59	0.66	0.71	0.79	0.75
Meat (fresh, chilled and frozen)[2]	1.12	0.81	0.83	0.78	0.92	1.09
Canned meat	0.08	0.19	0.19	0.20	0.20	0.19
Bacon, ham and salted pork	0.39	0.21	0.32	0.31	0.32	0.32
Butter	0.57	0.39	0.35	0.32	0.39	0.45
Cheese	0.23	0.27	0.28	0.28	0.27	0.30
Eggs (in the shell)	0.31	0.19	0.26	0.29	0.31	0.31

[1]Including Eastern Europe.
[2]Beef and veal, mutton and lamb and pigmeat.

ANNEX TABLE 3A. U.S.S.R., EASTERN EUROPE AND CHINA : CEREAL PRODUCTION

YEAR	U.S.S.R.[1]	Eastern Europe	China[1]
	Million metric tons		
Prewar	[2]79 5	43.8	97.9
Average 1948-52	[3]86.5	40 1	[4]116.6
1953/54	84 6	38 7	145 9
1954/55	87 9	38 0	148.6
1955/56	103.0	41.5	153.4
1956/57	130 0	38.1	157.1

[1]Estimates.
[2]1940.
[3]Average 1950-52.
[4]Wheat : 1952 only.

ANNEX TABLE 3B. U.S.S.R. : PRODUCTION OF SELECTED COMMODITIES

YEAR	Cereals[1]	Sunflower Seed[1] (oil equivalent)	Sugar (granulated)	Cotton[1] (raw)
	Million metric tons			
1940	79.5	...	...	...
Average 1950-52	86.5	0.74	2 86	1.17
1953	84.6	1.03	3.43	1.22
1954	87.9	0.75	2.61	1.33
1955	108.0	1.45	3.42	1.23
1956	130.0	...	4 35	...

[1]Estimates. ..... Data not available

ANNEX TABLE 3C. U.S.S.R. : LIVESTOCK NUMBERS

YEAR	Total Cattle	Cows	Pigs	Sheep
	Million head on 1 October			
1953	63.0	26.0	47.6	114.9
1954	64.9	27.5	51.1	117.5
1955	67.1	29.2	52.2	125.0
1956	70.4	30.9	56.4	129.8

ANNEX TABLE 3D. U.S.S.R. : PRODUCTION AND EXPORTS OF FORESTRY PRODUCTS

COMMODITY	1953	1954	1955	1956
PRODUCTION	*Million metric tons*			
Sawn softwood (million standards)	12.00	12.55	13.82	14.20
Sawn hardwood (million cubic meters)	9.90	10.35	11.40	11.45
Plywood (million cubic meters)	0.95	1.02	1.05	1.08
Fibreboard	0.04	0.05	0.08	0.12
Wood pulp (chemical)	1.10	1.10	1.20	1.40
Wood pulp (mechanical)	0.60	0.66	0.72	0.80
Newsprint	0.29	0.32	0.36	0.40
Other paper and board	1.76	1.95	2.04	2.20
EXPORTS[1]	*Million cubic meters*			
Pitprops	0.40	0.59	0.79	0.46
Sawn softwood	1.14	1.46	2.14	1.72
Plywood	0.05	0.07	0.09	0.04

[1]Exports to countries of Western Europe only.

ANNEX TABLE 4A. NORTH AMERICA : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	[1]33.80	44.46	48.64	35.19	38.89	41.78
Oats	[1]65.60	25 30	23.02	25.19	28.11	24.96
Maize	53.20	82.36	82.06	78.24	82.84	88.27
Rice (milled equivalent)	0.62	1.25	1.59	1.89	1.65	1.40
Potatoes	11.94	12.83	12.38	11.41	12.14	12.90
Citrus fruit	3.62	6.41	7.45	7.32	7.45	7.51
Vegetable oils and oilseeds (oil equivalent)	1.19	2.66	2.75	2.87	3.21	3.71
Animal fats	1.29	2.37	2.52	2.52	2.79	2.85
Tobacco	0.62	0.10	1.00	1.10	1.06	1.05
Cotton (lint)	2.76	3.09	3.57	2.97	3.19	2.88
Milk (total)	54.44	59.59	62.18	63.20	63.94	64.83
Meat[2]	8.04	10.91	12.15	12.47	13.29	13.88
Eggs	2.42	3.77	3.85	3.95	3.94	3.95
Index of all farm products	73	100	107	104	108	112
FOREST PRODUCTS[3]						
Sawn softwood (million standards)	11.86	18.28	18.57	18.43	20.05	19.04
Sawn hardwood (million cubic meters)	12.08	18.50	18.27	20.06	18.72	19.14
Plywood (million cubic meters)	0.82	3.15	4.93	5.02	6.11	6.40
Fibreboard (hard and insulating)	0.64	1.23	1.42	1.53	1.70	1.73
Wood pulp (chemical)	5.20	13.25	16.18	17.13	19.35	20.70
Wood pulp (mechanical)	3.44	7.25	7.96	8.27	8.75	9.20
Newsprint	3.38	5.74	6.17	6.51	6.94	7.35
Other paper and board	10.05	21.12	23.20	23.10	25.80	26.60

[1]1937-41 average. Average production for 1934-38 was abnormally low owing to the effects of droughts in 1934-36.
[2]Beef and veal, pigmeat, mutton and lamb.
[3]Figures refer to calendar year, and prewar figures to 1938.

ANNEX TABLE 4B. NORTH AMERICA: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
	Million metric tons					
GROSS EXPORTS						
Wheat and wheat flour	6.03	18.38	16.68	13.11	13.53	21.85
Barley	0.50	1.44	2.76	2.14	2.96	3.56
Maize	0.80	2.31	3.37	1.96	2.75	3.02
Rice (milled equivalent)	0.07	0.54	0.70	0.56	0.52	0.82
Oranges	0.15	0.23	0.37	0.33	0.30	0.41
Vegetable oils and oilseeds (oil equivalent)	0.02	0.40	0.34	0.86	0.76	0.79
Tobacco	0.20	0.22	0.25	0.22	0.27	0.25
Cotton (lint)	1.29	1.05	0.65	0.94	0.57	0.85
	Million cubic meters					
Coniferous logs	...	0.33	0.49	0.60	0.71	0.72
Broadleaved logs	...	0.23	0.24	0.25	0.22	0.26
Pulpwood	...	5.68	4.49	4.64	4.87	5.20
Sawn softwood	...	8.42	9.28	11.15	12.59	10.80
	Million metric tons					
Wood pulp	0.80	1.85	1.91	2.37	2.72	2.62
Newsprint	2.80	4.50	4.92	5.14	5.42	5.55
GROSS IMPORTS						
Sugar[1]	3.20	3.85	3.99	4.02	4.16	4.39
Citrus fruit[2]	0.11	0.19	0.23	0.22	0.21	0.21
Bananas	1.35	1.46	1.68	1.62	1.59	1.58
Vegetable oils and oilseeds (oil equivalent)	0.90	0.55	0.50	0.52	0.55	0.53
Coffee	0.81	1.27	1.31	1.07	1.23	1.33
Cocoa	0.26	0.29	0.27	0.25	0.24	0.28
Tea	0.06	0.06	0.07	0.07	0.07	0.07
Jute	0.07	0.08	0.10	0.06	0.05	0.08
Sisal	0.15	0.19	0.18	0.17	0.18	0.17
Wool (clean basis)	0.07	0.19	0.14	0.10	0.12	0.13
Rubber (natural)	0.52	0.80	0.70	0.65	0.70	0.63

[1]Excluding imports from U.S. territories.
[2]Oranges and lemons only.
... Data not available.

ANNEX TABLE 5A. LATIN AMERICA: PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	8.62	7.94	9.78	11.70	9.52	11.58
Maize	18.00	15.12	18 62	17.32	18 99	17.88
Rice (milled equivalent)	1.33	3.07	3 56	3.79	3.83	3.88
Sugar (centrifugal)	6.89	12.33	12.72	12.84	12.73	13.84
Citrus fruit	3.28	3.64	3.81	3.92	4.02	3.92
Bananas	4.20	6.80	7.63	7.90	8.10	7.90
Coffee	2.11	1.89	2.02	2.01	2.25	2.07
Cocoa	0.24	0.25	0.26	0.31	0.29	0.30
Tobacco	0.21	0.31	0.34	0.37	0.38	0.37
Cotton (lint)	0.59	0.89	0.98	1.14	1.24	1.18
Milk (total)	12.22	14.72	16.70	17.08	18.01	18.69
Meat[1]	5.02	6.07	6.09	6.30	6.48	6.65
Eggs	0.48	0.59	0.69	0.74	0.79	0.84
Index of all farm products	82	100	108	113	116	119
FOREST PRODUCTS[2]						
Sawnwood (million cubic meters)	...	8.35	8.40	9.05	9.25	8.60
Wood pulp	...	0.24	0.31	0.34	0.36	0.38
All paper and board	...	0.70	0.78	0.91	0.97	1.03

[1]Beef and veal, pigmeat, mutton and lamb.
[2]Figures refer to calendar year.
...Data not available.

ANNEX TABLE 5B. LATIN AMERICA: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
GROSS EXPORTS	*Million metric tons*					
Wheat and wheat flour	3.45	2.00	2.62	3.37	4.22	2.97
Maize	6.61	1.20	1.13	2.26	0 54	1.10
Rice (milled equivalent)	0.11	0.25	0.16	0.16	0.13	0.20
Sugar[1]	4.03	7.02	7.74	6.49	7.61	8.15
Bananas	2.04	1.92	2.15	2.11	2.50	2.50
Linseed and linseed oil (oil equivalent)	0.55	0.19	0.17	0.29	0.18	0.11
Coffee	1.40	1.61	1.70	1.35	1.56	1.75
Cocoa	0.21	0.18	0.21	0.22	0.21	0.22
Cotton (lint)	0.34	0.39	0.56	0.73	0.58	0.68
Wool (clean basis)	0.12	0.12	0.17	0.11	0.12	0.15
Fresh, chilled and frozen meat[2]	0.59	0.34	0.24	0.24	0.31	0.49
Canned meat	0.12	0.12	0.08	0.10	0.10	0.09
	Million cubic meters					
Broadleaved logs	...	0.43	0.45	0.37	0.42	0.45
Sawn softwood	...	2.56	2.80	2.60	3.25	2.80
GROSS IMPORTS	*Million metric tons*					
Wheat and wheat flour	1.67	2.84	3.31	3.43	3.52	3.50
Rice (milled equivalent)	0.39	0.36	0.35	0.26	0.23	0.25
Sugar	0.24	0.35	0.40	0.41	0.43	0.38
Potatoes	0.18	0.24	0.22	0.21	0.13	0.12

[1]Excluding trade between U.S.A. and its territories.
[2]Beef and veal, mutton and lamb and pigmeat.
...Data not available.

ANNEX TABLE 6A. FAR EAST (EXCLUDING MAINLAND CHINA): PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	12.13	11.34	11.50	13.51	13.83	13.44
Millet and sorghums	14.94	13.35	18.44	18.20	15.93	17.00
Rice (milled equivalent)	65.28	66.60	77.08	72.07	77.98	81.74
Sugar (centrifugal)	4.18	3.26	4.03	4.78	5.11	5.36
Sugar (noncentrifugal)	3.67	3.86	4.09	4.30	4.19	4.13
Starchy roots	21.62	26.27	30.11	31.87	33.62	34.10
Pulses	6.78	7.17	6.92	8.29	9.09	8.44
Vegetable oils and oilseeds (oil equivalent)	3.96	3.99	4.44	4.91	4.79	5.02
Tea	0.46	0.53	0.57	0.62	0.63	0.63
Tobacco	0.79	0.61	0.68	0.77	0.82	0.82
Cotton (lint)	1.22	0.88	1.13	1.29	1.20	1.34
Jute	1.94	1.99	1.46	1.60	2.32	2.24
Rubber (natural)	0.97	1.65	1.64	1.72	1.81	1.74
Meat[1]	1.63	1.75	1.98	1.95	2.03	2.11
Milk (total)	23.23	25 24	27.36	27.99	28.24	28.55
Index of all farm products	97	100	110	113	117	119
FOREST PRODUCTS[2]						
Sawnwood (million cubic meters)	...	19.67	22.90	24.65	28.40	30.05
Plywood (million cubic meters)	...	0.25	0.48	0.62	0.81	1.03
Wood pulp	...	0.89	1.90	2.10	2.40	2.60
Newsprint	...	0.29	0.68	0.76	0.80	0.90
Other paper and board	...	1.08	1.95	2.25	2.65	2.90

[1]Beef and veal, pigmeat, mutton and lamb.
[2]Figures refer to calendar year.
... Data not available.

ANNEX TABLE 6B. FAR EAST (EXCLUDING MAINLAND CHINA): EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
			Million metric tons			
GROSS EXPORTS						
Rice (milled equivalent)	8.93	2.98	2.72	3.07	3.55	3.57
Sugar	3.19	0.98	1.92	1.79	1.85	1.85
Vegetable oils and oilseeds (oil equivalent)	1.78	1.37	1.23	1.32	1.55	1.47
Tea	0.36	0.39	0.45	0.47	0.42	0.49
Cotton (lint)	0.69	0.28	0.35	0.19	0.28	0.27
Jute	0.78	0.85	0.98	0.91	0.99	1.00
Rubber (natural)	1.15	2.01	1.87	2.02	2.14	2.06
			Million cubic meters			
Broadleaved logs	...	0.80	1.95	2.20	2.50	2.55
Sawn hardwood	...	0.55	0.70	0.95	1.05	1.10
Plywood	...	0.02	0.07	0.18	0.25	0.28
			Million metric tons			
GROSS IMPORTS						
Wheat and wheat flour	1.00	4.86	6.24	3.96	4.29	4.93
Rice (milled equivalent)	6.13	3.09	3.27	3.45	3.09	4.00
Barley	0.05	0.69	1.09	0.82	0.58	0.94
Maize	0.21	0.20	0.23	0.24	0.44	0.41
Sugar	1.65	1.11	1.90	2.53	2.16	2.15
Vegetable oils and oilseeds (oil equivalent)	0.46	0.32	0.34	0.44	0.53	0.52
Cotton (lint)	0.90	0.52	0.66	0.75	0.64	0.80
Jute	0.04	0.27	0.27	0.25	0.28	0.33
Rubber (natural)	0.25	0.46	0.39	0.45	0.47	0.49

... Data not available.

ANNEX TABLE 7A. NEAR EAST: PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	9.66	11.13	16.04	13.73	14.28	15.27
Barley	4.75	5.28	7.32	6.51	6.02	6.77
Rice (milled equivalent)	1.09	1.33	1.14	1.48	1.35	1.61
Total cereals[1]	20.80	23.96	32.49	29.31	29.26	31.41
Sugar (centrifugal)	0.22	0.43	0.57	0.62	0.73	0.76
Pulses	1.16	1.32	1.33	1.35	1.34	1.30
Citrus fruit	0.79	0.86	1.17	1.11	1.25	1.26
Dates	0.87	0.85	1.08	1.16	1.14	1.11
Bananas	0.10	0.13	0.16	0.17	0.18	0.18
Vegetable oils and oilseeds (oil equivalent)	0.35	0.46	0.54	0.60	0.55	0.63
Tobacco	0.09	0.13	0.18	0.15	0.17	0.16
Cotton (lint)	0.56	0.66	0.66	0.76	0.77	0.81
Milk (total)	11.30	12.45	12.89	12.19	13.17	13.32
Meat[2]	0.99	1.28	1.40	1.44	1.52	1.58
Index of all farm products	83	100	119	119	121	125

[1]Wheat, barley, oats, maize, millet and sorghums and rice.
[2]Beef and veal, pigmeat, mutton and lamb.

ANNEX TABLE 7B. NEAR EAST: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
	Million metric tons					
GROSS EXPORTS						
Wheat and wheat flour	0.24	0.28	0.84	1.28	0.33	0.43
Barley	0.36	0.46	0.84	1.01	0.46	0.79
Rice (milled equivalent)	0.15	0.27	0.07	0.13	0.27	0.26
Total cereals[1]	0.94	1.12	2.02	2.66	1.13	1.55
Citrus fruit[2]	0.30	0.20	0.24	0.34	0.29	0.35
Tobacco	0.04	0.07	0.08	0.07	0.06	0.08
Cotton (lint)	0.47	0.47	0.64	0.45	0.56	0.56
GROSS IMPORTS						
Wheat and wheat flour	0.30	1.47	1.32	0.81	1.16	1.85
Total cereals[1]	0.49	1.74	1.56	1.04	1.67	2.16
Sugar	0.32	0.51	0.64	0.69	0.61	0.65

[1]Including rye, oats, maize, millet and sorghums.
[2]Oranges and lemons only.

ANNEX TABLE 8A. AFRICA: PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	2.50	2.98	3.58	4.11	3.64	4.03
Barley	2.09	2.56	2.98	3.14	2.33	3.07
Maize	4.50	6.95	8.54	8.45	8.48	8.79
Millet and sorghums	7.88	8.95	9.36	9.50	9.18	9.30
Rice (milled equivalent)	1.11	1.74	1.87	1.90	2.02	2.02
Sugar (centrifugal)	0.95	1.36	1.59	1.71	1.89	1.85
Starchy roots	35.38	44.12	49.49	51.00	51.71	53.09
Pulses	0.56	0.88	0.99	1.02	0.97	0.94
Citrus fruit	0.38	0.76	0.93	0.98	1.06	1.16
Bananas	0.25	0.30	0.41	0.37	0.37	0.37
Groundnuts (oil equivalent)	0.56	0.70	0.89	0.80	0.92	0.89
Vegetable oils and oilseeds (oil equivalent)	1.69	2.16	2.47	2.45	2.46	2.54
Coffee	0.12	0.26	0.33	0.37	0.40	0.41
Cocoa	0.49	0.50	0.47	0.49	0.53	0.59
Wine	2.14	1.72	2.27	2.54	2.05	2.40
Cotton (lint)	0.14	0.22	0.25	0.26	0.26	0.27
Sisal	0.15	0.22	0.28	0.29	0.30	0.30
Milk (total)	5.21	6.25	6.85	7.24	7.42	7.72
Meat[1]	1.13	1.43	1.56	1.57	1.55	1.56
Index of all farm products	78	100	113	117	116	120
FOREST PRODUCTS[2]						
Sawnwood (million cubic meters)	...	1.53	1.95	2.10	2.20	2.30

[1]Beef and veal, pigmeat, mutton and lamb. ...Data not available.
[2]Figures refer to calendar year.

ANNEX TABLE 8B. AFRICA: EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
			Million metric tons			
GROSS EXPORTS						
Wheat and wheat flour	0.51	0.20	0.32	0.39	0.45	0.16
Barley	0.21	0.56	0.50	0.64	0.46	0.48
Maize	0.67	0.37	0.24	0.79	1.03	1.36
Sugar	0.66	0.72	0.85	1.00	1.03	1.00
Oranges	0.15	0.40	0.46	0.53	0.66	0.60
Bananas	0.12	0.20	0.30	0.30	0.32	0.28
Groundnuts and groundnut oil (oil equivalent)	0.33	0.34	0.44	0.51	0.45	0.53
Palm kernels and palm kernel oil and palm oil (oil equivalent)	0.55	0.66	0.73	0.76	0.73	0.72
Coffee	0.11	0.26	0.29	0.31	0.40	0.45
Cocoa	0.46	0.48	0.52	0.47	0.46	0.50
Wine	1.41	1.12	1.24	1.59	1.90	1.60
Tobacco	0.03	0.07	0.08	0.09	0.08	0.08
Cotton (lint)	0.13	0.19	0.23	0.30	0.23	0.26
Sisal	0.16	0.22	0.27	0.27	0.32	0.32
			Million cubic meters			
Broadleaved logs	...	1.15	1.40	1.90	2.30	2.35
GROSS IMPORTS			*Million metric tons*			
Wheat and wheat flour	0.28	0.75	0.85	0.77	0.79	1.09
Rice (milled equivalent)	0.37	0.18	0.21	0.22	0.32	0.30
Sugar	0.37	0.52	0.69	0.80	0.85	0.85

... Data not available.

ANNEX TABLE 9A. OCEANIA : PRODUCTION OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953/54	1954/55	1955/56	1956/57
	Million metric tons					
Wheat	4.38	5.30	5.52	4.70	5.40	3.79
Sugar (centrifugal)	0.94	1.04	1.47	1.48	1.35	1.39
Wool (greasy basis)	0.59	0.69	0.76	0.79	0.84	0.89
Milk (total)	10.18	10.23	11.03	10.52	11.26	11.37
Meat[1]	1.42	1.58	1.74	1.79	1.87	1.86
Index of all farm products	88	100	108	108	115	114
FOREST PRODUCTS[2]						
Sawnwood (million cubic meters)	...	4.14	4.45	4.60	4.80	4.50

[1]Beef and veal, pigmeat, mutton and lamb.
[2]Figures refer to calendar year.
...Data not available.

ANNEX TABLE 9B. OCEANIA : EXPORTS AND IMPORTS OF SELECTED COMMODITIES

COMMODITY	1934-38 Average	1948-52 Average	1953	1954	1955	1956
	Million metric tons					
GROSS EXPORTS						
Wheat and wheat flour	2.79	3.10	2.69	1.94	2.55	3.62
Barley	0.07	0.26	0.56	0.63	0.36	0.65
Oats	0.01	0.19	0.18	0.03	0.11	0.21
Sugar	0.56	0.47	0.92	0.81	0.80	0.75
Copra and coconut oil (oil equivalent)	0.13	0.13	0.14	0.16	0.15	0.16
Beef	0.15	0.13	0.20	0.18	0.25	0.27
Mutton and lamb	0.27	0.30	0.32	0.34	0.33	0.38
Butter	0.24	0.21	0.20	0.18	0.24	0.27
Cheese	0.10	0.12	0.13	0.12	0.11	0.11
Wool (clean basis)	0.29	0.43	0.44	0.41	0.46	0.47
GROSS IMPORTS						
Wheat and wheat flour	0.06	0.21	0.25	0.27	0.27	0.30
Sugar	0.08	0.10	0.10	0.12	0.12	0.13
Rubber (natural)	0.01	0.04	0.04	0.06	0.06	0.04

ANNEX TABLE 10. AVERAGE WORLD IMPORT UNIT VALUES IN U.S. DOLLARS, MAJOR COMMODITIES

COMMODITY	Average			1954	1955	1956	1955				1956			
	1947-49	1950-51	1952-53				I	II	III	IV	I	II	III	IV
	U.S. dollars per metric ton													
Wheat	107	88	92	77	78	79	79	79	78	77	79	78	78	80
Wheat flour	146	112	121	114	107	100	108	104	105	110	103	95	101	100
Barley	89	76	85	62	69	69	73	71	67	65	67	70	69	70
Maize	89	76	90	72	74	74	77	75	74	69	69	76	77	75
Rice (milled)	171	139	184	167	142	130	138	144	141	144	133	127	131	130
Sugar (raw and refined)	125	134	129	122	121	121	120	122	121	118	120	123	120	121
Apples	146	125	131	156	139	153	166	158	158	94	136	189	169	107
Bananas[1]	96	99	100	103	105	112	99	107	108	106	97	116	120	112
Orange and tangerines	165	129	128	134	129	163	119	123	155	141	132	194	161	199
Raisins (dried)	282	256	257	235	269	306	246	254	253	293	278	291	310	324
Copra	232	230	191	196	173	165	183	177	166	166	163	168	168	163
Palm kernels	161	170	172	155	143	143	146	143	141	142	142	143	146	142
Soybeans	142	123	127	126	114	106	122	120	113	104	101	111	121	98
Groundnuts (shelled)	203	213	248	236	214	233	217	216	217	204	221	242	239	221
Olive oil[2]	958	690	597	525	602	812	541	558	661	679	810	876	886	744
Coconut oil	359	377	298	312	260	254	293	258	248	251	251	260	251	256
Palm oil	281	274	244	204	224	245	219	226	223	228	232	240	253	256
Palm kernel oil	400	383	325	304	268	266	276	280	257	261	266	264	280	255
Soybean oil	439	371	347	338	303	334	312	295	306	295	302	375	348	328
Groundnut oil	471	477	449	441	346	421	353	325	352	365	386	421	445	436
Fresh, chilled and frozen beef and veal	350	423	439	480	482	428	514	489	469	464	446	443	446	392
Fresh, chilled and frozen mutton and lamb	357	320	377	452	521	504	562	487	479	539	510	470	515	527
Bacon	747	645	718	656	660	740	654	625	635	729	657	742	766	790
Cheese	725	593	643	637	643	724	610	598	613	752	733	685	712	761
Butter	979	841	954	978	979	924	957	937	940	1 112	1 034	854	904	878
Eggs (in the shell)	803	624	720	627	638	624	564	525	647	780	632	539	647	664
Oilcake	105	77	86	84	89	85	95	86	86	88	88	82	84	86
Coffee	613	1 152	1 268	1 581	1 266	1 235	1 440	1 240	1 208	1 200	1 199	1 230	1 262	1 256
Cocoa	622	709	743	1 132	906	633	1 039	990	821	736	693	610	607	601
Tea	1 143	1 055	1 026	1 419	1 553	1 353	1 867	1 517	1 219	1 447	1 242	1 302	1 315	1 562
Wine	263	168	167	145	141	153	140	142	135	147	143	154	161	159
Tobacco (nonmanufactured)	1 252	1 228	1 307	1 374	1 387	1 398	1 289	1 390	1 429	1 416	1 395	1 315	1 443	1 418
Linseed	244	175	183	129	145	160	145	146	147	143	154	166	165	157
Linseed oil	558	374	345	189	236	322	205	236	253	253	293	348	323	312
Cotton (lint)	832	1 073	943	877	854	784	853	914	850	799	790	802	788	758
Jute	[3]345	298	236	202	216	204	228	242	201	189	197	214	207	203
Wool (greasy)	1 005	2 109	1 603	1 660	1 501	1 446	1 532	1 542	1 502	1 403	1 363	1 402	1 446	1 613
Rubber (natural)	415	823	643	453	719	636	625	666	715	868	755	631	555	589

[1] Average export unit value.
[2] Data for 1955 and 1956, excluding imports into Spanish territories from Spain.
[3] Excluding trade between India and Pakistan.

ANNEX TABLE 11. TOTAL ANNUAL CATCH AND LANDINGS OF FISH, CRUSTACEANS, MOLLUSKS, ETC., BY SELECTED COUNTRIES; 1938 AND 1947-56

C - Catch (live weight)
L - Landings (landed weight)
CL - Catch and landings identical

COUNTRY		1938	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
		Thousand metric tons										
MAJOR PRODUCERS												
Canada(including Newfoundland)	C	837	988	1 053	1 000	1 048	1 013	940	925	1 026	954	1 077
	L	761	878	960	899	962	927	858	851	956	884	997
China (Mainland)	CL	[1]1 500	...	...	440	910	1 300	1 667	1 890	2 290	2 520	2 550
Japan	CL	3 562	2 206	2 431	2 642	3 086	3 666	4 820	4 522	4 545	4 913	4 763
Norway	C	1 153	1 196	1 504	1 297	1 468	1 839	1 815	1 557	2 068	1 813	2 129
	L	1 017	1 032	1 318	1 084	1 279	1 669	1 670	1 398	1 905	1 647	1 960
United Kingdom	C	1 198	1 172	1 206	1 159	989	1 086	1 105	1 122	1 070	1 100	1 050
	L	1 098	1 047	1 098	1 049	926	993	1 038	1 030	980	1 004	975
United States (including Alaska)	C	2 253	2 283	2 410	2 504	2 590	2 365	2 391	2 438	2 706	2 739	2 936
	L	1 930	1 967	2 041	2 172	2 216	2 002	1 950	2 019	2 151	2 087	...
U.S.S.R.	CL	1 523	1 427	1 486	1 827	1 627	1 977	1 888	1 983	2 258	2 498	2 617
MEDIUM PRODUCERS												
Angola	CL	26	51	113	131	136	177	154	220	261	290	...
Brazil	CL	103	140	145	153	153	158	175	161	172	...	...
China (Taiwan)	CL	90	63	84	80	84	104	122	130	152	180	193
Chile	CL	32	61	65	77	88	94	119	107	144	214	188
Denmark	C	97	206	226	258	251	293	324	343	359	425	463
	L	89	195	217	245	241	281	312	331	353	418	456
France[2]	C	530	476	468	474	454	528	488	520	500	523	538
	L	463	441	422	426	408	482	426	459	445	459	479
Germany, Western	C	777	...	409	501	552	679	663	730	678	777	771
	L	714	270	368	459	511	636	621	693	642	734	681
Iceland	C	274	484	478	408	373	418	402	425	455	480	517
	L	...	433	414	343	324	371	335	361	384	407	444
India	CL	...	662	...	570	817	751	744	819	828	839	1 012
Italy	CL	181	160	157	178	184	185	212	208	218	218	219
Korea, South	CL	832	302	285	300	216	265	278	257	247	259	341
Malaya	CL	...	119	139	162	148	144	136	147	137	137	...
Morocco[3]	CL	31	51	56	93	123	91	122	128	93	82	99
Netherlands	C	256	295	294	264	258	294	314	343	339	320	298
	L	226	256	258	234	230	262	277	311	301	276	264
Pakistan	CL	...	...	...	...	...	239	243	249	260	271	277
Peru	CL	...	31	48	45	74	97	113	118	146	183	250
Philippines	C	81	251	195	238	226	299	318	312	365	385	416
Portugal	C	247	282	292	281	307	307	363	425	439	425	471
	L	218	230	221	214	229	233	255	293	307	287	321
Spain	C	[4]409	581	547	571	598	604	612	635	650	760	749
	L	[4]388	541	504	518	538	547	549	569	578	676	668
Sweden	C	129	165	194	182	187	183	204	197	193	209	...
	L	124	156	184	173	176	173	194	187	184	200	165
Thailand	CL	161	151	161	154	178	187	192	205	230	213	218
Turkey	CL	76	...	...	...	...	110	100	103	119	112	140
Union of South Africa (including S.W. Africa)	C	68	118	191	233	306	465	652	651	634	621	582
	L	59	103	171	208	272	441	629	627	610	595	550

[1]1936 data. — [2]Includes Algeria. — [3]Data refer to former French Protectorate. — [4]1934 data.

ANNEX TABLE 11 (*concluded*). TOTAL ANNUAL CATCH AND LANDINGS OF FISH, CRUSTACEANS, MOLLUSKS, ETC., BY SELECTED COUNTRIES ; 1938 AND 1947-56

C - Catch (live weight)
L - Landings (landed weight)
CL - Catch and landings identical

COUNTRY		1938	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956
		Thousand metric tons										
SELECTED SMALLER PRODUCERS												
Argentina	CL	55	65	71	65	58	78	79	77	78	79	75
Australia	CL	34	38	39	35	33	38	46	52	54	52	50
Belgian Congo	CL	1	14	18	25	43	37	49	67	66	81	...
Belgium	C	43	81	71	68	59	57	71	74	72	80	69
	L	41	81	66	63	54	52	65	69	66	73	62
Ceylon	CL	...	...	24	36	43	37	26	26	30	31	40
Egypt	CL	38	47	43	55	44	50	54	52	57	63	70
Faeroes	CL	63	97	92	100	98	93	87	89	89	106	116
Finland	CL	44	46	46	66	66	66	58	62	66	63	60
Greece	CL	25	22	34	35	52	43	43	46	53	60	65
Hong Kong	C	...	...	34	...	...	35	41	40	47	46	...
	L	...	14	25	27	31	31	36	35	43	43	...
Ireland	C	13	22	26	18	17	17	19	19	22	24	31
	L	12	20	25	16	16	16	18	18	20	23	29
Mexico	CL	17	54	68	68	74	75	58	67	...	...	...
Morocco[5]	CL	...	11	11	10	9	9	11	11	10	13	9
New Zealand	C	27	34	36	37	35	35	36	37	37	39	..
	L	25	31	33	34	32	32	33	34	34	36	...
Poland	CL	...	40	...	74	81	88	92	94	106	113	127
Tunisia	CL	10	10	12	11	12	15	13	12	...	...	...
Uganda	CL	...	9	11	12	15	20	23	23	24	25	34
Venezuela	CL	22	76	92	75	78	75	62	63	52	70	61
Yugoslavia	CL	17	11	21	27	26	25	24	26	23	23	28

[5] Data refer to former Spanish Protectorate. ... Data not available.

ANNEX TABLE 12. TRENDS OF AVERAGE PER CAPUT CALORIE SUPPLY IN SELECTED COUNTRIES AND PERCENTAGE DERIVED FROM CEREALS AND STARCHY FOODS

COUNTRY	Average Per Caput Calorie Supply			Per Cent of Calories from Cereals and Starchy Roots		
	Prewar	1948/49 - 1950/51	1953/54 - 1954/55	Prewar	1948/49 - 1950/51	1953/54 - 1954/55
	Per caput per day			*Percent*		
EUROPE						
Austria	2 930	2 670	2 800	49	54	47
Belgium-Luxembourg	2 810	2 840	2 960	50	45	43
Denmark	3 420	3 170	3 330	33	39	34
Finland	2 990	3 100	3 140	53	51	45
France	2 870	2 790	2 830	51	51	47
Germany, Western	3 040	2 680	2 930	47	55	43
Greece	2 600	2 490	2 540	61	62	58
Ireland, Rep. of	3 400	3 440	3 610	50	48	45
Italy	2 510	2 380	2 570	65	65	60
Netherlands	2 840	2 940	2 940	44	43	37
Norway	3 210	3 110	3 130	44	44	37
Portugal	...	2 310	2 500	...	60	59
Sweden	3 110	3 160	3 030	37	34	32
Switzerland	3 140	3 170	3 090	39	41	37
United Kingdom	3 110	3 080	3 210	35	39	33
Yugoslavia	3 020	2 140	2 710	76	80	72
NORTH AMERICA						
Canada	3 010	3 070	3 080	35	28	28
U.S.A.	3 150	3 160	3 080	32	27	26
LATIN AMERICA						
Argentina	2 730	3 210	2 840	44	45	41
Brazil	2 150	2 340	2 350	48	49	52
Chile	2 240	2 380	2 490	61	62	59
Cuba	2 610	2 730	...	49	48	...
Honduras	...	1 990	1 980	...	55	62
Peru	1 860	2 070	2 080	64	66	65
Uruguay	2 380	2 890	2 810	40	35	40
Venezuela	...	2 160	2 270	...	46	48
FAR EAST						
India	[1] 1 970	1 620	1 850	[1] 69	67	69
Pakistan	...	2 150	2 130	...	72	79
Japan	2 180	2 050	2 200	77	78	71
Philippines	1 910	...	1 920	67	...	74
AFRICA AND NEAR EAST						
Egypt	2 450	2 370	2 480	72	72	72
Israel	...	2 680	2 870	...	51	54
Southern Rhodesia	...	2 280	2 630	...	74	75
Turkey	2 450	2 490	2 660	76	74	73
Union of South Africa	2 300	2 600	2 580	67	59	58
OCEANIA						
Australia	3 300	3 230	3 120	34	33	31
New Zealand	3 260	3 340	3 400	30	30	28

[1] Includes Pakistan. ... Data not available.

ANNEX TABLE 13. CONSUMPTION OF PULSES, FISH AND MEAT IN SELECTED COUNTRIES

COUNTRY	Pulses and Nuts			Fish			Meat		
	Prewar	1948/49-1950/51	1954/55	Prewar	1948/49-1950/51	1954/55	Prewar	1948/49-1950/51	1954/55
	Kilograms per caput per year								
EUROPE									
Austria	4	3	3	2	2	3	49	30	46
Belgium-Luxembourg	7	4	4	6	7	7	46	44	50
Denmark	1	3	5	15	18	15	75	62	63
Finland	3	2	2	6	8	11	33	28	33
France	8	7	6	6	6	6	61	62	75
Germany, Western	3	4	3	7	8	7	53	29	45
Greece	16	15	17	6	6	6	20	11	16
Ireland, Rep. of	2	2	2	3	3	4	55	53	54
Italy	22	13	12	4	4	5	20	15	19
Netherlands	6	4	4	6	7	6	38	28	38
Norway	3	3	4	21	28	20	38	33	35
Portugal	...	9	7	...	16	18	...	14	15
Sweden	4	4	4	20	20	21	49	49	52
Switzerland	5	5	9	1	2	2	53	44	50
United Kingdom	5	6	6	12	12	10	68	53	66
Yugoslavia	...	4	9	...	1	1	...	15	21
NORTH AMERICA									
Canada	6	6	5	5	6	6	62	70	80
U.S.A.	7	7	7	5	5	5	71	84	88
LATIN AMERICA									
Argentina	2	2	4	2	2	2	107	116	104
Brazil	...	26	25	...	3	2	...	39	27
Chile	10	6	9	7	6	10	38	38	32
Cuba	12	17	...	3	3	...	33	35	...
Honduras	...	12	11	...	2	...	...	...	...
Peru	...	18	9	...	2	2	...	16	20
Uruguay	...	4	2	...	1	2	...	114	96
Venezuela	...	13	16	...	8	7	...	22	18
FAR EAST									
India	[1]22	21	26	[1]1	1	1	[1]3	2	1
Pakistan	...	19	7	...	1	1	...	4	4
Japan	8	3	6	18	15	19	4	2	3
Philippines	...	19	12	...	17	12	...	5	9
AFRICA AND NEAR EAST									
Egypt	20	11	11	2	2	2	7	10	12
Israel	...	9	7	...	13	10	...	15	11
Southern Rhodesia	...	10	16	...	2	2	...	32	29
Turkey	10	10	12	1	1	2	17	16	16
Union of South Africa	2	3	3	2	3	5	38	42	43
OCEANIA									
Australia	2	5	5	5	4	4	120	111	108
New Zealand	3	4	5	6	6	6	109	103	103

[1]Includes Pakistan. ...Data not available.

ANNEX TABLE 14. MILK CONSUMPTION AND PROPORTION AS LIQUID MILK

COUNTRY	Prewar		1949/50		1954/55	
	Kilograms per caput per year[1]	% consumed as liquid milk	Kilograms per caput per year[1]	% consumed as liquid milk	Kilograms per caput per year[1]	% consumed as liquid milk
EUROPE						
Austria	208	80	107	93	215	82
Belgium-Luxembourg	136	60	150	65	175	50
Denmark	195	86	210	83	206	57
Finland	276	94	267	97	311	91
France	150	57	150	59	167	53
Germany, Western	160	72	136	71	170	76
Greece	75	56	64	48	86	49
Ireland, Rep. of	150	94	181	88	193	88
Italy	74	49	79	59	106	50
Netherlands	200	62	...	...	220	93
Norway	251	75	342	74	310	63
Portugal	...	...	...	...	26	62
Sweden	302	83	302	81	295	61
Switzerland	328	74	340	70	310	68
United Kingdom	152	65	212	73	206	73
Yugoslavia	...	...	...	...	106	74
NORTH AMERICA						
Canada	221	73	240	86	240	81
U.S.A.	204	59	249	55	237	58
LATIN AMERICA						
Argentina	163	71	165	64	155	61
Brazil	...	...	79	84	30	87
Chile	54	56	78	62	100	65
Peru	...	...	40	60	40	63
Uruguay	...	...	183	69	180	86
Venezuela	...	...	107	21	120	19
FAR EAST						
India	[2]65	[2]100	43	100	46	100
Japan	4	100	4	100	10	100
AFRICA AND NEAR EAST						
Egypt	40	45	...	...	55	76
Israel	...	...	95	63	120	68
Southern Rhodesia	...	...	33	97	38	92
Turkey	...	...	...	...	32	69
Union of South Africa	76	89	83	86	88	74
OCEANIA						
Australia	164	67	195	71	180	73
New Zealand	220	86	...	...	270	77

[1]Total milk consumed including dairy products, in terms of liquid milk. ...Data not available.
[2]Includes Pakistan.

ANNEX TABLE 15. DETAILS OF CERTAIN HOUSEHOLD SURVEYS OF CONSUMPTION

COUNTRY	Period	Scope	Sample Average of total living expenditure per head per year (1948 U.S. dollars)	Number of households
WESTERN EUROPE				
Austria	1954–55	All households in cities with more than 10,000 inhabitants	309	7 019
Finland	1950–51	Urban married couples	407	538
France[1]	1951	All households in cities with more than 100,000 inhabitants	528	2 000
Ireland	1951–52	All nonfarm households	350	4 092
Netherlands[1]	1951	All nonfarm households	...	3 000
Norway[1]	1952	Urban workers	584	197
Portugal: Lisbon	1948–49	Households composed of 3 persons or more whose head was either a wage earner member of the National Trade Unions or a civil servant with a grade not superior to clerk	291	2 339
Portugal: Oporto	1950–51		144	2 592
Sweden[1]	1933	Workers and low grade employees	575	1 050
	1948	All urban households with children	622	348
	1952	All households	...	573
Switzerland[1]	1936–37	Urban wage earners and salaried employees	539	1 454
	1937–38		529	520
United Kingdom[1]	[1]1937–39	Working and middle class	744	2 585
	[1]1951	National Food Survey All types of households (continuing survey from the war years)	...	6 000
NORTH AMERICA				
Canada	[1]1948	All nonfarm households	919	4 092
	1953	5 large cities	1 296	1 373
U.S.A.	[1]1948	All households with 2 persons or more in towns of more than 2,500 inhabitants	...	1 558
	[1]1950	All households in towns of more than 2,500 inhabitants	...	12 490
	1955	Nation-wide, all households	...	2 245
LATIN AMERICA				
Panama	1952–53	All households with 2 persons or more	439	449
Venezuela[1]	1945	Workers and low income middle class	...	2 867
ASIA				
Ceylon	1952–53	Nation-wide, all households	76	1 085
India (Faridabad)	1954	All households in Faridabad town	53	500
Japan	1950–55	All households in towns of more than 50,000 inhabitants	...	20 000
AFRICA				
Ghana, Kumasi	1955	Kumasi, African urban households	102	570

[1]Not utilized for the main analysis in Chapter III.
... Data not available.

ANNEX TABLE 16. AMOUNTS OF INSTITUTIONAL AGRICULTURAL CREDIT IN USE BY REGIONAS. COUNTRIES AND TERRITORIES: 1951 THROUGH 1953 AND 1955

Region, Country and Territory	Total amount of loans advanced during				Total amount of loans outstanding at end of			
	1951	1952	1953	1955	1951	1952	1953	1955
	Million U.S. dollars				*Million U.S. dollars*			
A. Countries								
EUROPE								
Austria	40.7	—	—	—	—	56.8	62.5	100.0
Belgium	13.5	21.0	27.5	35.5	83.2	89.7	103.3	126.8
Finland	—	—	—	—	186.6	193.0	223.4	353.6
France	—	1 240.0	1 628.7	1 966.1	—	964.7	1 179.5	1 507.7
Germany (Western)	—	179.4	228.6	495.4	220.4	329.5	456.3	949.0
Greece	—	—	—	97.0	—	—	—	—
Italy	—	—	—	—	1 220.0	1 414.2	1 741.3	—
Luxembourg	—	—	—	5.4	—	—	—	7.6
Netherlands	—	—	29.5	39.1	—	—	100.1	140.2
Norway	—	—	—	—	209.6	204.4	233.9	278.6
Portugal	—	33.1	39.8	44.0	—	9.1	13.5	11.4
Spain	33.2	—	13.4	—	11.9	—	—	—
Sweden	—	—	—	—	584.2	575 3	618.4	713.7
United Kingdom	—	—	—	—	—	631.8	637.1	740.9
Yugoslavia	—	79.7	35.6	130.5	—	127.0	131.9	263.8
NORTH AMERICA								
Canada	—	—	—	—	—	552 0	590.9	708.1
U.S.A.	3 502.0	2 851.6	2 784.0	3 308.5	7 837.0	8 408.0	8 249.0	9 811.2
LATIN AMERICA								
Argentina	—	255.2	388.8	—	—	278.0	390.2	203.8
Brazil	315.6	475.7	—	—	391.1	546.0	—	—
Chile	127.5	—	80.2	54.1	—	98.9	83.4	—
Colombia	169.8	209.5	259.0	373.5	79.6	107.6	110.4	184.2
Costa Rica	—	—	—	—	—	—	—	19.0
Cuba	—	16.1	—	—	63.3	58.3	55.8	—
Dominican Republic	8.5	14.6	38.4	16.9	—	15.3	—	—
Ecuador	—	16.7	—	—	—	20.4	—	—
Guatemala	—	—	15.4	16.3	—	—	13.0	16.4
Honduras	—	—	2.7	4.0	—	—	2.6	2.0
Mexico	—	314.7	134.2	—	—	118.2	123.8	—
Panama	—	—	0.8	1.9	—	—	0.6	1.5
Paraguay	—	—	1.0	—	—	—	0.7	0.6
OCEANIA								
Australia	582.4	698.9	—	—	—	486.3	538.0	727.6
New Zealand	88.2	101.4	80.1	110.0	202.4	239.4	240.8	—
FAR EAST								
Burma	7.7	12.6	12.9	11.4	—	—	4.3	8.4
Cambodia	0.4	0.7	1.6	2.6	—	0.9	1.0	1.9
Ceylon	6.9	8.6	6.9	3.6	10.4	12.4	12.5	14.1
India	122.2	104.8	—	—	115.1	142.3	155.7	170.3
Indonesia	—	—	56.2	73.5	—	—	78.9	85.4
Japan	1 270.2	1 154.2	1 220.2	—	463.8	651.8	1 078.0	1 414.0
Korea	—	—	17.4	27.5	—	—	10.7	18.6
Laos	—	—	0.3	—	—	—	—	—
Malaya	—	4.3	—	1.5	—	5.2	—	1.7
Pakistan	—	—	—	—	9.9	14.6	43.4	—
Philippines	80.0	98.2	115.0	128.2	85 9	144.2	170.8	215.8
Thailand	12.0	20.2	22.9	—	33.9	47.3	39.4	—
Viet-Nam	—	—	0.4	3.2	—	—	—	1.5

ANNEX TABLE 16 (*concluded*). AMOUNTS OF INSTITUTIONAL AGRICULTURAL CREDIT IN USE BY REGIONS, COUNTRIES AND TERRITORIES: 1951 THROUGH 1953 AND 1955

Region. Country and Territory	Total amount of loans advanced during				Total amount of loans outstanding at end of			
	1951	1952	1953	1955	1951	1952	1953	1955
	Million U.S. dollars				*Million U.S. dollars*			
NEAR EAST								
Egypt	34.8	54.9	57.2	—	5.5	21.5	19.8	—
Ethiopia	0.06	0.06	0.10	—	0.06	0.11	0.18	—
Iran	—	—	11.3	18.3	—	—	4.5	7.8
Iraq	—	—	3.8	2.7	—	—	—	1.3
Israel	—	—	—	—	—	38.0	63.0	62.8
Jordan	—	—	1.4	2.0	—	—	—	—
Lybia	—	68.3	203.3	—	—	—	—	—
Morocco	—	7.5	7.0	—	—	10.9	11.9	—
Sudan	2.0	2.0	7.8	—	11.8	—	—	—
Syria	9.7	8.6	2.2	—	8.7	—	—	—
Tunisia	—	4.2	7.4	—	—	11.8	15.2	—
Turkey	234.3	431.5	366.1	421.0	—	333.3	364.7	499.0
B. Non-Self-Governing Territories								
NORTH AMERICA								
Puerto Rico	—	30.3	20.9	36.8	—	32.5	35.1	43.5
LATIN AMERICA								
British Guiana	0.3	0.3	0.4	0.8	0.6	0.7	0.7	0.8
Jamaica	—	0.1	2.8	0.8	—	—	2.3	2.5
Martinique	—	1.1	0.8	1.2	—	1.2	1.2	1.4
NEAR EAST								
Cyprus	7.2	7.4	8.7	13.1	8.7	10.0	13.7	23.3
FAR EAST								
Hong Kong	—	—	0.1	0.4	—	—	—	0.2
Sarawak	—	—	7.3	9.0	—	—	4.9	7.5
AFRICA								
Algeria	—	181.4	172.0	186.5	—	82.5	101.6	113.5
Belgian Congo and Ruanda Urundi	0.4	—	1.9	2.8	0.9	—	4.2	18.7
Kenya	—	—	—	5.1	—	—	—	9.5
Madagascar	—	2.9	0.9	1.7	—	3.6	3.1	3.2
Mozambique	—	—	0.1	—	0.6	0.6	0.6	—
Nigeria	0.8	0.8	1.7	0.4	0.3	0.4	0.7	0.2
Tanganyika	0.4	0.3	0.2	0.5	6.6	0.8	4.0	1.6
West Africa (French)	—	1.8	4.5	5.1	—	0.4	5.1	6.4

Notes:

1) Figures in this table refer to credit granted by financial institutions (public and semipublic institutions, banks, insurance companies, co-operatives, etc.) only and do not cover advances by merchants, dealers, private money-lenders, etc. The latter, of course, play a very important role particularly in the more underdeveloped areas. For United States, data exclude loans guaranted by the C.C.C.
2) The original data do not always refer to calendar years. Such split-year data are put under calendar year in which most months of the split year fall.
3) Figures in national currencies are converted into dollars ou the basis of current rates of exchange.
4) Differences in data for the common years in this table, with those given in the *State of Food and Agriculture 1955*, Annex Table 5, are to be explained partly by revised data supplied by countries and partly by the use of current exchange rates instead of the fixed 1953 rates used before.
5) Data for some countries are omitted for years preceding a large-scale devaluation or revaluation of the currency.

— Indicates no data or data not satisfactory.

Source: Replies to FAO Credit Questionnaires. Some other countries and territories, although having replied to the questionnaires, are not shown here because either the data are largely incomplete or the amounts of loan are insignificant.

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